

# OTC-Derivatives Clearing Obligation and Bilateral Margin Requirements

## An Analysis of the European Union Regulatory Regime<sup>1</sup>

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### Abstract

The attributed integral role of over-the-counter (OTC) derivatives in the development of the global financial crisis (GFC) has prompted tremendous regulatory reactions. Central clearing and bilateral margin requirements are two of the obligations imposed to increase transparency, mitigate counterparty credit risk and systemic risk.

Central clearing is postulated to be the panacea for financial stability. The push for central clearing and membership requirements imposed by central counterparties (CCPs) result in a risk concentration at their level. CCPs are systemically relevant institutions and required financial resources should be sufficient to cover their risk exposure. Bilateral margin requirements for non-centrally cleared OTC-derivatives are implemented to reduce counterparty credit risk. Especially, the requirement to exchange initial margin (IM) is subject to discussions and questioned if needed to achieve the regulatory objectives.

This thesis provides a synopsis of selective historical financial crises, an analysis of the applicable European Union regulatory regime, illustrates the importance of a common understanding of derivatives, explains the respective processes of central clearing and bilateral margin requirements, outlines the risks faced by CCPs and stipulates the underlying conceptual considerations to implement IM.

The analysis suggests that in an extreme but plausible scenario the minimum required financial resources of CCPs might not be sufficient and that the requirement to exchange IM is not essential to achieve the intended regulatory objectives.

### Catchwords

EU-Regulation; Derivatives; Clearing; Margin

### Structure

I.	Introduction .....	169
II.	The Past: Crises and Regulatory Actions .....	170
	A. Dutch Tulip Mania .....	170
	B. Banking Crisis 1930-1933 .....	171
	C. Collapse of the Union Market .....	172
III.	Derivatives and the European Union Regulatory Framework .....	172
	A. Definition of Derivatives .....	172
	B. Exchange-Traded Derivatives vs. Over-the-Counter-Derivatives .....	174
	C. Types of Derivatives .....	175
	D. Usage of Derivatives .....	176
	E. EU Regulatory Framework: OTC-Derivatives Market .....	177
IV.	Central Clearing Obligation .....	179
	A. Concept of Central Clearing .....	180
	B. Scope of Central Clearing .....	181
	C. Process of Central Clearing .....	183

<sup>1</sup> The original version of this paper has been adapted to satisfy the respective requirements for this publication.

V.	Bilateral Margin Requirements .....	186
A.	Concept of Bilateral Margin Requirements .....	186
B.	Scope of Bilateral Margin Requirements .....	188
C.	Process of Bilateral Margining .....	189
VI.	Central Clearing Obligation - Transparency and Risks to CCPs .....	190
A.	Transparency .....	190
B.	CCPs-General Risks, Financial Resources and Clearing Member Default .....	191
VII.	Initial Margin: Conceptual Issues and the Need for a Formal Ratification .....	195
A.	Conceptual Shortcomings .....	195
B.	Interpretation of a Group - Need for Clarification .....	199
VIII.	The Future: Contemplate - Evaluate - Review .....	200

## I. Introduction

In 2002 Warren Buffet wrote to the shareholders of Berkshire Hathaway Inc. that in his view »derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal.«<sup>2</sup>

The financial crisis of 2007, which subsequently became a global financial crisis (GFC), revealed the weaknesses of the financial markets and resulted in various regulatory reforms around the globe. There is no doubt that the GFC has been enormous in its scale and dimension. According to estimates by DZ Bank and Berenberg Bank in 2013, the costs for the global economy can be quantified at approximately 8 trillion Euros.<sup>3</sup> However, the corresponding regulatory reaction applicable to the financial service industry can be categorized likewise and is often referred to as a »regulatory tsunami«.<sup>4</sup>

While the majority of the existing literature dealing with the GFC attribute uncontrolled lending, the concomitant exaggeration of housing prices in the United States of America (USA) and the subsequent credit crisis to be the underlying triggers,<sup>5</sup> another financial instrument, namely over-the-counter (OTC) derivatives, came under particular scrutiny.

The focus on OTC-derivatives was exaggerated by articles, including one published by Graham Summers, who stated that OTC-derivatives caused the crisis.<sup>6</sup> In addition other journalists, including Jacob Weisberg, supported the view that deregulated derivatives initiated the financial crisis and accused »Alan Greenspan, Phil Gramm (former chairman of the Senate Banking Committee) and SEC chairman Christopher Cox of wilfully ignoring, for ideological reasons, warnings about the growing market in credit derivatives.«<sup>7</sup>

The Financial Crisis Inquiry Commission (FCIC) concluded in their final report on the causes of the fi-

nanacial and economic crisis in the USA that OTC-derivatives significantly contributed to the crisis.<sup>8</sup>

Taking into account the various perspectives it could be argued that OTC-derivatives were not the underlying cause of the global financial crisis. However, they likely served as an intensifier and provided channels for spreading systemic risk.<sup>9</sup>

As part of the mission to strengthen the international financial regulatory system the G20-leaders agreed in the Pittsburgh Summit 2009 that »all standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements.«<sup>10</sup>

The G20 resolutions were a clear mandate to regulate or re-regulate the OTC-derivative market – nevertheless, the intended time frame proved to be too ambitious. The delay in implementing the respective regulatory framework can be largely attributed to the complexity of OTC-derivatives and the interconnectedness of the respective market spanning across various jurisdictions.<sup>11</sup>

In the European Union (EU) the G20 resolutions were implemented in various Regulations and Directives. The clearing obligation, the reporting requirement to a trade repository (TR) and certain risk mitigation techniques for non-centrally cleared OTC-derivative contracts are promulgated in Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (thereafter EMIR)<sup>12</sup>. The provisions to apply higher capital requirements for non-centrally cleared OTC-derivatives are specified in Directive 2013/36 (EU) on access to the activity of credit institutions and prudential supervision of credit institutions and investment firms (thereafter CRD IV)<sup>13</sup> and Regulation (EU) No 575/2013 on prudential requirements for credit institutions and

2 *Buffet*, 2002 Annual Report Berkshire Hathaway Inc., <<http://www.berkshirehathaway.com/2002ar/2002ar.pdf>> (15), (Retrieved 30.08.2017).

3 *Greive*, Wohlstandsverlust: Deutschland ist einer der größten Verlierer der Krise, <<https://www.welt.de/wirtschaft/article119813280/Deutschland-ist-einer-der-groessten-Verlierer-der-Krise.html>> (Retrieved 31.08.2017).

4 *Piechocki*, Data as a critical factor for central banks, in *Bank for International Settlements* (Ed.), IFC Bulletin No 43 Statistical implications of the new financial landscape (2017) 775 (777).

5 *D. Murphy*, OTC Derivatives: Bilateral Trading and Central Clearing<sup>1</sup> (2013) 97–98.

6 *Summers*, Why Derivatives Caused Financial Crisis, <<https://seekingalpha.com/article/198197-why-derivatives-caused-financial-crisis>> (Retrieved 01.09.2017).

7 *R. Murphy*, Did Deregulated Derivatives Cause the Financial Crisis? <<https://fee.org/articles/did-deregulated-derivatives-cause-the-financial-crisis/>>(Retrieved 01.09.2017).

8 *Financial Crisis Inquiry Commission*, The Financial Crisis Inquiry Report<sup>1</sup> (2011) xxiv.

9 *Gregory*, Central Counterparties: Mandatory Clearing and Bilateral Margin Requirements for OTC Derivatives<sup>1</sup> (2014) 3.

10 *University of Toronto*, G20 Leaders Statement: The Pittsburgh Summit, <<http://www.g20.utoronto.ca/2009/2009communiqued0925.html>> (Sn 13), (Retrieved 30.08.2017).

11 *Balmer*, Clearing OTC Derivatives: An Analysis of the Post-Crisis Policy Reform on Systemic Risk CXXIII<sup>1</sup> (2017) 8; *Gregory*, Central Counterparties<sup>1</sup> 5.

12 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, OJ L 2012/201, 1.

13 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC, OJ L 2013/176, 338.

investment firms (thereafter CRR)<sup>14</sup>. The resolution that derivatives must be traded on exchanges or electronic trading platforms is stipulated in Directive 2014/65/EU on markets in financial instruments (thereafter MiFID II)<sup>15</sup> and Regulation (EU) No 600/2014 on markets in financial instruments (thereafter MiFIR)<sup>16</sup>. Furthermore, additional disclosure requirements, especially when dealing with retail clients, can be found in Regulation (EU) No 1286/2014 on key information documents for packaged retail and insurance-based investment products (PRIIPs) (thereafter PRIIPs-Regulation)<sup>17</sup>.

The focus of this thesis is on OTC-derivatives and the EU implementation of the central clearing obligation and bilateral margin requirements for non-centrally cleared OTC-derivative contracts stipulated under EMIR. The still ongoing legislation and application process in the respective areas allow this thesis to elaborate on issues of immediate interest and to add to the discussion among various market participants about future developments. Nevertheless, in order to provide a general overview of the EU regulatory framework supporting the G20 objectives in regards to the OTC-derivatives market, CRD IV, CRR, MiFID II, MiFIR and PRIIPs will be outlined briefly.

The fundamental questions of this thesis are:

1. Are the regulatory required minimum standards in respect to financial resources sufficient to protect central counterparties (CCPs) in case a larger number of clearing members default or experience financial distress?
2. Do the underlying conceptual considerations justify the requirement to exchange initial margin (IM) for non-centrally cleared OTC-derivative contracts?

Furthermore, various accompanying questions will be addressed in due course of this thesis. The respective findings will be presented as well.

After this introduction, the second chapter will provide an overview of selective historical financial crises and the corresponding regulatory response. The pur-

pose is to illustrate that from a regulatory perspective »financial« crises have been used as a justification to get active. The third chapter is devoted to providing a general understanding about derivatives. In order to further elaborate on the topic, it is essential to clearly define and differentiate certain terms and specifics of derivatives for all readers. The last part of the third chapter provides an overview of the current EU regulatory regime affecting the OTC-derivatives market. Chapters four and five will provide an insight of the central clearing obligation and bilateral margin requirements for non-centrally cleared OTC-derivative contracts. The final two chapters of this thesis, namely chapters six and seven, will focus on selective issues of the central clearing obligation and bilateral margin requirements by providing an analysis of the advantages, shortcomings, impact, implications and impediments of the applicable regulatory regime. Finally, the summary provides an overall view of the findings.

It is important to note that this thesis represents the state of research and the applicable EU regulatory regime at the end of 2017. Although potential changes due to the proposed EMIR review are not expected to be enacted before Q3 2018, they will be addressed if deemed to be necessary for the purpose of this thesis.

## II. The Past: Crises and Regulatory Actions

In 2014 Luis M. Linde, chairman of the Bank of Spain, mentioned in a speech »that crises should have regulatory consequences has been a fairly frequent occurrence in financial history.«<sup>18</sup>

The following section provides a very brief overview of selective historical crises and the corresponding regulatory actions. The aim of this section is to support the perception that regulators regard financial crises and market failures as a justification to get active. Furthermore, it also becomes evident that in the light of regulatory actions the discussions in respect to proportionality and fair and non-discriminatory treatment of market participants are not a new phenomenon.

### A. Dutch Tulip Mania

The Dutch Tulip Mania (tulip mania) of 1633 to 1637 is considered to be the »first recorded financial bubble.«<sup>19</sup>

14 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, OJ L 2013/176, 1.

15 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU, OJ L 2014/173, 349.

16 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012, OJ L 2014/173, 84.

17 Regulation (EU) No 1286/2014 of the European Parliament and of the Council of 26 November 2014 on key information documents for packaged retail and insurance-based investment products (PRIIPs), OJ L 2014/352, 1.

18 Linde, The regulatory response to the crisis, <<http://www.fsb.org/wp-content/uploads/Governor-Linde-The-regulatory-responses-to-the-crisis.pdf>> (2), (Retrieved 20.11.2017).

19 Dowd, Tulip Mania: The 17<sup>th</sup> Century Dutch Tulip & Bulb Market Bubble, <<https://www.focus-economics.com/blog/tulip-mania-dutch-market-bubble>> (Retrieved 25.11.2017).

In the 17<sup>th</sup> century, when the hype about tulip bulbs started to evolve, the Netherlands were a highly commercialized country,<sup>20</sup> controlled global trade and had become the richest country in Europe. As a result, people through all social classes had excessive amounts of cash to spend on luxury goods, one of which was flowers.<sup>21</sup>

Before 1630 tulip bulbs were traded on informal spot markets between growers – meaning that the real assets, tulip bulbs, were physically exchanged for cash. However, beginning in 1630 florists started to trade tulip bulbs, which were still in the ground. Instead of exchanging the physical good for cash, promissory notes with tulip bulbs as the underlying asset were exchanged.<sup>22</sup> This activity of buying and selling an asset for future delivery created a market that today would be classified as a futures market.<sup>23</sup> The new possibility to trade tulip bulbs, without the need of having the physical asset at the time of trading, paired with seemingly ever-increasing prices attracted more and more investors, including speculators.<sup>24</sup>

Prices of tulip bulbs increased dramatically. In 1633, a single bulb of Semper Augustus was traded for 5.500 guilders. In early 1637 the same bulb was priced at 10.000 guilders, which was enough money to purchase one of the biggest and most prestigious houses in Amsterdam.<sup>25</sup> The price explosion was also fuelled by information that started to filter into the market in November 1636. The rumours were that upon an initiative of very influential market participants, who started to lose money, market structure changes in favour of those investors should be announced. The rumours, considerably an inside information, were manifested on February 24<sup>th</sup>, 1637 when Dutch florists announced that futures contracts entered into after November 1636 had to be converted into option contracts. This announcement was later ratified by the Dutch parliament,<sup>26</sup> resulting in a legally justified preferential treatment of certain market participants.

Despite changes to existing market conventions, two other common factors to a bubble, irrationality and optimism, fostered the misallocation of resources and investments to an extent where a crash ultimately had to

occur.<sup>27</sup> Basically the hype came to an end overnight, and in early February 1637, the market for tulip bulbs ceased to function – there were simply no buyers willing to pay those irrational and exorbitant prices.<sup>28</sup>

The development of the tulip bulbs futures market was not accompanied by any legislative acts, which resulted in a completely unregulated market.<sup>29</sup> Consequently, in the aftermath of the crash market participants requested the government to intervene and resolve arising issues. However, on April 25<sup>th</sup> 1637 the Court of Holland decided that all contracts entered into remain valid supplemented by a moratorium on any official enforcement of existing agreements.<sup>30</sup> Market participants were left on their own to find solutions on how to deal with unenforceable contracts and the lack of sufficient protection. The results were one-sided compromises and a massive write down of debt.<sup>31</sup>

## B. Banking Crisis 1930–1933

The Banking Crisis in the United States of America started during the fall of 1930. After the preceding economic downturn resulting from the stock market crash in 1929, the economy was projected to start a prosperous recovery. However, in November of 1930, the insolvency and failure of several commercial banks initiated the Great Depression,<sup>32</sup> which became the longest and most severe economic crisis in the history of the USA.<sup>33</sup>

Within a couple of weeks, after the first failure of a commercial bank, namely the Bank of Tennessee, hundreds of other banks were forced to cease operations.<sup>34</sup> The developments were further promoted by the fear that the USA could leave the gold standard, which led to a massive conversion of dollar assets into gold.<sup>35</sup> Furthermore, lack of trust in the proper functioning of the banking system encouraged depositors to withdraw substantial amounts of funds.<sup>36</sup>

The Federal Reserve System was unable to cope with the emerging crisis and failed to restore trust to the fi-

20 *Garber*, Famous First Bubbles: The Fundamentals of Early Manias (2014) 23.

21 *Sooke*, Tulip mania: The flowers that cost more than houses, <<http://www.bbc.com/culture/story/20160419-tulip-mania-the-flowers-that-cost-more-than-houses>> (Retrieved 25.11.2017).

22 *Narron/Skeie*, Crisis Chronicles: Tulip Mania, 1633-37, <<http://libertystreeteconomics.newyorkfed.org/2013/09/crisis-chronicles-tulip-mania-1633-37.html>> (Retrieved 26.11.2017).

23 *Garber*, Bubbles 45.

24 *Dowd*, Tulip Mania: The 17<sup>th</sup> Century Dutch Tulip & Bulb Market Bubble.

25 *Sooke*, Tulip mania: The flowers that cost more than houses.

26 *Gross*, Bulb Bubble Trouble, <[http://www.slate.com/articles/business/moneybox/2004/07/bulb\\_bubble\\_trouble.html](http://www.slate.com/articles/business/moneybox/2004/07/bulb_bubble_trouble.html)> (Retrieved 26.11.2017).

27 *Garber*, Bubbles 3.

28 *Dowd*, Tulip Mania: The 17<sup>th</sup> Century Dutch Tulip & Bulb Market Bubble.

29 *Narron/Skeie*, Crisis Chronicles: Tulip Mania, 1633-37.

30 *Van der Veen*, The Dutch Tulip Mania: The Social Foundations of a Financial Bubble, <<http://www.maurits.net/Research/TulipMania.pdf>> (28), (Retrieved 26.11.2017).

31 *Narron/Skeie*, Crisis Chronicles: Tulip Mania, 1633-37.

32 *Richardson*, Banking Panics of 1930-31, <[https://www.federalreservehistory.org/essays/banking\\_panics\\_1930\\_31](https://www.federalreservehistory.org/essays/banking_panics_1930_31)> (Accessed 26.11.2017).

33 *Richardson*, The Great Depression, <[https://www.federalreservehistory.org/essays/great\\_depression](https://www.federalreservehistory.org/essays/great_depression)> (Retrieved 29.11.2017).

34 *Richardson*, Banking Panics of 1930-31.

35 *Engemann*, Banking Panics of 1931-33, <[https://www.federalreservehistory.org/essays/banking\\_panics\\_1931\\_33](https://www.federalreservehistory.org/essays/banking_panics_1931_33)> (Retrieved 22.11.2013).

36 *Richardson*, Banking Panics of 1930-31.



financial system. The shortcomings of the structure of the Federal Reserve System were ruthlessly revealed during that time. The commercial banking system completely collapsed in March, 1933 and president Franklin D. Roosevelt was forced to announce a national banking holiday<sup>37</sup> by issuing Proclamation 2039 suspending all banking transactions.<sup>38</sup>

President Roosevelt recognized that there was an urgent need for a »strict supervision of all banking and credits and investments, so that there will be an end to the speculation with other people's money.«<sup>39</sup> In order to restore trust and reform the entire financial system the United States Congress passed several legislative acts including the Emergency Banking Act of 1933, the Banking Act of 1933 (Glass-Steagall Act) and the Banking Act of 1935.<sup>40</sup>

### C. Collapse of the Onion Market

The collapse of the onion market started in August 1955 when two commodity traders gained enough control of the available onion crop supply to conduct price manipulation on a large scale. The two traders, Sam Siegel and Vincent Kosuga, first bought the entire onion crop available in Chicago and then threatened to flood the market, unless growers agreed to buy one-third of the onions. After an agreement was reached, Siegel and Kosuga started to sell onions short on the Chicago Mercantile Exchange (CME) and then flooded the market with their onions.<sup>41</sup> The result was a dramatic decrease in the price of onions; in August 1955 a fifty-pound bag was valued at USD 2.75 compared to USD 0.10 in March 1956, making them basically worthless.<sup>42</sup> Siegel and Kosuga made a fortune leaving behind devastated onion farmers, who demanded a reaction from the regulator.<sup>43</sup>

Despite various arguments that the intended regulatory measures were not proportionate,<sup>44</sup> President Dwight D. Eisenhower signed the Onion Futures Act in August 1958. The Onion Futures Act is still in force today and completely bans the trading of onion futures.<sup>45</sup>

## III. Derivatives and the European Union Regulatory Framework

During a hearing before the Committee on Banking, Housing, and Urban Affairs upon his nomination to be a member and chairman of the Board of Governors of the Federal Reserve System in November 2005, Ben. S. Bernanke provided his view on the potential risks emerging from the derivatives market:

»With respect to their safety, derivatives, for the most part, are traded among very sophisticated financial institutions and individuals who have considerable incentive to understand them and to use them properly. The Federal Reserve's responsibility is to make sure that the institutions it regulates have good systems and good procedures for ensuring that their derivatives portfolios are well-managed and do not create excessive risk in their institutions.«<sup>46</sup>

Despite the fact, that a number of institutions failed to effectively control and manage risks of OTC-derivatives,<sup>47</sup> the aftermath of the GFC also revealed a persistent misunderstanding of what derivatives are. This misinterpretation caused frictions in regulatory, policy and legal discussions.<sup>48</sup>

The objective of this chapter is to establish a general understanding of what derivatives are, where they are traded, the various types and their usage. The chapter begins with a financial and legal definition of derivatives and illustrates that, despite a common legal definition, there might still be the need for further regulatory guidance. The chapter then provides a synopsis of the EU regulatory framework affecting the OTC-derivatives market.

### A. Definition of Derivatives

A derivative is often defined as a »risk transfer agreement, the value of which is derived from the value of an underlying asset.«<sup>49</sup> With some minor adaptations, this definition is utilized as standard in the financial sector. However, financial markets have been very innovative, and derivatives can be structured in various forms<sup>50</sup> and differ greatly in their content and application, often

37 *Richardson*, The Great Depression.

38 *Jabaily*, Bank Holiday of 1933, <[https://www.federalreservehistory.org/essays/bank\\_holiday\\_of\\_1933](https://www.federalreservehistory.org/essays/bank_holiday_of_1933)> (Retrieved 26.11.2017).

39 *Roosevelt*, Franklin D. Roosevelt: Inaugural Address, <<http://www.presidency.ucsb.edu/ws/index.php?pid=14473>> (Para 11), (Retrieved 29.11.2017).

40 *Richardson*, The Great Depression.

41 *Banner*, Speculation: A History of the Fine Line between Gambling and Investing (2016) 229.

42 *Greising/Morse*, Brokers, Bagmen, and Moles: Fraud and Corruption in the Chicago Futures Markets (1991) 81.

43 *Banner*, Speculation 230.

44 *Lambert*, The Futures: The Rise of the Speculator and the Origins of the World's Biggest Markets (2011) 43.

45 United States Code – Title 7 Agriculture, 2011/Section 13-1.

46 *Committee on Banking, Housing, and Urban Affairs United States Senate*, Hearing before the Committee on Banking, Housing, and Urban Affairs United States Senate on the Nomination of Ben S. Bernanke, <<https://www.gpo.gov/fdsys/pkg/CHRG-109shrg26610/pdf/CHRG-109shrg26610.pdf>> (50), (Retrieved 19.11.2017).

47 *Gregory*, Central Counterparties<sup>3</sup> 3-4.

48 *Lynch*, Derivatives: A Twenty-First Century Understanding, *Loyola University Chicago Law Journal* Vol 43 2011, 1 (9).

49 *International Swaps and Derivative Association*, ISDA Product Descriptions and Frequently Asked Questions, <<http://www.isda docs.org/educat/faqs.html#1>> (Retrieved 22.11.2017).

50 *Financial Crisis Inquiry Commission*, *Financial*<sup>4</sup> 46.

making it a challenge to clearly categorize them within this definition.<sup>51</sup>

Despite being the standard in the financial industry, this common definition has also been widely used in legal and policy debates.<sup>52</sup> Timothy E. Lynch points out that, in respect to regulatory analysis, this common definition »is inadequate – it is imprecise, incomplete, and fails to capture the nature and scope of modern derivative transactions«. <sup>53</sup> This deviation often causes an information asymmetry between regulators and the respective industry group, whereas the latter often have the capability to completely comprehend the true nature of a derivative.<sup>54</sup>

Although derivatives can be structured manifold, there are certain characteristics and structures that are common to all derivatives.<sup>55</sup> To provide a general understanding, it is important to briefly outline all of the elements that a financial transaction needs to contain in order to be categorized as a »derivative«. <sup>56</sup>

From a finance perspective, a derivative is:

- ▷ A contract between two counterparties,
- ▷ payments depend on a future incident, that cannot or only to a limited extent be influenced by any of the counterparties involved,
- ▷ counterparties agree to take the opposite side of the outcome, and
- ▷ counterparties have claims against each other.<sup>57</sup>

From a regulatory perspective, the common definition supplemented by the referenced characteristics of a derivative is still not precise enough. Therefore, it is necessary to provide a more specific definition to attain a common understanding,<sup>58</sup> ideally by providing a legal definition of what constitutes a derivative.

EMIR provides a legal definition of a derivative or a derivative contract in Art. 2 (5) referring to financial instruments listed in points (4) to (10) of Section C Annex I of Directive 2004/39/EC on markets in financial instruments (thereafter MiFID I)<sup>59</sup>.<sup>60</sup>

However, due to differences in the transposition of MiFID I into national law, the goal of providing a single uniform legal definition of a derivative could not be achieved in its entirety. This is especially evident in the differentiation between FX-Forward contracts and FX-Spot contracts.<sup>61</sup>

This unclear delineation has the effect that the same financial contract might be a derivative in one-member state, being subject to the EMIR reporting requirements. Whereas, in another member state the identical contract is considered to be a spot contract, which does not fall under the reporting requirement.<sup>62</sup>

With the implementation of MiFID II and MiFIR on January 3<sup>rd</sup>, 2018 the definition of a derivative is now stipulated in Art. 2 (1) (29) of MiFIR.

MiFIR states that derivatives are financial instruments defined in Art. 4 (1) (44) (c) of MiFID II and referred to in Annex I, Section C (4) to (10) of MiFID II.<sup>63</sup> In regards to transferable securities, it needs to be pointed out that only securities that provide the option to buy or sell transferable securities or give rise to a cash settlement depending on the underlying value of transferable securities, currencies, interest rates, commodities or other indices constitute a derivative.<sup>64</sup>

Furthermore, Art. 10 of Commission Delegated Regulation (EU) 2017/565<sup>65</sup> resolves the shortcomings in respect to the differentiation between a FX-Forward contract and a FX-Spot contract by providing clear guidance and a definition.

At the time of writing this thesis, it can be stated that the applicable legal definition of a derivative is sufficient to guarantee a uniform application throughout the European Union. Nevertheless, it is essential for the regulator to closely monitor the ever-developing derivatives market and to implement an effective and efficient procedure to determine if new product structures need to be categorized as derivatives. Whenever necessary, the regulator needs to provide further guidance and updates on what constitutes a derivative.

For the purpose of the thesis, the term derivative refers to the legal definition set out under MiFIR.

51 *Balmer*, Clearing<sup>4</sup> 29.

52 *Lynch*, Loyola University Chicago Law Journal Vol 43 2011, 1 (10–11).

53 *Lynch*, Loyola University Chicago Law Journal Vol 43 2011, 1 (11).

54 *Lynch*, Loyola University Chicago Law Journal Vol 43 2011, 1 (12).

55 *Balmer*, Clearing<sup>4</sup> 29; *Lynch*, Loyola University Chicago Law Journal Vol 43 2011, 1 (15).

56 *Lynch*, Loyola University Chicago Law Journal Vol 43 2011, 1 (30).

57 *Balmer*, Clearing<sup>4</sup> 30; *Lynch*, Loyola University Chicago Law Journal Vol 43 2011, 1 (16–18).

58 *Lynch*, Loyola University Chicago Law Journal Vol 43 2011, 1 (30).

59 Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC, OJ L 2004/145, 1.

60 Regulation (EU) No 648/2012 OJ L 2012/201, 1; Art 2 (5) EMIR.

61 *Cummings Law*, The Definition of Derivative Contracts under EMIR, <[http://www.cummingslaw.com/publications/CL\\_Definition-Derivative-Contracts-Under-EMIR-1014.pdf](http://www.cummingslaw.com/publications/CL_Definition-Derivative-Contracts-Under-EMIR-1014.pdf)> (Para 2), (Retrieved 24.11.2017).

62 *European Securities and Markets Authority*, EMIR Review Report no. 1, <[https://www.esma.europa.eu/sites/default/files/library/2015/11/esma-2015-1251\\_-\\_emir\\_review\\_report\\_no.1\\_on\\_non\\_financial\\_firms.pdf](https://www.esma.europa.eu/sites/default/files/library/2015/11/esma-2015-1251_-_emir_review_report_no.1_on_non_financial_firms.pdf)> (15), (Retrieved 23.11.2017).

63 Art 2 (1) (29) MiFIR.

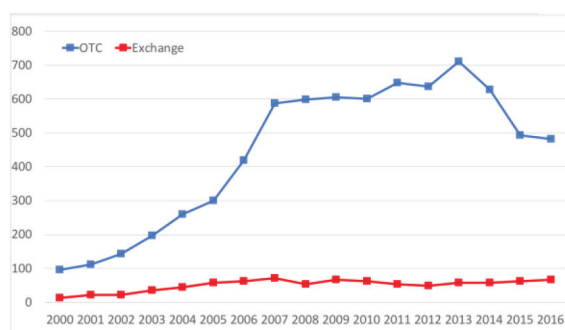
64 Art 4 (1) (44) (c) MiFID II.

65 Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive OJ L 2017/87, 1.

## B. Exchange-Traded Derivatives vs. Over-the-Counter Derivatives

Derivatives can be traded on exchanges or OTC.<sup>66</sup>

As illustrated by Figure 1.0 the size and importance of the derivatives market has grown rapidly over the previous years. Especially, the OTC market experienced tremendous growth fostered by financial innovation, advancements in technology and a supportive regulatory framework.<sup>67</sup>



*Figure 1.0*  
*Outstanding Notional of OTC and Exchange Traded Derivatives. It is important to note that notional amounts outstanding on OTC markets are not directly comparable to those of exchange-traded derivatives. This is attributable to the fact that the statistics provided for exchange traded derivatives refer to net positions, while OTC markets refer to gross positions.*<sup>68</sup>  
*Source: Bank for International Settlements (BIS)*

Exchanges have a very strict set of rules that govern trading and the flow of information.<sup>69</sup> Exchange-traded derivatives are highly standardised contracts. As a result, it is fairly easy to open and close positions in the same contract with different market participants.<sup>70</sup> However, standardisation limits the flexibility of counterparties to tailor the product to match their specific needs.<sup>71</sup>

Exchange-traded derivatives have to be cleared through a clearing house.<sup>72</sup> A clearing house is a third party serving as an intermediary between a buyer and seller. The main activities of a clearing house include the settlement of trade accounts, clearing trades, regulating delivery, reporting of trade data and performing the margining process – as part of an effective risk management.<sup>73</sup> The margining process encompasses measuring, calculating and administrating the collateral of each clearing member in respect to their position and

market exposure with the objective to reduce counterparty credit risk.<sup>74</sup>

In comparison, the OTC-market works differently:

Contracts are bilaterally negotiated between the counterparties. This provides the opportunity to tailor the individual product to meet the specific needs of the contracting party. Nevertheless, customizing also means that unwinding a position can only be carried out with the original counterparty, who might not be willing to unwind the trade or only for an unfair price. Furthermore, the calculation of payment obligations, the subsequent settlement of those payments and certain risk management functions, such as margining, are dealt with on a bilateral basis as well.<sup>75</sup>

Although, the corresponding documentation has to be negotiated between the two parties as well, certain market standards have developed. In praxis, parties generally conclude a framework agreement often referred to as a master agreement, which contains general applicable terms and conditions. Subsequently, the master agreement serves as the basis to document all future trades in financial instruments covered by the agreement. In respect to OTC-derivatives the ISDA Master Agreement, developed by the International Swaps and Derivatives Association (ISDA), is the most widely used form of documentation.<sup>76</sup> Other forms of documentation include Österreichischer Rahmenvertrag für Finanztermingeschäfte (ÖRV), Deutscher Rahmenvertrag für Finanztermingeschäfte (DRV), Schweizer Rahmenvertrag für OTC-Derivate and the European Master Agreement (EMA) including the Annex for Derivative Transactions.

Before the GFC, the OTC-market was largely unregulated. This has fundamentally changed and it appears that it is forced to become more like the exchange traded market,<sup>77</sup> evidenced by the increased reporting requirements, the obligation to centrally clear standardized contracts and the requirement to exchange margin for non-centrally cleared contracts. Nevertheless, according to a survey conducted by ISDA in 2014 and the corresponding remarks of Stephan O'Connor, former chairman of ISDA, it is evident that, despite the regulatory changes affecting the market, OTC-derivatives are essential for end-users around the world to manage their business risks effectively.<sup>78</sup>

<sup>66</sup> Hull, *Fundamentals of Futures and Options Markets*<sup>8</sup> (2013) 1.

<sup>67</sup> Gregory, *Central Counterparties*<sup>1</sup> 17.

<sup>68</sup> Gregory, *Central Counterparties*<sup>1</sup> 17.

<sup>69</sup> Dodd, *Markets: Exchange or Over-the-Counter*, <<http://www.imf.org/external/pubs/ft/fandd/basics/markets.htm>> (Retrieved 01.12.2017).

<sup>70</sup> Gregory, *Central Counterparties*<sup>1</sup> 16.

<sup>71</sup> Balmer, *Clearing*<sup>4</sup> 38.

<sup>72</sup> Hull, *Options, Futures, and Other Derivatives*<sup>7</sup> (2008) 192.

<sup>73</sup> *Investopedia*, *Clearing House*, <<https://www.investopedia.com/terms/c/clearinghouse.asp>> (Retrieved 02.12.2017).

<sup>74</sup> *Eurex Clearing*, *Margining process*, <<http://www.eurexclearing.com/clearing-en/risk-management/margining-process>> (Retrieved 02.12.2017).

<sup>75</sup> Gregory, *Central Counterparties*<sup>1</sup> 16–17.

<sup>76</sup> *Haentjens/De Gioia-Carabellese*, *European Banking and Financial Law*<sup>1</sup> (2015) 215.

<sup>77</sup> Hull, *Fundamentals*<sup>8</sup> 5.

<sup>78</sup> *Dobbs/Sawyer/Chan*, *ISDA AGM to Highlight Economic Value of OTC Derivatives*, <<http://www.businesswire.com/>>



## C. Types of Derivatives

Derivatives can be categorized according to their risk-reward profile into symmetric and asymmetric products.<sup>79</sup> In addition structured products, normally a combination of cash assets and/or derivatives, can provide a particular risk-reward profile for investors.<sup>80</sup>

### 1. Symmetric Derivatives

According to a statement issued by the Austrian Financial Reporting and Auditing Committee (AFRAC) a symmetric derivative is a contract where both parties to the trade, by the time of concluding the transaction, have equal rights and obligations. Throughout the lifetime of the contract, the value of the contract constantly and proportionally changes up and down due to price movements of the underlying asset. In a symmetric risk-reward profile the potential gains or losses equal each other in terms of absolute value. Symmetric derivatives include inter alia Futures, Forwards and Swaps,<sup>81</sup> which will briefly be described in the following subsections.

#### Futures and Forwards

Both Futures and Forwards, are agreements between counterparties to buy or sell a specified underlying asset for a certain price at a specific point of time in the future. Futures are standardized contracts traded on various exchanges around the world, whereas forwards are non-standardized contracts traded OTC.<sup>82</sup> Although both contracts create an obligation for one party to buy and for the other party to sell the underlying asset at the agreed price on a specific future date,<sup>83</sup> the majority of futures contracts are closed out and settled prior to maturity not leading to delivery.<sup>84</sup> On the contrary, Forward contracts are either settled physically or cash-settled on the maturity date, meaning that settlement occurs on the delivery date.<sup>85</sup>

#### Swaps

A Swap, traditionally traded OTC, is a contractual agreement between two parties to exchange a series of future

cash flows on certain settlement dates. Predominately, a Swap is utilized to manage cash flows stemming from interest payments. Subsequently, the Interest Rate Swap is the most frequently executed Swap in the market. The underlying notional amount of the Swap contract can either be exchanged between the parties (physical exchange basis) or it merely serves as the basis to calculate the payment obligations arising between the parties (notional basis).<sup>86</sup>

### 2. Asymmetric Derivatives

In contrast, an asymmetric derivative is a contract that grants the buyer a right, but not an obligation. In order to acquire this right, the buyer has to pay a premium to the seller. The seller has the obligation to fulfil the contract if the buyer decides to exercise his right or upon occurrence of a contractually specified event. The risk of the buyer is limited to the premium paid, whereas the seller has the danger to incur unlimited losses.<sup>87</sup> The next sections provide a description of selective derivatives with an asymmetric risk-reward profile, namely Options, Credit Linked Notes (CLN) and Credit Default Swaps (CDS). The latter being selected due to its close association with the GFC, when CDS sellers – one of the most prominent examples being American International Group, Inc. (AIG) – were unable to meet their respective obligation and failed to provide the contractually agreed credit protection.<sup>88</sup>

#### Options

Generally speaking, an option provides the option holder (option buyer) with a right, but not an obligation to do something. The obligation lies with the option writer (option seller) upon the decision of the option holder to exercise the right granted by the contract. The purchase of an option stipulates an up-front payment (option premium), payable by the option buyer to the option seller. An option that gives the option holder the right to buy the underlying asset, inter alia stocks, currencies, stock indices and futures, by a certain date (expiration date or maturity date) for a specified price (strike price or exercise price) is known as call option. On the contrary, a put option grants the right for the option holder to sell the underlying asset by the expiration date for the strike price. Furthermore, in terms of exercising an option, it needs to be differentiated between American and European options. Whereas American options are exercisable any time up to the expiration date, European

news/home/20140408005092/en/ISDA-AGM-Highlight-Economic-OTC-Derivatives> (Retrieved 02.12.2017).

79 *Besant*, Zinsprodukte in Euroland: Kerninstrumente des Geld- und Anleihemarktes mit ihren Derivaten<sup>1</sup> (2013) 81.

80 *International Capital Market Association*, Structured Products: Principles for Managing the Distributor-Individual Investor Relationship <<https://www.icmagroup.org/assets/documents/FINALGlobalPrinciplesJuly8-2008.pdf>> (2), (Retrieved 05.12.2017).

81 *Austrian Financial Reporting and Auditing Committee*, AFRAC-Stellungnahme 15 Derivate und Sicherungsinstrumente (UGB) (2015) Sn 3 and 9.

82 *Hull*, Fundamentals<sup>8</sup> 1–8.

83 *Balmer*, Clearing<sup>4</sup> 42.

84 *Hull*, Options<sup>1</sup> 23.

85 *Balmer*, Clearing<sup>4</sup> 42.

86 *Balmer*, Clearing<sup>4</sup> 44.

87 *Austrian Financial Reporting and Auditing Committee*, AFRAC-Stellungnahme Sn 4.

88 *Balmer*, Clearing<sup>4</sup> 46–47.

options can only be executed on the expiration date.<sup>89</sup> The loss for the option buyer is capped with the option premium paid, whereas the seller has limited gains – the option premium – with a theoretically unlimited loss potential.<sup>90</sup>

### Credit Default Swaps

Credit derivatives deal with the risk that a debtor is not able to meet his obligations. Their function is to transfer risk stemming from credit exposure from one party to another party, who is willing to take this risk. There are various forms, nevertheless the Credit Default Swap (CDS) is the most relevant credit derivative in the market, also receiving increased attention in the aftermath of the GFC.<sup>91</sup>

A CDS, traditionally traded OTC between two counterparties, provides insurance against the risk of default of a third party, the reference entity. The CDS contract grants the buyer the right upon an event of default or another credit event such as bankruptcy, credit rating loss, failure to pay or restructuring of payment obligations to sell bonds issued by the reference entity to the CDS seller for the face value. The face value is the amount that normally would be repaid by the issuer at the time of maturity. To obtain this right, the buyer of a CDS contract makes periodic payments, a certain percentage of the insured notional amount, to the seller until the expiration of the CDS contract or until a credit event occurs. The total amount paid per year to buy this protection is known as CDS spread. In the case of a credit event, the settlement of the CDS contract can either be physical delivery or cash settlement. In the case of physical delivery, the CDS buyer transfers the bond to the CDS seller and in return receives the face value of the underlying bond. In the case of cash settlement, an independent valuation agent determines the mid-market price of the bond and the CDS seller pays the difference between the mid-market price and face value of the bond to the protection buyer.<sup>92</sup>

### Credit Linked Notes

According to the German Derivatives Association (GDA), a Credit Linked Note (CLN) is categorized as a structured derivative constructed in the form of a security with an embedded credit default swap. This form of derivatives allow investors to invest in the credit quality of a debtor and the respective reference entity. Interest payments and the repayment of the invested capital depend on the credit quality of the reference entity and

the issuer of the CLN. In case there is no credit event, the investor receives interest payments including a premium, and the nominal value of the CLN upon maturity. Whereas in the occurrence of a credit event, future interest payments immediately cease and repayment of the notes are partly or completely cancelled.<sup>93</sup> The buyer of the CLN anticipates the role of a protection seller taking over the risk of a credit event, while the issuer of the notes outsources the default risk.<sup>94</sup>

### D. Usage of Derivatives

The following section provides a brief description and outlines certain characteristic of the three broad types on how to use derivatives. Derivatives can be used for hedging, speculation and arbitrage purposes.

#### Hedging

The purpose of hedging is to reduce the risk exposure to future adverse market movements affecting the price of an asset.<sup>95</sup> However, it is only possible to hedge external factors affecting the price. Internal factors, such as operational risk or the risk stemming from a product failure cannot be covered with a corresponding derivatives contract. Hedging also fosters macro-prudential stability by allowing counterparties with equal but opposing risks to enter into a hedge, thereby reducing uncertainty about future price movements and mitigating their risk exposure.<sup>96</sup> Nevertheless, a hedge also encompasses certain risks such as imperfect hedges not targeting the intended risk, failure of performance due to a default by the counterparty or valuation errors.<sup>97</sup>

#### Speculation

Speculation is a bet on the future development of a market variable without having a corresponding risk exposure.<sup>98</sup> Betting on a potential future outcome with the purpose of making a profit is a characteristic common to speculators and gamblers. This close association often leads to the misperception that using derivatives

89 *Hull*, Options<sup>7</sup> 179.

90 *Hull*, Options<sup>7</sup> 181.

91 *Balmer*, Clearing<sup>1</sup> 44–46.

92 *Hull*, Options<sup>7</sup> 526–528.

93 *Deutscher Derivateverband*, Principles for the issuance and distribution of credit-linked notes, <<https://www.derivateverband.de/EN/MediaLibrary/Document/Principles%20for%20the%20issuance%20and%20distribution%20of%20credit-linked%20notes.pdf>> (Retrieved 10.12.2017).

94 *Bundesanstalt für Finanzdienstleistungsaufsicht*, Hearing: General Administrative Act pursuant to section 4b (1) of the German Securities Trading Act (Wertpapierhandelsgesetz – WpHG) regarding credit-linked notes, <[https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Aufsichtsrecht/Verfuegung/vf\\_160728\\_allgvfg\\_bonitaetsanleihen\\_en.html](https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Aufsichtsrecht/Verfuegung/vf_160728_allgvfg_bonitaetsanleihen_en.html)> (Sec 1), (Retrieved 10.12.2017).

95 *Hull*, Fundamentals<sup>8</sup> 11.

96 *Balmer*, Clearing<sup>1</sup> 32.

97 *Balmer*, Clearing<sup>1</sup> 34.

98 *Hull*, Fundamentals<sup>8</sup> 11.

is gambling with detrimental effects on society. However, it needs to be differentiated that, depending on the form of usage derivatives can have different and contrasting effects on society. Whereas a transaction for pure hedging purposes can stimulate positive social effects and increase social welfare, pure speculation can reduce them by creating excessive risk positions in the market always leaving one counterparty on the wrong-side of the speculative bet.<sup>99</sup>

### Arbitrage

The third form of using derivatives is arbitrage. Arbitrage means that a market participant takes offsetting positions in multiple instruments and markets to lock in a riskless profit. In praxis, only a very small number of arbitrage opportunities are observed and they quickly vanish.<sup>100</sup> Arbitrage is possible in inefficient markets and arbitrageurs very quickly discover those opportunities and take advantage of price mismatches. Subsequently, those actions quickly restore market efficiency.<sup>101</sup>

The proper functioning and the fair and non-discriminatory access to the derivatives market is essential, especially in regards to hedging. The opportunity to hedge against risk exposure can be a decisive factor for a company between staying in business or defaulting. Nevertheless, speculators and arbitrageurs have their *raison d'être* as well, since they are needed to contribute liquidity and prevent market mismatches.<sup>102</sup>

### E. EU Regulatory Framework: OTC-Derivatives Market

The Lamfalussy Report, published in February 2001, contained warnings about the risk for systemic stability originating from the OTC-derivatives market and suggested that there was an urgent need for a close cooperation between European Union regulators to reduce those risks.<sup>103</sup> Despite the fact that exchanged-traded derivatives became regulated in 2004 with MiFID I, the OTC-derivatives market in Europe remained unregulated.<sup>104</sup>

This drastically changed with the increased focus on the role of OTC-derivatives in the aftermath of the GFC, prompting regulators around the world to implement new regulation in order to eliminate the risk and danger

resulting from bilateral OTC-derivative contracts. Furthermore, this regulatory process was stipulated by the opinion that the OTC-market was too large, too interconnected and not transparent enough. The subsequent regulatory response included inter alia higher capital requirements, reporting and disclosure requirements, bilateral margin requirements and mandatory central clearing.<sup>105</sup>

In November 2008 the initial intention of the G20 regulatory goal was »just« to strengthen the resilience and transparency of credit derivatives market in an effort to reduce systemic risk.<sup>106</sup> However, less than a year later in September 2009, the G20 regulatory goal was re-defined in the Pittsburgh Summit to basically cover all OTC-derivative contracts.<sup>107</sup>

The following section provides an abstract of the European Union regulatory developments affecting the OTC-derivatives market. The intended purpose of this section is to provide the reader with an overview and to foster an understanding on where to find the respective regulatory framework. Due to the vast amount of Level 2<sup>108</sup> and Level 3 measures, this overview will solely provide Level 1 measures affecting the OTC-derivatives market.

### General Overview – Level 1

#### *European Market Infrastructure Regulation (EMIR)*<sup>109</sup>

The European Market Infrastructure Regulation (EMIR), which entered into force on 16<sup>th</sup> of August 2012, is the European response to the G20 commitment in Pittsburgh and the central piece of legislation to regulate the OTC-derivatives market.<sup>110</sup> EMIR contains provisions in respect to clearing obligation, reporting obligation, risk mitigation techniques for non-centrally cleared OTC-derivatives and requirements in respect to the function of central counterparties (CCPs) and trade repositories (TRs). The provisions intend to increase transparency, reduce counterparty credit risk, reduce operational risk and to minimize interconnectedness among market participants with the overall objective to mitigate po-

99 Balmer, Clearing<sup>1</sup> 35–37.

100 Hull, Fundamentals<sup>8</sup> 17–18.

101 Balmer, Clearing<sup>1</sup> 37.

102 Balmer, Clearing<sup>1</sup> 31–37.

103 Lamfalussy/Herkströter/Rojo/Ryden/Spaventa/Walter/Wicks, Final Report of the Committee of the Wise Men on the Regulation of the European Securities Market, <[https://www.esma.europa.eu/sites/default/files/library/2015/11/lamfalussy\\_report.pdf](https://www.esma.europa.eu/sites/default/files/library/2015/11/lamfalussy_report.pdf)> (91), (Retrieved 12.12.2017).

104 Balmer, Clearing<sup>1</sup> 93–94.

105 Gregory, Central Counterparties<sup>1</sup> 4.

106 University of Toronto, Declaration of the Summit on Financial Markets and the World Economy, <<http://www.g20.utoronto.ca/2008/2008declaration1115.html>> (Sn 10), (Retrieved 30.08.2017).

107 University of Toronto, G20 Leaders Statement: The Pittsburgh Summit, <<http://www.g20.utoronto.ca/2009/2009communique0925.html>> (Sn 13), (Retrieved 30.08.2017).

108 The Lamfalussy process was introduced in 2002 on a European level. The underlying objective is to provide faster and more flexible legislation for the financial service industry.

109 Regulation (EU) No 648/2012 OJ L 2012/201, 1.

110 *Temporale*, Europäische Finanzmarktregulierung: Handbuch zu EMIR, MiFID II/MiFIR, PRIIPs, MAD/MAR, OTC-Derivaten und Hochfrequenzhandel<sup>1</sup> (2015) 6, 126.

tential systemic risks stemming from the OTC-derivatives market.<sup>111</sup>

*Capital Requirements Directive (CRD IV)*<sup>112</sup> and *Capital Requirements Regulation (CRR)*<sup>113</sup>

In the aftermath of the GFC, the Basel Committee on Banking Supervision (Basel Committee) started to address the identified shortcomings by initiating a review and modification process to the existing Basel II framework. The result was Basel III, which mandates banks to »hold more and better quality-capital, introduces liquidity standards and proposes changes to the calculation of risk-weighted assets«.<sup>114</sup>

The Basel III recommendations were implemented in the EU with Directive 2013/36/EU (CRD IV) and Regulation (EU) No 575/2013 (CRR)<sup>115</sup> and are applicable since 1<sup>st</sup> of January, 2014.<sup>116</sup>

Under Basel II and the respective EU regulatory framework, trade exposures to central counterparties (CCPs) were subject to a 0 % risk-weight. The new capital requirement regime, CRD IV and CRR, increase capital requirements for centrally cleared OTC-derivative transactions, resulting in a risk weight of 2 %, if CCP holds assets in a bankruptcy remote manner, otherwise 4 % are applicable to mark-to-market and collateral exposures to qualified CCPs. Exposure to non-qualifying CCPs can be subject to capital requirements of up to 50 %.<sup>117</sup> Compared to the applicable regime before CRD IV and CRR, bilateral trades are subject to even higher capital requirements – the Basel Committee expects a fourfold increase of the capital requirements for bilateral OTC-derivative transactions.<sup>118</sup>

This privileged treatment of centrally cleared OTC-derivative transactions compared to bilateral transactions provides an enormous incentive for market participants to clear transactions through a qualified CCP,

regardless if the transaction is subject to the clearing obligation or not.<sup>119</sup>

*Packaged Retail and Insurance-based Investment Products Regulation (PRIIPs)*<sup>120</sup>

Regulation (EU) No 1286/2014, also referred to as PRIIPs-Regulation, entered into force on 1<sup>st</sup> of January 2018 impacting the financial service industry, including banking, insurance and the fund industry. Despite various other products, OTC-derivatives are also within the scope of the PRIIPs regulatory framework.<sup>121</sup>

PRIIPs are very common and popular instruments in the European retail banking market. According to the European Commission, the market can be valued around 10 trillion Euros. Most of the products categorized as PRIIPs are complex, lack certain transparency requirements and are therefore difficult to comprehend and compare with other investment products. PRIIPs aims to tackle those shortcomings by obliging those who produce or sell those products to provide retail investors with a Key Information Document (KID). In order to make KIDs comparable between different financial service providers the structure and content needs to be standardized. In order to achieve this comparability, the PRIIPs-Regulation and the corresponding Level 2 and Level 3 measures stipulate certain requirements on structure and content.<sup>122</sup>

Seven informational sections need to be stated in each KID:

- ▷ What is the product?
- ▷ What are the risks and what could the investor get in return?
- ▷ What happens if the manufacturer of the product is unable to pay out?
- ▷ What are the costs?
- ▷ How long should the investor hold product and can the investor take money out early?
- ▷ How can the investor complain?
- ▷ Other relevant information?

111 *European Commission*, Derivatives/EMIR, <[https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/post-trade-services/derivatives-emir\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/post-trade-services/derivatives-emir_en)> (Retrieved 02.09.2017).

112 Directive 2013/36/EU OJ L 2013/176, 338.

113 Regulation (EU) No 575/2013 OJ L 2013/176, 1.

114 *Austrian National Bank (OeNB)*, International and national regulatory framework, <<https://www.oenb.at/en/financial-market/banking-supervision/regulatory-frameworks.html>> (Retrieved 28.01.2018).

115 *Barth*, Regulierung des Derivatehandels nach MiFID II und MiFIR, in *Tietje/Kraft* (Ed), Beiträge zum Transnationalen Wirtschaftsrecht (2015), 1 (15).

116 *Austrian National Bank (OeNB)*, International and national regulatory framework.

117 *Deloitte*, OTC Derivative – The new cost of trading, <<https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/financial-services/deloitte-uk-fs-otc-derivatives-april-14.pdf>> (7, 15), (Retrieved 28.01.2018).

118 *Barth* in *Tietje/Kraft* 1 (16).

119 *Barth* in *Tietje/Kraft* 1 (15, 16).

120 Regulation (EU) No 1286/2014 OJ L 2014/352, 1.

121 *Deloitte*, PRIIPs – The way forward, <[https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/FinancialServices/investmentmanagement/ie\\_2017\\_linkn\\_learn\\_PRIIPs\\_Deloitte\\_Ireland.pdf](https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/FinancialServices/investmentmanagement/ie_2017_linkn_learn_PRIIPs_Deloitte_Ireland.pdf)> (3) (Retrieved 28.01.2018).

122 *European Commission*, Key information documents for packaged retail and insurance-based investment products (PRIIPs), <[https://ec.europa.eu/info/business-economy-euro/banking-and-finance/consumer-finance-and-payments/consumer-financial-services/key-information-documents-packaged-retail-and-insurance-based-investment-products-priips\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/consumer-finance-and-payments/consumer-financial-services/key-information-documents-packaged-retail-and-insurance-based-investment-products-priips_en)> (Retrieved 28.01.2018).



The KID should be a maximum of three pages and needs to provide clear and not misleading information on the respective product. The KID needs to be handed out to the retail investor in sufficient amount of time before the investor enters into a contract or an offer is made relating to the product. The purpose and underlying objective of a KID is to provide the investor with enough information to make a well-informed investment decision.<sup>123</sup>

Generally, the intended objective to provide retail investors with a compact and comprehensible information document needs to be supported. Nevertheless, the practical implementation revealed that the information provided instead causes confusion. In particular, understanding and interpreting the depicted performance scenarios represents a major challenge for retail investors. One of the reasons identified for those problems is that the required method to calculate performance scenarios contains certain conceptual flaws, which results in overly optimistic scenarios and misleading information for investors.<sup>124</sup>

*Markets in Financial Instrument Directive (MiFID II)*<sup>125</sup> and *Markets in Financial Instrument Regulation (MiFIR)*<sup>126</sup>

In June 2014, Directive 2014/65/EU MiFID II and Regulation (EU) No 600/2014 MiFIR were published in the Official Journal of the European Union,<sup>127</sup> with the objectives to strengthen investor protection and make financial markets more efficient, transparent and resilient.<sup>128</sup>

In respect to the regulation of OTC-derivatives MiFID II and MiFIR address three main topics, which are outlined below.

- ▷ First, the trading obligation for OTC-derivatives. The trading obligation is determined if the OTC-derivative is subject to the clearing obligation according to EMIR and in addition it needs to be sufficiently liquid.<sup>129</sup>
- ▷ Second, increase transparency of OTC-derivatives market by implementing pre- and post-trade publication requirements for derivatives executed on organized trading venues according to Art. 28 (1) MiFIR.<sup>130</sup>

- ▷ Third, implementing a new regulatory regime for commodity derivatives.<sup>131</sup>

The implementation of MiFID II and MiFIR imposed a variety of challenges for all parties affected. The European Securities and Market Authority (ESMA) recognized those issues and informed the European Commission that, due to the complexity of the legislative acts and the accompanying enormous technical challenges imposed on competent authorities and market participants, it was highly possible that the supporting systems would not be implemented or function properly by 3<sup>rd</sup> of January 2017.<sup>132</sup> As a consequence, the Commission proposed a one-year postponement, which was granted by the European Parliament on 7<sup>th</sup> of June, 2016.<sup>133</sup>

### Conclusion

Merely looking at Level 1 regulatory developments in the aftermath of the GFC, it can be constituted that almost nine years after the G20 commitment in Pittsburgh the applicable regulatory regime for OTC-derivatives on an European level has experienced a major transformation, transforming the respective market from unregulated to highly regulated. After providing an overview of the current regulatory regime affecting the OTC-derivative market, the next section is going to focus on the main issues of this thesis – clearing obligation and bilateral margin requirements for non-centrally cleared OTC-derivative transactions.

## IV. Central Clearing Obligation

The purpose of this section is to provide an overview of the concept of central clearing. The section provides information on how central clearing works and the scope of the central clearing obligation. Furthermore, at the discretion of the author, the section elaborates on certain provisions, which are considered to be of specific importance for the purpose of this thesis. It needs to be noted that due to the vast amount of applicable regulatory provisions, it is not possible to elaborate on all those requirements within the scope of this thesis.

123 Deloitte, PRIIPs – The way forward (4–5).

124 Flood, Regulators meet over ›absurd‹ performance forecasts, <<https://www.ft.com/content/8do307a-fbab-11e7-a492-2c9be7f3120a>> (Retrieved 20.01.2018); Cash, IA calls for ›urgent‹ review of Key Information Documents, <<https://www.moneymarketing.co.uk/ia-urgent-review-key-information-documents-kids/>> (Retrieved 25.01.2018).

125 Directive 2014/65/EU OJ L 2014/173, 349.

126 Regulation (EU) No 600/2014 OJ L 2014/173, 84.

127 *Temporale*, Europäische Finanzmarktregulierung<sup>4</sup> 7.

128 Barth in *Tietje/Kraft* 1 (16).

129 Barth in *Tietje/Kraft* 1 (17).

130 Barth in *Tietje/Kraft* 1 (26).

131 Barth in *Tietje/Kraft* 1 (34).

132 European Commission, Commission extends by one year the application date for the MiFID II package, <[http://europa.eu/rapid/press-release\\_IP-16-265\\_en.htm](http://europa.eu/rapid/press-release_IP-16-265_en.htm)> (Retrieved 31.01.2018).

133 European Parliament, Parliament gives firms a further year to implement financial legislation, <[http://www.euro.parl.europa.eu/pdfs/news/expert/infopress/20160607IPR30864/20160607IPR30864\\_en.pdf](http://www.euro.parl.europa.eu/pdfs/news/expert/infopress/20160607IPR30864/20160607IPR30864_en.pdf)> (Retrieved 31.01.2018).



### A. Concept of Central Clearing

The GFC revealed the difficulties associated with the OTC-derivative markets and the weaknesses of the financial infrastructure in place. As a result, various initiatives emerged to develop a new market infrastructure with the underlying objective to effectively manage and mitigate systemic risk. Even before the financial crisis, certain market participants utilized the services provided by central counterparties (CCPs) to clear OTC-derivative contracts. Throughout the turmoil of the GFC, CCPs continued to function without any major disruption, whereas unwinding trades caused various difficulties in cases where no CCP was involved. Those were largely attributable to the complexity, interconnectedness and opaqueness of the bilateral OTC-derivatives market (Figure 2.0). Therefore, it might not be a surprise that the obligation to centrally clear OTC-derivative contracts is considered by many to be the panacea for financial stability. However, despite the fact that central clearing is considered to reduce systemic risk by the position netting ability of CCPs, effective risk management standards and the mutualisation of losses in the event of a clearing member failure, it needs to be noted that CCPs concentrate counterparty and operational risk on their level magnifying systemic risk in case a CCP defaults (Figure 3.0).<sup>134</sup> According to ISDA, the requirement to centrally clear standardized OTC-derivative contracts will result in CCPs becoming the most systemically relevant market members.<sup>135</sup> For the avoidance of doubt, it needs to be mentioned at this point that counterparties can still clear OTC-derivative contracts on a bilateral basis, provided that the contract is not subject to the clearing obligation under the relevant regulatory framework. On the other hand, counterparties can also agree on a bilateral basis to clear contracts not subject to the clearing obligation via a CCP, provided that the CCP has the ability to clear the respective product class.<sup>136</sup>

#### Bilateral Cleared Network

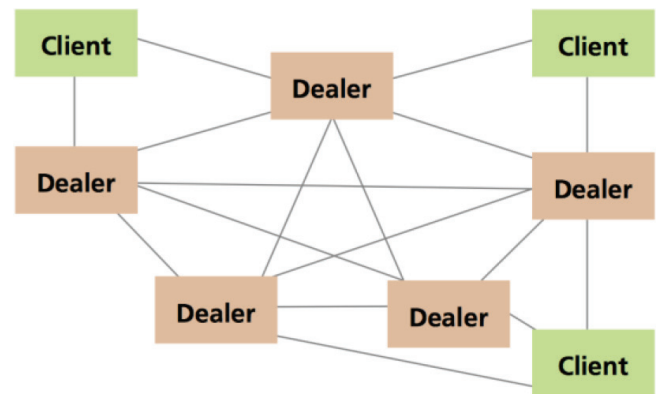


Figure 2.0  
Bilateral Cleared Network: Bilateral cleared OTC-derivatives market – the complex, interconnected and opaque structure led to various difficulties during the GFC. Source: Ziltener<sup>137</sup>

#### Central Cleared Network

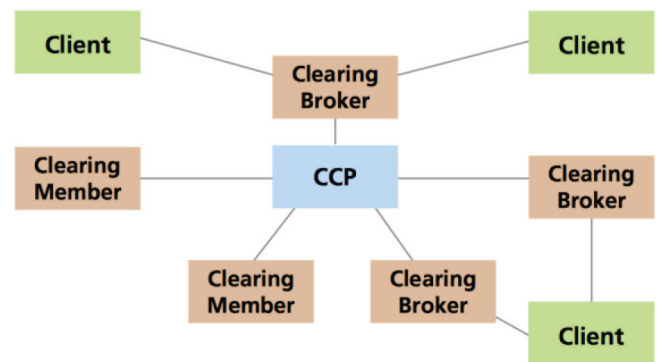


Figure 3.0  
Central Cleared Network: Counterparty credit risk is transferred to the CCP reducing the complexity and interconnectedness common to the bilateral cleared network. Source: Ziltener<sup>138</sup>

Before illustrating and describing the clearing process, it is essential to provide some additional information, especially in regards to the definition of clearing, respectively central clearing and to provide an overview on the parties involved in the central clearing process.

#### Definition of Clearing

In financial markets, the term clearing has numerous meanings and is therefore interpreted in various ways amongst market participants.<sup>139</sup> In general, clearing in

<sup>134</sup> International Monetary Fund (IMF), Making Over-The-Counter Derivatives Safer: The Role of Central Counterparties, <<https://www.imf.org/external/pubs/ft/gfsr/2010/01/pdf/chap3.pdf>> (2), (Retrieved 11.09.2017).

<sup>135</sup> International Swaps and Derivatives Association, CCP Loss Allocation at the End of the Waterfall, <<https://www.isda.org/a/jTDDE/ccp-loss-allocation-waterfall-0807.pdf>> (4), (Retrieved 02.02.2018).

<sup>136</sup> D. Murphy, OTC Derivatives<sup>1</sup> 153.

<sup>137</sup> Ziltener, OTC Derivatives Clearing in Praxis, <[http://www.in-cubegroup.com/uploads/tx\\_news/Clearing\\_in\\_der\\_Praxis\\_-\\_23.09.2014.pdf](http://www.in-cubegroup.com/uploads/tx_news/Clearing_in_der_Praxis_-_23.09.2014.pdf)> (4), (Retrieved 02.02.2018).

<sup>138</sup> Ziltener, OTC Derivatives Clearing in Praxis (4).

<sup>139</sup> EuroCCP, Perspectives, <<https://euroccp.com/home/news-perspectives/perspectives/>> (Retrieved 02.02.2018).

the OTC-derivatives market can be conducted in the form of bilateral or central clearing. In the bilateral clearing process, the two parties to the trade take responsibility to make respective arrangements to successfully clear the trade. Whereas in the central clearing process, the responsibility is transferred to a third party, commonly referred to as CCP.<sup>140</sup> In the clearing process, all steps are designed to support the management of risks. Those risks include counterparty, market, settlement and legal which can evolve between the execution and the final settlement of a transaction.<sup>141</sup>

From a regulatory perspective Art. 2 (3) of EMIR provides the legal definition stating that clearing is »the process of establishing positions, including the calculation of net obligations, and ensuring that financial instruments, cash, or both, are available to secure the exposure arising from those positions.«<sup>142</sup>

### Parties to the Central Clearing Process

The clearing process through a CCP involves a number of participants. This includes the counterparties to the original bilateral trade, the CCP, one or more clearing members and in indirect clearing arrangements a non-clearing member, also referred to as client.

#### CCPs

A CCP is a corporate entity performing certain activities intended to effectively manage and mitigate risks.<sup>143</sup>

In case of a successful incorporation of the original bilateral trade into the clearing process, the CCP becomes the legal counterparty to the seller and the buyer.<sup>144</sup> The more traditional definition of a CCP is »a CCP is the buyer to every seller and the seller to every buyer.«<sup>145</sup> The legal definition of a CCP stipulated under Art. 2 (1) EMIR is also based on this more traditional approach by defining a CCP as »a legal person that interposes itself between the counterparties to the contracts traded on one or more financial markets, becoming the buyer to every seller and the seller to every buyer.«<sup>146</sup>

At the time of writing, the most common CCPs in the European OTC-derivatives market are LCH.Clearnet and EUREX.<sup>147</sup>

#### Clearing Members and Clients

Clearing members are members of a CCP and need to fulfil all the requirements and obligations set out by

the respective CCP.<sup>148</sup> From a regulatory perspective, the term clearing member is defined in Art. 2 (14) EMIR stating that a »clearing member means an undertaking which participates in a CCP and which is responsible for discharging the financial obligations arising from that participation.«<sup>149</sup>

In praxis, a clearing member can either be an individual clearing member (ICM) or a general clearing member (GCM), commonly referred to as clearing broker. ICM members only have the ability to clear their own trades, whereas GCM members are not only allowed to clear their own trades but also third-party trades providing a valuable service for market participants, who are unable to establish direct access to CCPs. Institutions that have no direct relationship to a CCP have to clear their trades through a clearing broker. Institutions with no direct access to CCPs are known as non-clearing members (NCM) or clients.<sup>150</sup> In case a GCM clears a trade for a client the legal counterparty for the client, upon successful transmission of a trade into clearing, changes from the original counterparty to the clearing broker.<sup>151</sup>

According to EMIR Art. 2 (15) a client is »an undertaking with a contractual relationship with a clearing member of a CCP which enables that undertaking to clear its transactions with that CCP.«<sup>152</sup>

### B. Scope of Central Clearing

The following section outlines the personal and material scope of the obligation to centrally clear OTC-derivative contracts according to Art. 4 EMIR.

#### Personal Scope

The personal scope of the central clearing obligation encompasses financial counterparties (FCs) and non-financial counterparties (NFCs). However, NFCs are only obliged to centrally clear OTC-derivative contracts if they conclude contracts for the purpose other than hedging risk directly relating to their commercial activity and the notional amount of those speculative trades exceeds a defined threshold. For the purpose of calculating this threshold, hedging transactions do not need to be considered.<sup>153</sup>

The applicable clearing thresholds for the respective product classes are illustrated in Figure 4.0.

140 Gregory, Central Counterparties<sup>1</sup> 27.

141 EuroCCP, Perspectives.

142 Art 2 (3) EMIR.

143 EuroCCP, Perspectives.

144 Ziltener, OTC Derivatives Clearing in Praxis (3).

145 EuroCCP, Perspectives.

146 Art 2 (1) EMIR.

147 Gregory, Central Counterparties<sup>1</sup> 126.

148 Ziltener, OTC Derivatives Clearing in Praxis (3).

149 Art 2 (14) EMIR.

150 Gregory, Central Counterparties<sup>1</sup> 127-128.

151 Ziltener, OTC Derivatives Clearing in Praxis (7).

152 Art 2 (15) EMIR.

153 Barth in Tietje/Kraft 1 (13); Art. 40 (3) EMIR.

EUR 1 billion*	Credit derivative contracts
EUR 1 billion*	Equity derivative contracts
EUR 3 billion*	Interest rate derivative contracts
EUR 3 billion*	Foreign exchange derivative contracts
EUR 3 billion*	Commodity derivative contracts and others

\* in gross notional value

Figure 4.0

*Value of Clearing Threshold NFC: Thresholds are provided in Art. 11 of Commission Delegated Regulation (EU) No 149/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 with regard to regulatory technical standards on indirect clearing arrangements, the clearing obligation, the public register, access to a trading venue, non-financial counterparties, and risk mitigation techniques for OTC derivatives contracts not cleared by a CCP (RTS 149/2013)<sup>154</sup>. Source: ESMA<sup>155</sup>*

According to Art. 10 (1) (a) EMIR, a NFC needs to immediately inform the ESMA and the national competent authority upon exceeding the clearing threshold in one product class. NFCs exceeding the respective threshold, also referred to as NFC<sup>+</sup>,<sup>156</sup> in one product class are obliged to clear future trades in all product classes subject to the clearing obligation including transactions conducted for hedging purposes. All undertakings not listed in Art. 2 (8) EMIR or Art. 2 (1) EMIR need to be treated as NFCs.<sup>157</sup>

Financial counterparties are explicitly listed in Art. 2 (8) EMIR and include inter alia investment firms, credit institutions, insurance undertakings, assurance undertakings and reinsurance undertakings.<sup>158</sup> The clearing obligation for entities within the scope, FC and NFC<sup>+</sup>, is phased in over a certain period of time in order to give the respective market participants sufficient time to implement the necessary procedures and adapt internal processes.<sup>159</sup>

## Material Scope

The material scope of the clearing obligation deals with the issue if OTC-derivatives, respectively which classes of OTC-derivatives, can be cleared through a CCP. The clearing eligibility and subsequently the requirement to clear through a CCP is determined by the European Commission.<sup>160</sup> EMIR encompasses two possible approaches to determine the relevant classes of OTC-derivatives subject to the clearing obligation. First, the »bottom-up« approach under Art. 5 (2) EMIR makes the determination based on classes, which are already cleared by an authorised CCP. Whereas, the second »bottom down« approach described in Art 5 (3) EMIR stipulates that ESMA on its own initiative is going to identify classes, which should become subject to the clearing obligation but for which no CCP has been authorised yet.<sup>161</sup> The respective criteria to determine which OTC-derivatives should be subject to mandatory clearing are set out in Art. 5 (4) of EMIR. The respective Level 1 text is further specified in Art. 7 of Commission Delegated Regulation (EU) No. 149/2013 (thereafter RTS 149/2013). In due course of preparing the respective regulatory technical standards, the ESMA needs to consider the degree of standardisation of contractual terms, the volume and liquidity and the availability of rational, consistent and generally accepted pricing information for the relevant class of OTC-derivatives.<sup>162</sup> Classes of OTC-derivatives subject to the clearing obligation need to be published by ESMA in a public register<sup>163</sup>, furthermore this register needs to contain a list of authorised CCPs and the dates from which the clearing obligation takes effect.<sup>164</sup>

At the time of this writing, the following regulatory technical standards have been published in the Official Journal setting out classes of OTC-derivative contracts subject to the clearing obligation. Furthermore, they contain the categories of counterparties and provide the respective phase-in periods for each category of counterparties.

- ▷ Commission Delegated Regulation (EU) 2015/2205 with regard to regulatory technical standards on the clearing obligation (thereafter RTS 2015/2205)<sup>165</sup>

<sup>154</sup> Art 11 Commission Delegated Regulation (EU) No 149/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards on indirect clearing arrangements, the clearing obligation, the public register, access to a trading venue, non-financial counterparties, and risk mitigation techniques for OTC derivatives contracts not cleared by a CCP, OJ L 2013/52, 11.

<sup>155</sup> *European Securities and Markets Authority*, Non-financial counterparties (NFCs), <<https://www.esma.europa.eu/regulation/post-trading/non-financial-counterparties-nfcs>> (Retrieved 08.02.2018).

<sup>156</sup> *European Securities and Markets Authority*, Non-financial counterparties (NFCs); Art 10 (1) (a) EMIR.

<sup>157</sup> *Barth in Tietje/Kraft* 1 (13, 14).

<sup>158</sup> Art 2 (8) EMIR.

<sup>159</sup> *Deutsche Bank*, Briefing Note on the EU Mandatory Clearing Obligation, <[https://www.db.com/company/en/media/EMIR\\_](https://www.db.com/company/en/media/EMIR_)

Clearing\_-\_Briefing\_Note\_on\_the\_EU\_Mandatory\_Clearing\_Obligation.pdf> (6), (Retrieved 09.02.2018).

<sup>160</sup> *Barth in Tietje/Kraft* 1 (13).

<sup>161</sup> *European Securities and Markets Authority*, Clearing Obligation and Risk Mitigation Techniques under EMIR, <<https://www.esma.europa.eu/regulation/post-trading/otc-derivatives-and-clearing-obligation>> (Retrieved 09.02.2018).

<sup>162</sup> *Barth in Tietje/Kraft* 1 (14); Art 5 EMIR; Art 7 RTS 149/2013.

<sup>163</sup> The public register can be accessed via <<https://www.esma.europa.eu/document/public-register-clearing-obligation-under-emir>>.

<sup>164</sup> Art 6 EMIR; Art 8 RTS 149/2013.

<sup>165</sup> Commission Delegated Regulation (EU) 2015/2205 of 6 August 2015 supplementing Regulation (EU) No 648/2012 of the Euro-

- ▷ Commission Delegated Regulation (EU) 2016/592 with regard to regulatory technical standards on the clearing obligation (thereafter RTS 2016/592)<sup>166</sup>
- ▷ Commission Delegated Regulation with regard to regulatory technical standards on the clearing obligation 2016/1178 (thereafter RTS 2016/1178)<sup>167</sup>

RTS 2015/2205 was published in the Official Journal on 1<sup>st</sup> of December 2015 establishing the clearing obligation for Interest Rates Swaps denominated in G4<sup>168</sup> currencies.

RTS 2016/592 was published in the Official Journal on 19<sup>th</sup> of April 2016 establishing the clearing obligation for Index Credit Default Swaps denominated in EUR.

RTS 2016/1178 was published in the Official Journal on 20<sup>th</sup> of July 2016 establishing the clearing obligation for Interest Rates Swaps denominated in Norwegian Krone (NOK), Polish Zloty (PLN) and Swedish Krona (SEK).

### Postponement of Central Clearing Obligation for Smaller Financial Counterparties

On 14<sup>th</sup> of November 2016, ESMA published a final report requesting the Commission to postpone the application of the mandatory clearing obligation stipulated under RTS 2015/2205, RTS 2016/592 and RTS 2016/1178 for category three counterparties<sup>169</sup>, which are smaller FCs.<sup>170</sup>

On 24<sup>th</sup> of April 2016, the Commission Delegated Regulation (EU) 2017/751 as regards the deadline for compliance with clearing obligations for certain counterparties dealing with OTC derivatives (RTS 2017/751),<sup>171</sup>

was published in the Official Journal postponing the effective application date of the clearing obligation for category 3<sup>172</sup> counterparties for all three product classes to the 21<sup>st</sup> of June 2019. Recital 5 and Recital 6 of RTS 2017/751 provide the underlying reasons for the postponement. According to Recital 5, clearing members have little or no inducement to provide a client clearing service for smaller financial counterparties. The reluctance to provide clearing services for smaller financial counterparties is largely attributable to cost issues.<sup>173</sup> Therefore, as stated in Recital 6, it is fairly challenging for smaller financial counterparties to obtain access to a CCP by way of an indirect clearing arrangement.<sup>174</sup>

Over the past few years, the application date of a number of Directives and Regulations had to be postponed, the latest being MiFID II, MiFIR and PRIIPs. Those postponements are largely attributable to the complexity and vast number of new requirements, and the corresponding challenges for market participants to effectively implement and comply with those provisions.<sup>175</sup> Furthermore, smaller financial counterparties also encountered massive challenges to implement and reach compliance by the application date for the requirement to exchange VM for non-centrally cleared OTC-derivative contracts. To account for those difficulties, the ESAs requested the competent authorities to apply a risk-based supervisory approach.<sup>176</sup>

The regulator needs to be urged to immediately account for those issues, which are mainly attributable to the massive amount of new regulations and the dynamic pace of publication. Specifically, smaller financial counterparties need to be provided with more time to interpret, comprehend and apply new regulatory requirements. Otherwise, they will be constantly exposed to undue operational, legal and compliance risk.

### C. Process of Central Clearing

The process of central clearing, in this case an indirect clearing arrangement, will be illustrated using two schematics, Figure 5.0 and Figure 6.0, accompanied by some explanatory notes. Although, as stated in the introduc-

pean Parliament and of the Council with regard to regulatory technical standards on the clearing obligation, OJ L 2015/314, 13.

166 Commission Delegated Regulation (EU) 2016/592 of 1 March 2016 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards on the clearing obligation, OJ L 2016/103, 5.

167 Commission Delegated Regulation (EU) 2016/1178 of 10 June 2016 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards on the clearing obligation, OJ L 2016/195, 3.

168 G4 currencies are: Euro (EUR), Japanese Yen (JPY), Great Britain Pound (GBP), United States Dollar (USD).

169 Category 3 counterparties are financial counterparties below the EUR 8 billion clearing threshold and alternative investment funds, which are classified as non-financial counterparties, whose aggregate month-end average outstanding notional of non-cleared derivatives is below EUR 8 billion.

170 *European Securities and Markets Authority*, Final Report On the clearing obligation for financial counterparties with a limited volume of activity, <[https://www.esma.europa.eu/sites/default/files/library/2016-1565\\_final\\_report\\_on\\_clearing\\_obligation.pdf](https://www.esma.europa.eu/sites/default/files/library/2016-1565_final_report_on_clearing_obligation.pdf)> (4), (Retrieved 06.03.2018).

171 Commission Delegated Regulation (EU) 2017/751 of 16 March 2017 amending Delegated Regulations (EU) 2015/2205, (EU) 2016/592 and (EU) 2016/1178 as regards the deadline for compliance with clearing obligations for certain counterparties dealing with OTC derivatives, OJ L 2017/113, 15.

172 *EMIR Reporting Ltd.*, Clearing obligation for category 3 with new date <<http://www.emirreporting.eu/clearing-obligation-for-category-3-with-new-date/>>(Retrieved 06.03.2018).

173 Rec 5 RTS 2017/751.

174 Rec 6 RTS 2017/751.

175 *Mouton*, MiFID II and MiFIR one-year delay published in EU Official Journal, <<https://news.pwc.be/mifid-ii-and-mifir-one-year-delay-published-in-eu-official-journal/>>(Retrieved 01.07.2016).

176 *Cuillerier/York/Heuer/Lösing/Bortignon/Crowley*, US and EU Regulators Provide Relief for Compliance with Variation Margin Requirements, <[www.whitecase.com/publications/alert/us-and-eu-regulators-provide-relief-compliance-variation-margin-requirements](http://www.whitecase.com/publications/alert/us-and-eu-regulators-provide-relief-compliance-variation-margin-requirements)> (Retrieved 03.03.2017).



tion, this thesis considers the applicable regulatory framework by the end of 2017, it is deemed necessary in this context to highlight the impact of MiFID II and MiFIR on the process of clearing.

### Process of Central Clearing

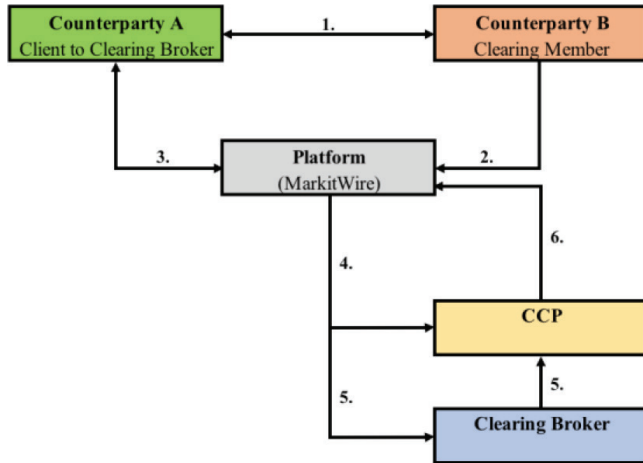


Figure 5.0

*Submitting Trade to Clearing:* Set-up illustrates an indirect clearing arrangement. Counterparty A has no direct access to the CCP and utilizes a clearing broker to serve as the access point to the CCP. Source: Ziltener<sup>177</sup> Figure has been adapted and supplemented with additional information by the author.

The process of central clearing encompasses the following stages (numbers refer to the numbering in Figure 5.0):

1. Execution of a OTC-derivative contract between counterparty and the clearing client.
2. Counterparty enters trade into electronic confirmation platform. One of the most common platform in praxis is MarkitWire.
3. Clearing client receives confirmation via the electronic confirmation platform, checks details and correctness of confirmation and selects his clearing broker.
4. The original trade is submitted for clearing. The CCP receives the trade via the electronic confirmation platform and starts the novation process. The novation process is explained in Section VI.A of this thesis.
5. Parallel to initiating the novation process the clearing broker receives a notification via the electronic confirmation platform. Upon receipt of the information the clearing broker performs his checks, including credit limit checks. If checks are successfully completed, the clearing broker accepts the trade for clearing.
6. After the checks have been successfully performed, the CCP accepts the trade and sends the clearing

confirmation to the electronic confirmation platform. The trade status is then changed from bilateral to cleared.<sup>178</sup>

In addition, the process of central clearing encompasses the management of margin calls and the management of cash flows from the product.<sup>179</sup>

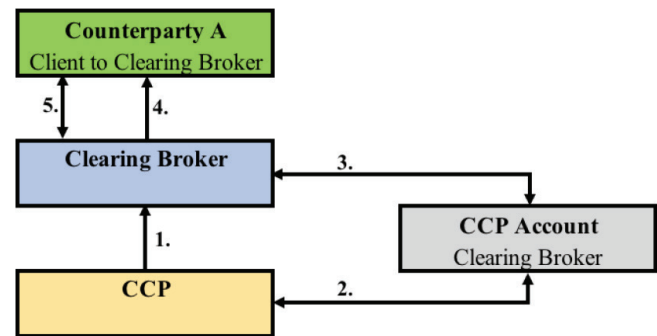


Figure 6.0

*Margining and Management of Cash Flows from Product:* Illustration depicts cash flows stemming from initial, variation margin and the financial products in an indirect clearing arrangement. Source: Ziltener<sup>180</sup> Figure has been adapted and supplemented with additional information by the author.

In an indirect clearing arrangement margin calls and cash flows affecting a client's contract or portfolio of contracts are always processed and handled through the respective clearing broker. This is illustrated in Figure 6.0 (numbers refer to the numbering in Figure 6.0).

1. CCP calculates margin requirements multiple times per day and sends reports and margin calls to the clearing broker.
2. The CCP account of the clearing broker is debited/credited according to the results of the margin call calculation.
3. The clearing broker is obliged to meet all the margin requirements in respect to its own portfolio and the positions of its clients.
4. In praxis, once a day, the clearing brokers sends margin calls to its clients.
5. Clients have the obligation to settle margin calls (IM, VM). Furthermore, cash flows from cleared products are also processed by the clearing broker.<sup>181</sup>

In an effort to mitigate counterparty credit risk, CCPs require clearing members to post initial margin (IM) and variation margin (VM).<sup>182</sup> The calculation and set-

<sup>177</sup> Ziltener, OTC Derivatives Clearing in Praxis (7).

<sup>178</sup> Ziltener, OTC Derivatives Clearing in Praxis (7); Gregory, Central Counterparties<sup>1</sup> 129–130.

<sup>179</sup> Gregory, Central Counterparties<sup>1</sup> 130.

<sup>180</sup> Ziltener, OTC Derivatives Clearing in Praxis (7).

<sup>181</sup> Ziltener, OTC Derivatives Clearing in Praxis (8).

<sup>182</sup> D. Murphy, OTC Derivatives<sup>1</sup> 147.



tlement of margin takes place at least on a daily basis. Whereas VM reflects the change in mark-to-market valuation of a member's portfolio of cleared contracts,<sup>183</sup> IM is the amount by which a member's portfolio is expected to move between default of the member and the ability to close out the respective trades. The time frame between a default and the ability to close out the trades is the margin period of risk (MPOR, which is explained in further detail in Section V.A of this thesis). Despite the fact that CCPs use various algorithms and models to calculate IM, the overall objective is to obtain, with a high degree of confidence, sufficient protection in the form of IM collateral in case a clearing member defaults.<sup>184</sup> Commission Delegated Regulation (EU) No 153/2013 with regard to regulatory technical standards on requirements for central counterparties (thereafter RTS 153/2016)<sup>185</sup> stipulates that CCPs have to calculate their IM for OTC-derivatives with a confidence level of 99,5 %<sup>186</sup> and a very short time horizon (MPOR) of 5 days<sup>187</sup>.

Although the requirements in respect to the clearing obligation of OTC-derivative contracts are generally stipulated under EMIR, the implementation of MiFID II and MiFIR imposes certain changes to the existing clearing process. The respective implications will be briefly set out below.

#### MiFID II and MiFIR

Art. 28 and Art. 32 MiFIR set out an obligation for certain derivative contracts to be traded on a trading venue.<sup>188</sup> A prerequisite for ESMA to declare a trading obligation is that the product is subject to the clearing obligation under EMIR.<sup>189</sup>

Art. 29 (1) MiFIR requires that all derivatives traded on EU regulated markets<sup>190</sup> have to be cleared by a CCP.

Furthermore Art. 29 (2) MiFIR requires that trading venues, clearing members and CCPs need to have in place automated systems to ensure that »cleared derivatives« are submitted and accepted for clearing as soon as technically possible. In this context »cleared derivatives« encompass all derivatives executed on a regulated market, derivatives that are subject to the clearing obligation under Art. (4) EMIR and derivatives bilaterally agreed to be cleared by the counterparties to the trade.<sup>191</sup>

Commission Delegated Regulation (EU) 2017/582 with regard to regulatory technical standards specifying the obligation to clear derivatives traded on regulated markets and timing of acceptance for clearing (thereafter RTS 2017/582)<sup>192</sup> specifies the clearing obligation for derivatives executed on regulated markets and applicable time frames for the transfer of information to CCPs. The most important reason for regulators in respect to the additional requirements for cleared derivatives is set out in Recital (1) of RTS 2017/582. Recital 1 states that before a trade, intended to be cleared, is executed on a trading venue, the counterparties to the transaction need to be provided with a clearing certainty check in an effort to manage and mitigate operational and other risks.<sup>193</sup> From a practical standpoint it can be constituted that the clearing certainty check is a supportive tool to manage and mitigate operational risk within the clearing process. Furthermore, RTS 2017/582 specifies new timeframes applicable to the transfer of information for cleared derivatives transaction concluded on a trading venue<sup>194</sup> and on a bilateral basis<sup>195</sup>. Those new timeframes probably constitute the greatest changes for the clearing process under EMIR. The new provisions require that if a trade is executed on a trading venue the required information needs to be transferred to the CCPs within 10 seconds.<sup>196</sup> As a result, trades conducted on a trading venue are processed fully automated, eliminating the need to enter, check and affirm the details

183 *Risk.net*, Variation margin definition, <<https://www.risk.net/node/2041779>> (Retrieved 05.02.2018).

184 *D. Murphy*, OTC Derivatives<sup>1</sup> 148.

185 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards on requirements for central counterparties, OJ L 2013/52, 41.

186 Art 24 RTS 153/2013.

187 Art 26 RTS 153/2013.

188 Trading venues are: Regulated Markets (RM), Multilateral Trading Facilities (MTF) and Organised Trading Facilities (OTF) as defined in MiFID II.

189 Art 28, 32 MiFIR.

190 According to Art 4 (1) (21) MiFID II: »regulated market« means a multilateral system operated and/or managed by a market operator, which brings together or facilitates the bringing together of multiple third-party buying and selling interests in financial instruments – in the system and in accordance with its non-discretionary rules – in a way that results in a contract, in respect of the financial instruments admitted to trading under its rules and/or systems, and which is authorised and functions regularly and in accordance with Title III of this Directive.

191 *Freshfields Bruckhaus Deringer LLP*, MiFID II & MiFIR: Impact on F&O and OTC clearing and F&O execution clients, <[http://www.jpmorganchina.com.cn/cm/BlobServer/MiFID\\_II\\_and\\_MiFIR:\\_A\\_regulatory\\_briefing.pdf?blobkey=id&blobwhere=1320743850478&blobheader=application/pdf&blobheadername1=Cache-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs](http://www.jpmorganchina.com.cn/cm/BlobServer/MiFID_II_and_MiFIR:_A_regulatory_briefing.pdf?blobkey=id&blobwhere=1320743850478&blobheader=application/pdf&blobheadername1=Cache-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs)> (2), (Retrieved 04.02.2018).

192 Commission Delegated Regulation (EU) 2017/582 of 29 June 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards specifying the obligation to clear derivatives traded on regulated markets and timing of acceptance for clearing OJ L 2017/87, 224.

193 *Futures Industry Association*, Special Report Series – Part Three: Derivatives under MiFID II, <<https://fia.org/articles/special-report-series-part-three-derivatives-under-mifid>> (Retrieved 28.03.2018); Art 2 RTS 2017/582, Rec 1 RTS 2017/582.

194 Art 3 RTS 2017/582.

195 Art 4 RTS 2017/582.

196 Art 3 (2) RTS 2017/582.

of the trade on an electronic confirmation platform (for instance MarkitWire). On the other hand, for trades concluded on bilateral basis the information needs to be transferred to the CCPs within 30 minutes.<sup>197</sup> From a practical perspective bilateral trades still need to be entered, checked and affirmed on an electronic confirmation platform.

As stated previously, OTC-derivative contracts not subject to the clearing obligation can still be cleared on a bilateral basis. However, Art. 11 of EMIR defines and requires that certain risk-mitigation techniques have to be applied to non-centrally cleared OTC-derivative contracts. One of those techniques, the requirement to exchange margin will be elaborated in further detail in the next chapter.

## V. Bilateral Margin Requirements

The purpose of this section is to provide an overview of the concept of bilateral margin requirements for non-centrally cleared OTC-derivatives. The section contains information on how bilateral margining works and the scope of the obligation to exchange margins for non-centrally cleared OTC-derivative contracts. Furthermore, at the discretion of the author, the section elaborates on certain provisions, which are considered to be of specific importance for the purpose of this thesis. It needs to be noted that due to the vast amount of applicable regulatory provisions, it is not possible to elaborate on all those requirements within the scope of this thesis.

### A. Concept of Bilateral Margin Requirements

On 4<sup>th</sup> of November, 2011 the G20 agreed in the Cannes Summit to further develop the OTC-derivatives reform program by adding margin requirements for non-centrally cleared OTC-derivative contracts. Those obligations are part of the proposed risk-mitigation techniques for non-centrally cleared OTC-derivative contracts.<sup>198</sup> In order to establish consistent and identical global standards, the G20 commissioned the Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) to draft the respective standards.<sup>199</sup> The drafting process, including various rounds of consultation, was conducted by

the Working Group on Margin Requirements (WGMR) in joint association with the Committee on Payment & Settlement Systems (CPSS) and the Committee on Global Financial Systems (CGFS). The final minimum standards for the exchange of IM and VM for non-centrally cleared OTC-derivative contracts were published in September 2013.<sup>200</sup>

However, the implementation process stipulating the requirement to exchange IM and VM for non-centrally cleared OTC-derivative contracts was delayed several times due to operational and legal complexity issues.<sup>201</sup>

### Initial Margin and Variation Margin

Commission Delegated Regulation (EU) 2016/2251 on OTC derivatives, central counterparties and trade repositories with regard to regulatory technical standards for risk-mitigation techniques for OTC derivative contracts not cleared by a central counterparty (thereafter RTS 2016/2251)<sup>202</sup> provides the legal definition of IM and VM. IM means »the collateral collected by a counterparty to cover its current and potential future exposure in the interval between the last collection of margin and the liquidation of positions or hedging of market risk following a default of the other counterparty.« VM is defined as »the collateral collected by a counterparty to reflect the results of the daily marking-to-market or marking-to-model of outstanding contracts [...].«<sup>203</sup>

In bilateral trades, the instrument of margining is utilized to reduce credit exposure and counterparty risk. Margin, either in the form of cash or securities, is transferred from one counterparty to the other as a security for a credit exposure with the purpose that in an event of default the surviving party is able to offset potential losses with the margin received. VM represents the mark-to-market of the underlying trades. VM is generally calculated on a daily basis and can result in a positive or negative market value. Calculating VM is the easiest way to determine a benchmark of the actual loss if one of the counterparties defaults. Nevertheless, in case of a counterparty default, VM can be insufficient to cover the losses incurred due to market movements,

197 *Futures Industry Association*, Special Report Series – Part Three: Derivatives under MiFID II; Art 4 RTS 2017/582.

198 *University of Toronto*, Cannes Summit Final Declaration – Building our Common Future: Renewed Collective Action for the Benefit of All, <<http://www.g20.utoronto.ca/2011/2011-cannes-declaration-111104-en.html>> (Sn 24), (Retrieved 20.01.2018).

199 *Bank for International Settlements*, Margin requirements for non-centrally cleared derivatives, <<https://www.bis.org/bcbs/publ/d317.pdf>> (2), (Retrieved 10.02.2018).

200 *Bosch*, Margin Requirements für bilateral Derivatkontrakte, <[https://www.bearingpoint.com/files/BEDE14\\_0908\\_FC\\_DE\\_MarginRequirement\\_final\\_web.pdf&download=o&itemId=132062](https://www.bearingpoint.com/files/BEDE14_0908_FC_DE_MarginRequirement_final_web.pdf&download=o&itemId=132062)> (1), (Retrieved 10.02.2018).

201 *Bank for International Settlements*, Margin requirements for non-centrally cleared derivatives (3).

202 Commission Delegated Regulation (EU) 2016/2251 of 4 October 2016 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories with regard to regulatory technical standards for risk-mitigation techniques for OTC derivative contracts not cleared by a central counterparty, OJ L 2016/340, 9.

203 Art 1 (1) and (2) RTS 2016/2251.

suspension and delays of margin calls. Therefore, the bilateral margin requirement under EMIR also requires the exchange of IM to absorb potential losses not covered by VM.<sup>204</sup> According to Art. 11 of RTS 2016/2251, IM can either be calculated utilizing the standardised approach or internal margin models. In the case where internal margin models are used to calculate IM, Art. 15 of RTS 2016/2251 stipulates the requirement to utilize a 99% confidence interval and a margin period of risk (MPOR) of at least 10 days. The MPOR should encompass the time frame between the last successful exchange of VM and the close-out and replacement of the OTC-derivative portfolio in case of a counterparty default.<sup>205</sup> It is important to note that, in comparison to the IM requirements for centrally cleared OTC-derivatives, both methods stipulated under RTS 2016/2251 result in higher IM requirements for non-centrally cleared OTC-derivative contracts.<sup>206</sup> This effect is attributable to the stipulated confidence interval and the longer MPOR required to be applied for the calculation of IM for non-centrally cleared OTC-derivative contracts.

In order to be liquidated immediately and at a predictable price, even in times of financial turmoil,<sup>207</sup> collateral utilized for IM needs to be of sufficient high liquidity and credit quality.<sup>208</sup> The range of assets that constitute eligible collateral are set forth in Art. 4 of RTS 2016/2251. The list encompasses a fairly broad range of different assets to be utilized, notwithstanding being subject to the haircut provisions listed in Table 1 and Table 2 of RTS 2016/2251. In order to support the underlying objective of providing protection against losses in the case of a counterparty default, it is immanent that the value of the posted collateral remains fairly stable, even in times of financial turbulences. Therefore, the regulator imposed the aforementioned haircuts to adjust for the riskiness of the different asset classes and the requirements stated in Art. 4 (2) RTS 2016/2251 in order to prevent that the collateral value is correlated to the event of a counterparty default. This form of correlation is also referred to as »wrong-way risk«. <sup>209</sup> In order to avoid detrimental effects on financial stability due to the liquidation of collateral, the regulator also imposed certain concentration limits for initial margin. Those limits are applicable to

systemically relevant counterparties and market participants with large OTC-derivative portfolios.<sup>210</sup> The respective limits are laid down in Art. 8 of RTS 2016/2251.

Despite the fact, that the new regulatory regime now imposes the requirement to exchange IM for non-centrally cleared OTC-derivative contracts, the concept itself is not new at all. Previously, the concept was referred to as »independent amount« but its usage among market participants was basically non-existent. Even counterparties exchanging VM on a regular basis were reluctant to exchange IM. As evidenced by the default of Lehman Brothers, the underlying problem of the independent amount was that IM collateral was not required to be segregated from other assets. The lack of segregation caused parties with overcollateralization in the form of IM to be unable to fully recover their assets, leaving them behind as general unsecured creditors. To cater to this fact, the new regulatory regime imposes the requirement that IM collateral needs to be made available immediately to the non-defaulting counterparty. Therefore, collateral provided for IM cannot be used, pledged or hypothecated by the receiving party and needs to be kept in a completely segregated and remote account.<sup>211</sup>

Historically, the necessity and importance to exchange margin was viewed differently among various market participants. Whereas risk management in certain institutions were required to calculate mark-to-market and the exchange of VM on a daily basis, other institutions performed the tasks on a less frequent basis, and still others completely omitted to perform those tasks. The main reasons for counterparties to post margin on a less frequent basis are difficulties in obtaining the required quality of securities and the operational workload associated with the collateral management process.<sup>212</sup>

However, critics of the newly imposed requirement to exchange margin argue that IM was only implemented with the objective to promote central clearing and to minimize the gap between centrally cleared and non-centrally cleared OTC-derivative contracts.<sup>213</sup> Section VII further elaborates on this issue by analysing the underlying conceptual considerations of the requirement to exchange IM and the corresponding practical implications.

On 4<sup>th</sup> of October, 2016 the European Commission adopted the RTS 2016/2251 pursuant to Art. 11 (15) (a) EMIR, setting out the detailed rules for bilateral margin requirements including the applicable phase-in timetable,<sup>214</sup> which is provided in Table 1.0.

204 Gregory, Central Counterparties' 75–76.

205 Art 11, 15 RTS 2016/2251.

206 O'Kane, Initial Margin for Non-Centrally Cleared OTC Derivatives, <[http://www.edhec-risk.com/edhec\\_publications/all\\_publications/RISKReview.2016-06-27.4033/attachments/EDHEC\\_Position\\_Paper\\_Initial\\_Margin\\_for\\_Non-Centrally\\_Cleared\\_OTC\\_Derivatives\\_E.pdf](http://www.edhec-risk.com/edhec_publications/all_publications/RISKReview.2016-06-27.4033/attachments/EDHEC_Position_Paper_Initial_Margin_for_Non-Centrally_Cleared_OTC_Derivatives_E.pdf)> (6–8), (Retrieved 18.02.2018).

207 O'Kane, Initial Margin for Non-Centrally Cleared OTC Derivatives (27).

208 Rec 25 RTS 2016/2251.

209 O'Kane, Initial Margin for Non-Centrally Cleared OTC Derivatives (27); Art 4 RTS 2016/2251.

210 Rec 27 RTS 2016/2251.

211 O'Kane, Initial Margin for Non-Centrally Cleared OTC Derivatives (9, 26).

212 Gregory, Central Counterparties' 89.

213 Gregory, Central Counterparties' 51.

214 Pham, EMIR Rules for Margining Non-Cleared OTC Derivatives: What You Need to Know, <<https://www.bakermckenzie>.

Variation Margin (VM)	
Date of Phase-In	Category
4 February 2017	Entities with group notional amount above EUR 3 trillion (entities with the largest portfolios on a group basis)
1 March 2017	All other entities in scope
Initial Margin (IM)	
Date of Phase-In	Category
4 February 2017	Entities with group notional amount above EUR 3 trillion (entities with the largest portfolios on a group basis)
September 2017	Entities with group notional amount above EUR 2.25 trillion
September 2018	Entities with group notional amount above EUR 1.5 trillion
September 2019	Entities with group notional amount above EUR 0.75 trillion
September 2020	Entities with group notional amount above EUR 8 billion Entities with a group notional below EUR 8 billion are not required to exchange IM.

Table 1.0

*Phase-In Periods IM and VM: Phase-in periods for entities in-scope in respect to the exchange of VM and IM. In regards to non-financial counterparties they need to be above the clearing-threshold to be categorized as in-scope entities for the purpose of VM and IM. Once they are in-scope the phase-in is determined according to Table 1.0. Source: Ernst & Young Global Limited<sup>215</sup>*

## B. Scope of Bilateral Margin Requirements

### Personal Scope

The personal scope of bilateral margin requirements is provided by Art. 11 (3) EMIR and encompasses financial counterparties (FC) and non-financial counterparties above the clearing threshold (NFC<sup>+</sup>). Non-financial counterparties below the clearing threshold (NFC<sup>-</sup>) can be excluded from the scope, due to the fact that they are not considered to be of systemic relevance.<sup>216</sup> Pursuant to Art. 11 (3) EMIR in combination with Art. 24 RTS 2016/2251, third-country counterparties, equivalent to NFC<sup>-</sup>, can also be exempted from bilateral margin requirements. Therefore, FC and NFC<sup>+</sup> are obliged to exchange margin with other FC and NFC<sup>+</sup> including equivalent third-country counterparties.<sup>217</sup>

However, in respect to the personal scope, EMIR stipulates a general exemption for specific entities and explicitly excludes those from its scope and the respective delegated acts. Those entities are listed in Art. 1 (4) and (5) EMIR including inter alia sovereigns, members

of the European System of Central Banks (ESCB), multilateral development banks and the Bank for International Settlements.<sup>218</sup>

### Material Scope

In general, the material scope of bilateral margin requirements covers all OTC-derivative contracts, as defined under EMIR and which are not cleared through a CCP.<sup>219</sup> In case of an indirect clearing arrangement (see Section Concept of Clearing for indirect clearing arrangements) not only the transaction between the direct clearing member and the CCP, but also the corresponding transaction between the direct and indirect clearing member is considered and treated as a transaction cleared by a CCP.<sup>220</sup>

The material scope of bilateral margin requirements is restricted by certain exclusions stipulated under EMIR and RTS 2016/2251.<sup>221</sup>

Some of those exemptions are going to be briefly outlined below. In addition, further exemptions include inter alia derivatives for hedging purposes associated to covered bond transactions<sup>222</sup> or derivatives entered into with counterparties in third countries, where legal enforceability of netting agreements and collateral protections cannot be guaranteed<sup>223</sup>.

### Exemptions for Intragroup Transactions

In general terms, an intragroup transaction can simply be described as an OTC-derivative contract concluded between members of the same group.<sup>224</sup> The detailed definition of what constitutes an intragroup transaction is stipulated in Art. 3 (1) EMIR for NFCs and Art. 3 (2) EMIR for FCs.

Pursuant to Art. 11 (5) – (10) EMIR and subject to certain preconditions, intragroup transactions can be exempted from the bilateral margin requirement. The applicable preconditions are similar but not identical in respect to intragroup transactions between group members established in the same member state (Art. 11 (5) EMIR), between members of the same group established in different member states (Art. 11 (6), (7), (10)

<sup>218</sup> Gregory, Central Counterparties' 95; Art 1 (4) and (5) EMIR.

<sup>219</sup> Art 11 EMIR.

<sup>220</sup> European Securities and Markets Authority, Questions and Answers Implementation of the Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (EMIR), <[https://www.esma.europa.eu/sites/default/files/library/esma70-1861941480-52\\_qa\\_on\\_emir\\_implementation.pdf](https://www.esma.europa.eu/sites/default/files/library/esma70-1861941480-52_qa_on_emir_implementation.pdf)> (12), (Retrieved 02.03.2018).

<sup>221</sup> Bundesverband deutscher Banken, Die neue EMIR-Besicherungsdokumentation zum deutschen Rahmenvertrag für Finanztermingeschäfte – Hintergründe und Erläuterungen (4–6).

<sup>222</sup> Art 30 RTS 2016/2251.

<sup>223</sup> Art 31 RTS 2016/2251.

<sup>224</sup> Bundesverband deutscher Banken, Die neue EMIR-Besicherungsdokumentation zum deutschen Rahmenvertrag für Finanztermingeschäfte – Hintergründe und Erläuterungen (4).

<sup>215</sup> [com/en/insight/publications/2017/01/emir-margin-rules-for-noncleared-otc](https://www.ey.com/en/industries/financial-services/asset-management/fso-alert_20150327_emir) (Retrieved 10.02.2018).

<sup>216</sup> Ernst & Young, EMIR – Implementation schedule of margin requirements for non-centrally cleared derivatives postponed to 1 September 2016, <[http://www.ey.com/lu/en/industries/financial-services/asset-management/fso-alert\\_20150327\\_emir](http://www.ey.com/lu/en/industries/financial-services/asset-management/fso-alert_20150327_emir)> (Retrieved 10.02.2018).

<sup>217</sup> Gregory, Central Counterparties' 95; Art 11 EMIR.

<sup>218</sup> Bundesverband deutscher Banken, Die neue EMIR-Besicherungsdokumentation zum deutschen Rahmenvertrag für Finanztermingeschäfte – Hintergründe und Erläuterungen, <<https://bankverband.de/media/uploads/2017/09/13/emir-besicherungsdokumentation-hintergrund-stand-19-04-2017.pdf>> (3), (Retrieved 01.03.2018).



EMIR) and between members with one counterparty established in a third-country (Art. 11 (8), (9) EMIR).<sup>225</sup>

**Exemptions for Certain FX-Transactions**

RTS 2016/2251 stipulates exemptions for certain classes of OTC-derivative contracts. These exemptions are either of partial or temporal nature. After extensive lobbying by the financial industry, certain OTC-derivative contracts were excluded from the requirement to post IM. Those OTC-derivative contracts include physically settled FX-Forwards, physically settled FX-Swaps and Cross-Currency Swaps.<sup>226</sup> Those exemptions are listed in Art. 27 of the RTS 2016/2251.

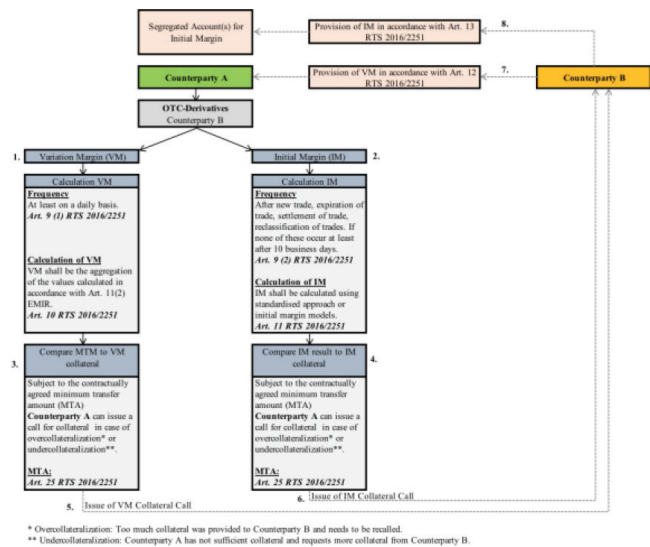
A temporal exemption from the requirement to exchange IM was granted for physically settled FX-Forwards until the implementation of MiFID II.<sup>227</sup> This exemption was necessary due to differences in transposing MiFID I into national law and the subsequent differences in determining what needs to be considered as a FX-Forward contract. This issue and the corresponding effects are addressed in Section III.A.

In November 2017, the Joint Committee of the European Supervisory Authorities issued a statement that they have been made aware that certain counterparties, which would be obliged to exchange variation margin for physically settled FX-Forwards by 3<sup>rd</sup> of January, 2018<sup>228</sup> face challenges in implementing those regulatory standards. Nevertheless, from a legal perspective, the European Supervisory Authorities (ESAs) are required to apply directly applicable EU-legal text. The ESAs recognized the respective challenges and proposed an amendment to the Commission Delegated Regulation (EU) 2016/2251.<sup>229</sup> To account for those problems, the ESAs proposed to restrict the requirement to exchange VM for physically settled FX-Forwards only for transactions concluded between institutions. In this context the term institutions refers to the respective definition in the CRR.<sup>230</sup> The draft has been submitted to the Euro-

pean Commission to approve the proposed amendment. In the meantime, the ESAs expect the national competent authorities to apply a risk based and proportionate approach in their day-to-day supervisory tasks.<sup>231</sup>

**C. Process of Bilateral Margining**

Figure 7.0 illustrates the process of bilateral margining (IM & VM) for non-centrally cleared OTC-derivative contracts. The illustration is based on the authors own practical experience and is supplemented with additional information.



\* Overcollateralization: Too much collateral was provided to Counterparty B and needs to be recalled.  
 \*\* Undercollateralization: Counterparty A has not sufficient collateral and requests more collateral from Counterparty B.

Figure 7.0

Process of Bilateral Margining: Source: This figure has been drawn up by the author from practical experience, supplemented by additional information from RTS 2016/2251.

The process of bilateral margining generally encompasses the following steps (numbers refer to the numbering in Figure 7.0). The figure is from the perspective of Counterparty A. The same process takes place on the side of Counterparty B.<sup>232</sup>

1. VM requirements are calculated at least on a daily basis.<sup>233</sup> Determining the mark-to-market value of the underlying non-centrally cleared OTC-derivatives portfolio of Counterparty B.
2. IM requirements are only calculated in case certain changes occur within the underlying OTC-derivatives portfolio. Those changes include the addition of a new trade to the portfolio, the expiration of a

225 Bundesverband deutscher Banken, Die neue EMIR-Besicherungsdokumentation zum deutschen Rahmenvertrag für Finanztermingeschäfte – Hintergründe und Erläuterungen (4); Art 11 (5)-(10) EMIR.

226 Gregory, Central Counterparties' 97.

227 Art 37 (2) RTS 2016/2251.

228 As stated in Section III.A Definition of Derivatives: MiFID I resulted in different interpretations among member states on what constitutes an FX-Forward. Due to this unclear definition margin requirements for physically settled FX-Forwards had to be delayed until the implementation of MiFID II. MiFID II entered into force on 3<sup>rd</sup> of January 2018.

229 European Supervisory Authorities, Variation margin exchange for physically-settled FX forwards under EMIR, <https://esas-joint-committee.europa.eu/Pages/News/Variation-margin-exchange-for-physically-settled-FX-forwards-under-EMIR.aspx> (Retrieved 12. 02. 2018).

230 Joint Committee ESAs, Draft technical standards amending margin requirements for non-centrally cleared OTC derivatives,

<https://esas-joint-committee.europa.eu/Publications/Technical%20Standards/Joint%20Draft%20RTS%20on%20margin%20requirements%20for%20non-centrally%20cleared%20OTC%20derivatives%20(JC-2017-79).pdf> (6), (Retrieved 12. 02. 2018).

231 European Supervisory Authorities, Variation margin exchange for physically-settled FX forwards under EMIR.

232 Process description provided by author's practical experience.

233 Art 9 (1) RTS 2016/2251.



trade within the portfolio, the settlement of a trade or the reclassification of a trade. In case no such event occurs within 10 business days IM needs to be calculated after the expiration of this time span.<sup>234</sup>

3. Counterparty A compares the result of the mark-to-market valuation with the respective value of VM collateral in respect to Counterparty B. In case of over-/under-collateralisation and subject to the contractually agreed minimum transfer amount (MTA), a collateral call can be issued.
4. The determination of a IM call is basically the same. The result of the IM calculation is compared with the posted value of IM collateral. In case of over-/under-collateralisation and subject to the contractually agreed minimum transfer amount (MTA), a collateral call can be issued.
5. Counterparty A issues a VM collateral call to Counterparty B and requests additional collateral (under-collateralisation) or demands the re-transfer of provided collateral (over-collateralisation).
6. Issuance of IM collateral call to Counterparty B to either post additional collateral (under-collateralisation) or transfer back posted collateral (over-collateralisation).
7. In case no dispute arises in respect to the issued VM collateral call, Counterparty B transfers the requested amount of collateral to Counterparty A.
8. If the issued IM collateral call is not subject to a dispute, Counterparty B transfers the requested amount of collateral into segregated accounts. Segregated accounts have to be held with a third-party entity.
9. It needs to be noted, that the calculation of IM and VM requirements by Counterparty A and Counterparty B can provide different results due to various reasons giving rise to disputes. The illustrated process does not provide any information in respect to those disputes and the respective dispute resolution mechanism.

## VI. Central Clearing Obligation – Transparency and Risks to CCPs

During a 2011 speech at the Financial Markets Conference, Ben S. Bernanke said:

*»Increased reliance on clearinghouses to address the problems in other parts of the system increases further the need to ensure the safety of clearinghouses themselves. [...] if you put all your eggs in one basket, you better watch that basket.«<sup>235</sup>*

<sup>234</sup> Art 9 (2) RTS 2016/2251.

<sup>235</sup> Bernanke, Clearinghouses, Financial Stability, and Financial Reform, <<https://www.federalreserve.gov/newsevents/speech/files/bernanke20110404a.pdf>> (9), (Retrieved 02.03.2018).

The underlying objective of imposing mandatory central clearing for OTC-derivate contracts was to increase transparency and mitigate systemic risk.<sup>236</sup> Furthermore, it was constituted that the incentives provided for voluntary central clearing of standardized OTC-derivatives were not sufficient to ensure applicability on a large scale triggering the need to impose mandatory clearing.<sup>237</sup> However, in the context of other measures being imposed on non-centrally cleared OTC-derivatives it needs to be questioned: Is the process of central clearing needed to increase transparency? In addition, it needs to be analysed if the regulatory required minimum standards in regards to financial resources are sufficient to adequately protect CCPs in case of an extreme but plausible scenario, such as the default of a larger number of clearing members.

### A. Transparency

It is postulated that central clearing supports the intention of the regulator to enhance transparency of OTC-derivative markets.<sup>238</sup> From an isolated perspective this might be true. However, there are certain effects and dependencies that might be detrimental to other objectives.

The process of novation is one of the concepts of central clearing supporting the increase in market transparency.<sup>239</sup> As stated earlier, novation is the legal process where the CCP puts itself between the buyer and the seller of the original OTC-derivative contract. In due course of this process, the CCP replaces the original counterparty for each side of the transaction.<sup>240</sup> At the level of the CCP a vast amount of information is aggregated. In addition, CCPs create transaction reports including data on pricing, notional amounts outstanding and the respective trade volumes.<sup>241</sup> Those reports supplemented by additional more precise information are made available to regulators in order to monitor and assess potential individual risks and systemic risks arising within the financial system.<sup>242</sup> However, it needs to be pointed out by virtue of the regulatory framework CCP reports can only contain information on entities subject to the clearing obligation<sup>243</sup> and OTC-derivative contracts that are either mandated to be cleared or cleared on a voluntary basis. This basically restricts the content

<sup>236</sup> University of Toronto, G20 Leaders Statement: The Pittsburgh Summit (Sn 10).

<sup>237</sup> Rec 13 EMIR.

<sup>238</sup> Balmer, Clearing<sup>1</sup> 162.

<sup>239</sup> Balmer, Clearing<sup>1</sup> 162.

<sup>240</sup> Balmer, Clearing<sup>1</sup> 162; Gregory, Central Counterparties<sup>1</sup> 28.

<sup>241</sup> Balmer, Clearing<sup>1</sup> 162–163.

<sup>242</sup> International Monetary Fund, Making Over-The-Counter Derivatives Safer: The Role of Central Counterparties (8).

<sup>243</sup> Art 4 (1) EMIR.

of information available and makes a comprehensive reporting with a holistic view impossible.

Secondly, to be accepted by a CCP as a direct clearing member, the respective applicants for direct clearing membership have to fulfil certain requirements.<sup>244</sup> The objective of those requirements is to mitigate the risk of a direct clearing member default by setting certain standards. Those standards revolve around the creditworthiness of the applicant, the available financial resources to meet liquidity requirements and the operational infrastructure in place in order to effectively and continuously participate in the clearing process. To achieve a low probability of direct clearing member defaults, the applicable membership requirements are set at a very high level. Financial institutions not meeting the prerequisite to qualify as direct clearing member have to clear their trades utilizing the service of a direct clearing member.<sup>245</sup> The membership requirements support and create a clearing structure that increases transparency. This is attributable to the creation of an environment where information is readily available on qualified direct clearing members and other counterparties trading derivatives. However, it needs to be noted that a number of entities are excluded from the clearing obligation, meaning that their information is not available in this structure. The exclusion of a number of entities creates potential for residual and unidentified risks.<sup>246</sup> Furthermore, the information required to be disclosed by CCPs is not sufficient to make a sound assessment of the CCPs safety.<sup>247</sup>

In respect to increasing transparency, Art. 9 EMIR stipulates a general requirement for all counterparties including non-financial counterparties irrespective of the clearing threshold and financial counterparties and CCPs to report the details of any derivative contract entered into, modified or terminated to a registered TR.<sup>248</sup> In order to ensure data quality, the European regulatory regime requires that both sides report their transaction. This is also referred to as a »double-sided« reporting regime. This is different from the USA where the Dodd-Frank Act stipulates a »single-sided« reporting. Subsequently, only the largest counterparty to the trade needs to report to the trade repository.<sup>249</sup>

It can be summarized that certain aspects of the central clearing process potentially enhance transparency. Nevertheless, the effects are not substantial enough to

provide a valid argument to promote central clearing. Furthermore, there are other EMIR provisions that increase the transparency of the derivatives market on a large scale and provide the competent authorities with the information needed to conduct their assessments.

## B. CCPs – General Risks, Financial Resources and Clearing Member Default

According to ISDA the requirement to centrally clear standardized OTC-derivative contracts will result in CCPs developing into the most systemically important market participants.<sup>250</sup> This is attributable to the initiatives launched to reform the OTC-derivative market and the respective concentration of risk at the level of the CCPs.<sup>251</sup> Therefore, a CCP's default or even situations imposing financial distress could have a catastrophic impact on financial stability.<sup>252</sup>

To account for the new role of CCPs it is essential that they have an effective and sound risk management in place to mitigate and prevent the risks they are exposed to. Nevertheless, in case of risk management failure, it is vital that CCPs have the capability to cope with the accompanying effects without endangering their stability and imposing systemic risk.

The following section is going to provide an overview of the general risks faced by CCPs. The section will then focus on CCPs primary risk, the default of a clearing member. Financial resources and the corresponding default mechanism play a specific role in dampening the effects of a clearing member default. Therefore, this section is going to elaborate on the regulatory framework stipulated under EMIR in regards to those financial resources, especially capital requirements, default fund contributions and margin requirements. The objective of this section is to find out if the required financial resources are sufficient to protect CCPs in case clearing members default on a larger scale or if there is a need for more stringent regulatory provisions.

### 1. Risks Faced by CCPs

#### General Risks

There are various risks a CCP is exposed too. Those risks could potentially cause a CCP to incur losses, experience financial distress or default. A non-compulsory list of those risks will be briefly outlined below:

<sup>244</sup> Balmer, Clearing<sup>1</sup> 162.

<sup>245</sup> Gregory, Central Counterparties<sup>1</sup> 134–136.

<sup>246</sup> Balmer, Clearing<sup>1</sup> 162.

<sup>247</sup> D. Murphy, OTC Derivatives<sup>1</sup> 218–219.

<sup>248</sup> Art 9 EMIR.

<sup>249</sup> Finberg, Breaking EMIR Reporting news: European Commission proposes changes to reduce obligations, <<https://financefeeds.com/breaking-emir-reporting-news-european-commission-proposes-changes-reduce-obligations/>> (Retrieved 03.03.2018).

<sup>250</sup> International Swaps and Derivatives Association, CCP Loss Allocation at the End of the Waterfall (4).

<sup>251</sup> Balmer, Clearing<sup>1</sup> 175.

<sup>252</sup> Gregory, Central Counterparties<sup>1</sup> 265.

- ▷ *Liquidity risk:* For instance, CCPs can be exposed to substantial liquidity risk in case clearing members are unable to meet their liquidity requirements especially problems to provide required margin calls on a short notice.<sup>253</sup> Furthermore, CCPs have to efficiently manage a substantial amount of cash stemming from variation margin payments and other cash-flows. Management of those financial resources also encompass the necessity to invest a certain portion of those assets. Those investments should avoid excessive credit and liquidity risk. Furthermore, in the event of a clearing member default, CCPs need to continue to fulfil their obligations to the other clearing members in a timely manner. In order to do so it might be necessary to convert some of those assets into cash. Therefore, it is vital that CCPs also ensure that those investments are readily available and convertible to cash.<sup>254</sup>
- ▷ *Operational risk:* Operational risk can result from business disruptions, system failures and fraud. The collapse of the CCPs infrastructure would constitute a catastrophic event due to the interconnectedness and the large number of affected parties.<sup>255</sup>
- ▷ *Legal risk:* Clearing members of CCPs are incorporated in different countries. Therefore, CCPs are exposed to various jurisdictions and are endangered that certain terms and conditions of their contractual framework are not protected or supported by regional law. The resulting legal risk could encompass aspects such as netting, margin terms and segregation of collateral.<sup>256</sup>
- ▷ *Model risk:* The calculation of VM and IM requirements are based on certain underlying models. There is an inherent risk that especially IM models are not accurately specified in respect to volatility, tail risk, complex dependencies and wrong-way-risk. Deficiencies in those underlying models could result in an inadequate calculation of IM requirements, delays in issuing margin calls or the unnecessary liquidation of positions in due course of large market movements. For VM valuation models, it is essential that they are highly standardized and provide robust results across all predictable market scenarios. In order to mitigate model risk, it is necessary to regularly review and update the respective methodologies.<sup>257</sup>

<sup>253</sup> D. Murphy, OTC Derivatives<sup>1</sup> 220.

<sup>254</sup> Gregory, Central Counterparties<sup>1</sup> 278.

<sup>255</sup> Gregory, Central Counterparties<sup>1</sup> 279.

<sup>256</sup> Gregory, Central Counterparties<sup>1</sup> 277–279.

<sup>257</sup> Gregory, Central Counterparties<sup>1</sup> 278.

## Default Risk – Major Risk for CCPs

The primary role of a CCP is to take counterparty credit risk, which is transposed from the bilateral market to the CCP.<sup>258</sup> The default of a clearing member and the subsequent potential domino-effects impose the most significant risk for a CCP. The effects triggered by the event of a clearing member default could encompass contagion of other clearing members due to financial distress, a clearing members decision to leave the CCP and potential negative reputational effects due to severe loss allocation methods, which could be recognized as being unfair and unjustified by affected clearing members and their clients.<sup>259</sup> The associated losses of a clearing member default should normally be covered by the financial resources of the CCP. Financial resources consist of total margin received (IM and VM), the default fund contributions, other financial resources and equity of the CCP. The latter being specifically important to cover losses not stemming from the default of a clearing member.<sup>260</sup> In the case of a clearing member default, the financial resources to cover the resulting losses are accessed in a specific order. This default mechanism, depicted in Figure 8.0, is also referred to as the »default waterfall.«<sup>261</sup>

Default Waterfall	
Level	Form of Protection
1	Defaulter's Variation Margin
2	Defaulter's Initial Margin
3	Defaulter's default fund contribution
4	Fixed amount of CCP equity
5	Non-defaulting clearing member default fund contribution
6	Capital calls on non-defaulting clearing members
7	The rest of the CCP equity

Figure 8.0

*Default Waterfall:* The »default waterfall« cascade has the objective to efficiently resolve a clearing member default. This process should ensure that contagion across the market is prevented.<sup>262</sup> Source: David Murphy – OTC Derivatives<sup>263</sup>

## 2. Financial Resources

### Capital Requirements

The provisions in regards to capital requirements are laid down in Art. 16 EMIR and are further specified in RTS 152/2013.

According to Art. 16 (1) EMIR a CCP needs to constantly maintain initial capital of at least EUR 7.5 million,<sup>264</sup> which constitutes a very low barrier for market entry for

<sup>258</sup> D. Murphy, OTC Derivatives<sup>1</sup> 210.

<sup>259</sup> Gregory, Central Counterparties<sup>1</sup> 277.

<sup>260</sup> D. Murphy, OTC Derivatives<sup>1</sup> 148.

<sup>261</sup> D. Murphy, OTC Derivatives<sup>1</sup> 149.

<sup>262</sup> Balmer, Clearing<sup>1</sup> 76.

<sup>263</sup> D. Murphy, OTC Derivatives<sup>1</sup> 149.

<sup>264</sup> Art 16 (1) EMIR.

new CCPs.<sup>265</sup> Art. 16 (2) EMIR states that the capital of CCPs, which includes retained earnings and reserves, needs to be sufficient and proportionate to protect CCPs from risks arising out of its general business. Art. 16 (3) EMIR requests the European Banking Authority (EBA), European System of Central Banks (ESCB) and the European Securities and Markets Authority (ESMA) to draft technical standards to ensure that the maintained capital is proportionate to the risk associated with the activities of the CCP.<sup>266</sup> However, even if the ESAs would request higher capital requirements to ensure the proper functioning of the financial system, there would be the need to change the respective regulation. Consistent with other literature, it can be constituted that for a systemically highly relevant institution a minimum capital requirement of EUR 7.5 million is not adequate at all.<sup>267</sup> Therefore, the proposed EMIR review should address this issue by considering to impose higher capital requirements for CCPs.

### Default Fund Contribution

Contributions to the default fund have to be provided by each clearing member. The individual size of the contribution depends on the risk of the respective clearing member's portfolio. Therefore, clearing members with riskier portfolios are required to contribute more to the default fund. The purpose of the default fund is to cover losses above IM, regardless which clearing member defaults. Therefore, the size of the default fund is much smaller than the amount of IM due to the fact that losses covered are mutualized.<sup>268</sup>

According to Art. 42 (1) EMIR, a CCP needs to establish a default fund to cover excess losses not covered by IM resulting from the default or the opening of an insolvency procedure of a clearing member. Art. 42 (3) stipulates that the default fund should provide the CCP with sufficient protection to cope under severe but reasonable market conditions with the default of the clearing member with the largest exposure or the default of the clearing members with the second and third largest exposure. The ESMA, ESCB and EBA developed regulatory technical standards (RTS 153/2013) specifying the framework to determine what constitutes severe but reasonable market conditions.

The stipulated provisions and the underlying consideration encourage to interpret that in most cases the provided IM is sufficient to cover the losses of a clearing member default. However, especially during market turmoil, situations can arise where clearing members are unable to meet their margin requirements (see credit

crisis 1987 in Section VI.B.3). Such extreme but reasonable events in combination with a clearing member default could increase the importance of an adequately backed default fund.

Therefore, the applicable regulatory regime needs to be updated to ensure that CCPs are capable to sustain more defaults than currently anticipated.<sup>269</sup>

### Margin Requirements

VM and IM have already been covered throughout this thesis. For more information, please refer to Section IV.C and V.B of this thesis. Therefore, this part only points out that minor adaptations to the existing regulatory requirements could significantly increase the stability of the default waterfall structure and decrease the possibility of loss sharing among clearing members.

Before defaulting in September 2008, Lehman Brothers already cleared a vast majority of its OTC-derivative contracts through LCH.Clearnet (LCH). At the time of default LCH had a Lehman Brothers exposure of around USD 9 trillion resulting from more than 66,000 transactions. Nevertheless, LCH managed to cover all the losses with the margin provided by Lehman Brothers. As a result, there was no need to access the default fund and the losses were borne by the defaulting party and not the other clearing members.<sup>270</sup> This was achieved because LCH utilized in its risk management process a 99.7% confidence interval to calculate IM requirements, which is higher than the current regulatory minimum of 99.5% in Europe and 99% in the United States of America.<sup>271</sup> It should be the prime objective that accessing to the default fund and the resulting effect of loss sharing only occurs in very rare circumstances.

Therefore, the regulator should consider to increase the confidence interval stipulated in Art. 24 RTS 153/2013 to 99.7% and the MPOR (Art. 26 153/2013) to 8 days in due course of the proposed EMIR review.

### 3. Financial Resources and Clearing Member Default

Sufficient financial resources have the capability to protect CCPs against its primary risk, counterparty credit risk. Therefore, it is essential that CCPs frequently assess the adequacy of the available financial resources and to validate risk measures by conducting stress tests. Those tests should simulate severe market illiquidity, the default of multiple clearing members and large market movements.<sup>272</sup>

<sup>265</sup> Balmer, Clearing<sup>1</sup> 184.

<sup>266</sup> Art 16 (2) and (3) EMIR; Balmer, Clearing<sup>1</sup> 184.

<sup>267</sup> Balmer, Clearing<sup>1</sup> 184.

<sup>268</sup> D. Murphy, OTC Derivatives<sup>1</sup> 148.

<sup>269</sup> Balmer, Clearing<sup>1</sup> 186.

<sup>270</sup> Balmer, Clearing<sup>1</sup> 61–62.

<sup>271</sup> Balmer, Clearing<sup>1</sup> 184.

<sup>272</sup> D. Murphy, OTC Derivatives<sup>1</sup> 215.



Despite internal modelling by CCPs, the ESMA also conducts mandatory stress-tests in order to determine if the implemented risk measures are effective and CCPs are capable to sustain predetermined stress scenarios. The applied models serve the purpose to identify exposure and weaknesses of the system in order to eliminate rudimentary flaws. The models are not calibrated to account for every possibility, which can arise in due course of severe market conditions. Throughout the modelling process it is essential to account for the probability of occurrence of each possibility in order to put the associated costs of obtaining an insurance in relation to the likelihood of such an event.<sup>273</sup>

Figure 9.0 depicts the components of the ESMA stress-test:

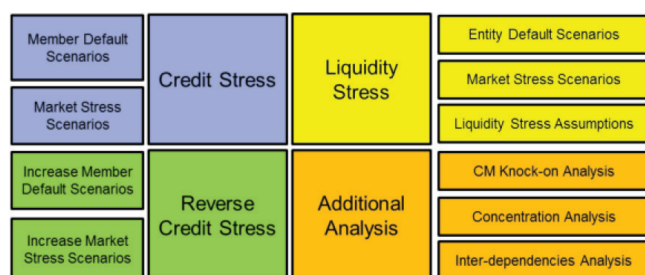


Figure 9.0

Components of the Stress-Test: Source: ESMA – EU-wide CCP Stress Test 2017

In February 2017, ESMA conducted a EU-wide CCP stress-test in order to determine if CCPs have sufficient financial resources to absorb losses in case a number of clearing members default. The underlying assumption for the conducted credit stress-test was that the two largest clearing members of a CCP simultaneously default.<sup>274</sup> The result of the credit stress-test revealed that European CCPs are currently capable to withstand such multiple defaults of clearing members.<sup>275</sup>

However, the credit crisis on Monday, 19<sup>th</sup> of October 1987 and the resulting market disruption almost caused the failure of the CCPs of the Chicago Mercantile Exchange (CME), the Chicago Board of Trade (CBOT) and the Options Clearing Corporation (OCC).<sup>276</sup> The near default of those CCPs were caused by large market movements and volatility triggering substantial margin calls. As a result of those margin calls a number of clearing members were unable to fulfil their capital require-

ments. In addition, other clearing members were faced with margin calls exceeding their capital.<sup>277</sup> A subsequent default of a large CCP was only prevented by the unconditional assistance of the Federal Reserve, providing the required liquidity.<sup>278</sup>

### Excursus Clearing Membership Requirements – Membership Concentration

Another option for CCPs to manage or mitigate counterparty credit risk is to impose strict requirements on who can become a clearing member.<sup>279</sup> High membership requirements ensure that clearing members have a low probability of default and that they are capable to conduct the clearing process and the accompanying tasks. However, the criteria and requirements imposed should not be in any way anti-competitive and should ensure a fair and open access to CCPs. Comparing membership requirements of distinctive CCPs, some minor differences might be visible. Nevertheless, they generally focus on creditworthiness, liquidity and operational tasks.<sup>280</sup>

The following list provides an excerpt of possible membership requirements:

- ▶ Net-capital requirements: Clearing members have to constantly maintain a core capital base. Requirements depend on the products intended to be cleared and if clearing member intends to provide clearing services for its clients.
- ▶ Rating: Clearing members need to have a minimum rating. The rating score can either be based on an external rating provided by one of the rating agencies or the CCPs internal rating assessment.
- ▶ Operational Infrastructure: Clearing members need to have an efficient, effective and stable infrastructure in place to process all transactions. This also includes the required banking arrangements to execute margin payments in a timely manner.
- ▶ Default fund contributions: Contributions for clearing members depend on the size and riskiness of the underlying portfolio. For clearing members providing clearing services for clients the contributions might be higher.
- ▶ Authorisation: The clearing member or at least one member of its group must be licensed by a competent authority in the European Union.
- ▶ Default management: Clearing members occasionally need to demonstrate that they are able to execute and participate in the required processes and procedures in due course of a clearing member default.<sup>281</sup>

<sup>273</sup> Balmer, Clearing<sup>1</sup> 185.

<sup>274</sup> European Supervisory Authorities, Report EU-wide CCP Stress Test 2017, <<http://firds.esma.europa.eu/webst/ESMA70-151-1154%20EU-wide%20CCP%20Stress%20Test%202017%20Report.pdf>> (Sn 41), (Retrieved 03.03.2018).

<sup>275</sup> European Supervisory Authorities, Report EU-wide CCP Stress Test 2017 (8).

<sup>276</sup> Gregory, Central Counterparties<sup>1</sup> 269.

<sup>277</sup> Balmer, Clearing<sup>1</sup> 186.

<sup>278</sup> Gregory, Central Counterparties<sup>1</sup> 270.

<sup>279</sup> D. Murphy, OTC Derivatives<sup>1</sup> 214.

<sup>280</sup> Gregory, Central Counterparties<sup>1</sup> 134–135.

<sup>281</sup> Gregory, Central Counterparties<sup>1</sup> 135.



Imposing strict membership requirements potentially reduces the probability that a clearing member defaults. However, it also leads to a membership concentration since only large and systemic relevant financial institutions have the ability to meet those requirements. Therefore, the default of a clearing member would represent an extreme situation resulting in market turbulences, uncertainty and high volatility with potential detrimental effects for the CCPs.<sup>282</sup>

Current literature raises the question of whether lowering membership requirements could resolve those issues by broadening the base of clearing members in an effort to diversify and spread risk. However, lowering the requirements would transform CCPs to become riskier in general.<sup>283</sup>

Furthermore, effectively mitigating the effects of a large clearing member default through membership diversification would require a substantial number of clearing members. Therefore, the overall solution to mitigate risks associated with membership concentration is to make CCPs more resilient to a clearing member default.

## Conclusion

It can be summarized, that the latest EU-wide stress-test revealed that European CCPs are currently capable to sustain the default of the two largest clearing members. Nevertheless, it is questionable if they can survive an extreme but plausible scenario, comparable to the credit crisis in the USA. In an effort to establish a certain level of quality and security, it is essential that authorization requirements for CCPs including minimum capital requirements are substantially high. Furthermore, in the case where a single clearing member defaults, the posted IM and VM of the respective member should always be sufficient to cover the losses and the default fund should not be activated. The activation of the default fund should only be required in case a larger number of clearing members default within a short time frame. Taking into account the applicable provisions under the current regulatory framework, it can be determined that it is essential to establish more stringent CCP authorisation requirements, higher capital requirements, higher IM requirements and a default fund that can handle larger and more defaults than currently stipulated.

## VII. Initial Margin: Conceptual Issues and the Need for a Formal Ratification

The requirement to exchange IM for non-centrally cleared OTC-derivative contracts and the potential accompanying effects are controversial. The first part of this section is going to focus on certain conceptual considerations provided by the BCBS and IOSCO final report on »Margin Requirements for non-centrally cleared derivatives.«<sup>284</sup> The final report served as the foundation for drafting the applicable regulatory regime. The section concludes by looking at a current issue arising for members of an institutional protection scheme (IPS)<sup>285</sup> and the potential need for a formal ratification.

### A. Conceptual Shortcomings

The current regulatory framework is based on several conceptual weaknesses. Those weaknesses result in a detrimental treatment of non-centrally cleared OTC-derivative contracts. The first issue is the common-belief that in any case the benefits of exchanging IM outweigh its costs. The second issue is that the obligation to exchange IM provides an inducement for clearing. The third issue revolves around the belief that IM ensures a level playing field between centrally cleared and non-centrally cleared OTC-derivative contracts.<sup>286</sup> Finally, this part of the section is going to elaborate on the issue that posting IM results in a wealth transfer between derivatives creditors and other creditors.<sup>287</sup>

It is without a doubt, that the requirement to exchange IM could significantly reduce counterparty credit risk.<sup>288</sup> However, it needs to be critically questioned if the associated costs are equal to or less than the obtained benefits. Furthermore, it needs to be analysed if other measures could support the objective to mitigate counterparty credit risk.

<sup>284</sup> *Bank for International Settlements*, Margin requirements for non-centrally cleared derivatives.

<sup>285</sup> Art 113 (7) Regulation (EU) 575/2013 (CRR) defines an institutional protection scheme (IPS) as a contractual or statutory liability arrangement, which protects its member institutions and ensures that if necessary, liquidity and solvency is provided in order to avoid bankruptcy.

<sup>286</sup> *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives, <<https://www.isda.org/a/pEiDE/margin-requirements-for-non-cleared-derivatives.pdf>> (4,5,7), (Retrieved 19.02.2018).

<sup>287</sup> *Gregory*, The Impact of Initial Margin, <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2790227](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2790227)> (17), (Retrieved 18.02.2018).

<sup>288</sup> *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (4).

<sup>282</sup> *Gregory*, Central Counterparties' 135–136.

<sup>283</sup> *Gregory*, Central Counterparties' 136.

### More Benefits than Costs

In order to determine the costs associated with the requirement to post IM, the WGMR conducted a quantitative impact study (QIS) in 2013. The QIS indicated that market participants estimated an additional requirement of EUR 700 billion in liquid assets in order to fulfil the IM requirements subject to the application of the EUR 50 million threshold. However, further analysis revealed that most participants in the QIS answered questions inconsistently and made the assumption that the threshold could be applied to each counterparty of a group. Although, the current regulatory framework states that in case of a consolidated group the threshold can only be applied against the group and not against each individual member. Taking into account this clarification, the value of liquid assets needed to fulfil the IM requirement increases to around EUR 1 trillion.<sup>289</sup> The additional amount of margin required for IM imposes a significant challenge for market participants even under normal market conditions. Therefore, it is safe to constitute that in due course of market turbulences the increase in IM requirements, estimates by ISDA project a possible increase by a factor of three, places an additional burden on market participants by obliging them to generate new funds at the worst possible time. In order to meet new IM requirements, market participants can either decrease or eliminate activities in non-centrally cleared OTC-derivative contracts, divert funding from other activities or generate new funding through capital markets. All of those options could potentially have a detrimental effect on the real economy. Furthermore, especially in stressed market conditions the requirement to generate additional funds could be procyclical for the banking system and the markets. In respect to the banking system, certain market participants will likely fail in an effort to raise sufficient funds. In respect to markets, the sale of assets could result in decreasing asset prices, triggering further IM calls, which forces market participants to sell additional assets – eventually resulting in a vicious cycle.<sup>290</sup>

But what are the costs associated with posting IM? Reverting back to the QIS, the assumption for the following calculation is that the total global IM requirement is EUR 1 trillion and the cost of funding under current market conditions through capital markets range from 1.5 % to 3.0 % per annum. Therefore, the total global cost of IM would be between EUR 15 billion and EUR 30 billion per year.<sup>291</sup>

In order to determine the benefits associated with IM and to put the numbers into perspective, the default of Lehman Brothers could be used as a reference. At the time of filing for bankruptcy, Lehman Brothers was one of the largest players in the OTC-derivative markets. The derivative portfolio consisted of over 1 million trades with a total notional of EUR 35 trillion.<sup>292</sup> This was roughly about 2 % of all outstanding OTC-derivative contracts, and the estimated aggregate exposure of the largest banks was around EUR 14 billion.<sup>293</sup> However, due to the fact that Lehman calculated and posted VM on a daily basis, actual losses incurred were much less. The resulting losses were not systemically relevant and counterparty credit losses remained manageable and controllable at all times.<sup>294</sup> The resulting disruptions were largely attributable to the fact, that it took quite a substantial time to resolve positions in markets other than OTC-derivatives. OTC-derivatives were immediately and efficiently closed out under the respective ISDA agreements and the provided VM was liquidated instantly.<sup>295</sup> On the contrary, American International Group (AIG) did not exchange VM on a daily basis with its counterparties. When AIG's ratings declined, VM margin calls were triggered on a large-scale requiring AIG to provide the requested collateral immediately. The subsequent liquidity outflow, in order to meet the additional collateral demands, caused the collapse of AIG eventually prompting a government bailout due to fears about systemic contagion.<sup>296</sup>

It can be summarized that even under normal market conditions the costs associated with the funding of IM requirements are significantly high. Those costs could prompt market participants to eliminate trading in non-centrally cleared OTC-derivative contracts or divert funding from other activities with potential effects on the real economy. Furthermore, the Lehman Brothers and AIG examples provide evidence that the daily and efficient exchange of VM has a substantial positive effect on mitigating counterparty credit risk and subsequently reduces fears of systemic contagion. In addition, due to the daily exchange of VM, the incurred losses in case of Lehman Brothers were significantly

289 Gregory, Central Counterparties<sup>1</sup> 95.

290 *International Swaps and Derivatives Association*, Initial Margin For Non-Centrally Cleared Swaps, <<https://www.isda.org/a/AM/DDE/margin-for-uncleared-presentation-final.pdf>> (4,6,8), (Retrieved 19.02.2018).

291 *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (5).

292 *O'Kane*, Initial Margin for Non-Centrally Cleared OTC Derivatives (8).

293 *Scott*, Interconnectedness and Contagion – Financial Panics and the Crisis of 2008 (2014) 39.

294 *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (4).

295 *International Swaps and Derivatives Association*, Non-Cleared OTC Derivatives: Their Importance to the Global Economy, <<http://www2.isda.org/attachment/NTM2OA==/Non-Cleared%20OTC%20Derivatives%20Paper.pdf>> (8–9), (Retrieved 30.08.2017).

296 *International Swaps and Derivatives Association*, Non-Cleared OTC Derivatives: Their Importance to the Global Economy (8).

lower than the comparable funding costs of IM requirements. Therefore, it can be concluded that it is not a valid argument the benefits of posting IM outweigh the associated costs in any case.

### Inducement for Central Clearing

The revised BCBS and IOSCO framework states that margin requirements for non-centrally cleared derivatives support two main objectives. The first objective is to mitigate systemic risk and the second one is to incentivise central clearing.<sup>297</sup> The next section is going to focus on the latter objective and the underlying assumption that IM requirements, in case they are set high enough, have the potential to stimulate central clearing. At first glance this seems to be plausible. However, taking a closer look the assumption fails to take into account several important issues, which are outlined below.

CCPs have significantly increased their clearable product spectrum over the last years and now cover a wide range of different asset classes.<sup>298</sup> At this point, it needs to be stated that financial instruments, not subject to the clearing obligation can be cleared on a voluntary basis through a CCP subject to bilateral agreement between the counterparties.

Nevertheless, a large number of OTC-derivative contracts cannot be cleared yet or will never receive the status of being clearable through a CCP. This is especially the case for highly structured contracts.<sup>299</sup> However, incentives can only be provided for clearable transactions and market participants can only take advantage of those incentives by shifting from non-clearable transactions to products that can be cleared. This could prompt market participants to increase pressure on CCPs to accept transactions, which under normal circumstances would be considered unsuitable for clearing. Subsequently, those transactions could impose credit risks resulting in potentially major uncontrollable risks for the CCPs. Due to the fact, that CCPs are systemically important institutions, a CCP default would have catastrophic consequences. Furthermore, this biased promotion of central clearing could result in an adverse and unwanted reaction by market participants. Instead of covering their risk exposure with a perfect hedge, they could be forced to select a clearable but imperfect hedge tran-

saction leaving unwanted residual risk on their balance sheet.<sup>300</sup> A second effect of imperfect hedges is that it potentially eliminates the option to utilize the technique of hedge accounting. This technique allows one to recognize gains and losses of associated hedges and the respective hedged items within the same accounting period. Hedge accounting, widely used in praxis, is a very efficient method to eliminate or mitigate volatility in the profit and loss statement.<sup>301</sup> Eliminating or reducing the availability of hedge accounting could prompt market participants to consider to withdraw from certain productive activities. This reaction could be detrimental to economic and capital growth.<sup>302</sup>

It can be summarized that incentivizing clearing by imposing IM requirements for non-centrally cleared OTC-derivative contracts could result in certain unintended effects. Those effects could restrain economic development and could be detrimental to create robust, effective and resilient CCPs. In conclusion, it can be stated that introducing IM requirements for non-centrally cleared OTC-derivative contracts is not the appropriate measure to foster central clearing with the underlying objective to mitigate risk.

### Level Playing Field

There is the general perception that the exchange of IM for non-centrally cleared derivatives is needed in order to provide a level playing field between centrally cleared and non-centrally cleared transactions. Keeping in mind that the BCBS and IOSCO framework intends to encourage clearing and explicitly points out that there is a »generally higher risk associated with these [non-centrally cleared] derivatives«<sup>303</sup>, particular care is required to ensure that cleared transactions do not receive a favourable treatment.<sup>304</sup>

The capital of a CCP is almost entirely provided by its clearing members in the form of IM, VM and the contributions to the default fund.<sup>305</sup> Without those inputs of capital, especially in the form of IM and the default fund contributions, a CCP would not be considered a creditworthy counterparty due to the lack of sufficient

297 *Bank for International Settlements*, Margin requirements for non-centrally cleared derivatives (3).

298 *LCH*, What We Clear, <<https://www.lch.com/services/swap-clear/what-we-clear>> (Retrieved 20.02.2018).

299 *Hull*, OTC Derivatives and Central Clearing: Can All Transactions Be Cleared? <<http://www-2.rotman.utoronto.ca/~hull/downloadablepublications/HullOTC.pdf>> (10–12), (Retrieved 20.02.2018); *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (6–8); *Bank for International Settlements*, Margin requirements for non-centrally cleared derivatives (3).

300 *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (6).

301 *PriceWaterhouseCoopers*, Practical Guide – General Hedge Accounting, <<https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-9/practical-general-hedge-accounting.pdf>> (3), (Retrieved 22.02.2018).

302 *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (6).

303 *Bank for International Settlements*, Margin requirements for non-centrally cleared derivatives (3).

304 *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (7).

305 *O’Kane*, Initial Margin for Non-Centrally Cleared OTC Derivatives (9); *ISDA, IIF, AFME, SIFMA*, Margin Requirements for Non-Centrally-Cleared Derivatives (7).

capitalisation. In the bilateral OTC-derivative markets, despite the fact that higher capital requirements apply to those transactions, most of the counterparties hold sufficient capital and are considered to be of high credit quality. Market participants take on credit risk in due course of doing business. However, exposure to credit risk is not only limited to bilateral OTC-derivative contracts, it can also result from loans and other financial instruments. Therefore, effective risk management, including sufficient financial resources to cover counterparty default losses, is essential in the normal course of doing business.<sup>306</sup>

Generally, the objective to establish a level playing field needs to be supported. However, it can be stated that the current IM regime fails to differentiate between the fact that IM requirements are vital for CCPs to conduct their business and to account for potential credit risks arising from a clearing member default. Whereas, in addition to higher capital requirements for non-centrally cleared OTC-derivative contracts, counterparties in bilateral trades are sufficiently capitalised. This is an important distinction, which is not considered and fairly accounted for in this context. Furthermore, credit risk in bilateral trades should not be seen as an isolated phenomenon to derivatives. There is no difference if credit risk arises from a loan, a derivative or any other financial instrument. Therefore, it is not coherent and disproportionate that capital is considered to be sufficient to cover credit risk arising from loans and other financial instruments but not for bilateral derivatives. It can be concluded that the current IM regime fails to establish a level playing field between non-centrally cleared contracts and transactions cleared through a CCP resulting in a favourable treatment of the latter.

### Wealth Transfer

The last part of this section is going to elaborate on the assumption that posting IM results in a wealth transfer between derivatives creditors and other creditors. In order to briefly recapitulate, posting IM has the objective to cover potential future exposure arising between the last successful exchange of VM and the effective liquidation of the defaulting counterparty's OTC-derivative contracts portfolio.<sup>307</sup> According to Jon Gregory »initial margin aims to create a »defaulter pays« environment where a defaulted counterparty pays for claims a priori via pledging initial margin which is held in a segregated account.«<sup>308</sup> Therefore, the requirement to post IM ma-

kes derivative creditors more senior compared to other creditors.<sup>309</sup>

The structure and concept of IM has the intention to completely eliminate residual credit exposure. This would provide derivatives creditors with an absolute seniority over other creditors. In praxis, due to a number of reasons, IM might not be sufficient to completely meet the claims of derivative creditors. As a result, derivative creditors can only obtain a partial seniority.<sup>310</sup>

The reasons for partial seniority are briefly depicted below. Since the underlying concepts and the applicable regulatory framework for bilateral margin requirements have been provided in Section V of this thesis, no further details are provided here.

- ▶ Insufficient calibration of the calculation models to determine IM requirements could potentially result in an underestimation of the actual incurred exposure. In such case IM requirements might not be adequate to cover actual losses.
- ▶ Due to the EUR 50 million threshold losses are not covered up to this amount.
- ▶ The material scope of bilateral IM requirements excludes certain transactions.
- ▶ Phase-in periods for mandatory IM requirements result that only trades entered into after the relevant effective date need to be accounted for. This leaves legacy trades completely out-of-scope.<sup>311</sup>

Table 2.0 provides an example and a brief explanation of the impact of posting IM on the claims of derivative creditors and other creditors in case the respective counterparty defaults.

	Claim	Posted IM	Recovery Rate	IM	Recovery	Effective Recovery Ratio
Derivatives Creditors	30,0	25,0	35,0%	25,0	26,8	89,2%
Other Creditors	90,0	0,0	35,0%	0,0	31,5	35,0%
Total	120,0	25,0		25,0	58,3	48,5%

Table 2.0

*Impact IM on Derivative Creditors and Other Creditors: Assuming the following situation. Derivatives Creditors have a claim of EUR 30 million and IM posted by the defaulting company is EUR 25 million. Whereas the other creditors have a claim of EUR 90 million. The residual value of the defaulting company is EUR 58,3 million and the recovery rate is 35%. After taking into account the posted IM for covering the losses incurred, derivatives creditors have a remaining claim of EUR 5 million, which they claim alongside with the other creditors. Considering the respective recovery rate derivatives creditors are going to receive an additional EUR 1,8 million and the other creditors receive EUR 31,5 million. The other creditors are left with a recovery rate of 35%. Whereas derivatives creditors due to the effect of posted IM receive a recovery rate of 89,2%. Source: Impact of Initial Margin by Jon Gregory<sup>312</sup>. The numbers have been adapted by the author of this thesis.*

306 ISDA, IIF, AFME, SIFMA, Margin Requirements for Non-Centrally-Cleared Derivatives (7).

307 Financial Conduct Authority, Margin requirements for uncleared derivatives, <<https://www.fca.org.uk/markets/emir/margin-requirements-uncleared-derivatives>> (Retrieved 24.02.2018).

308 Gregory, The Impact of Initial Margin (5).

309 Gregory, The Impact of Initial Margin (9).

310 Gregory, The Impact of Initial Margin (8-9).

311 Gregory, The Impact of Initial Margin (8).

312 Gregory, The Impact of Initial Margin (9-10).



It can be summarized that derivatives creditors are not fully senior. Nevertheless, they are at least treated partially senior by receiving a much higher recovery rate.<sup>313</sup> Even, if they are ranked »pari passu«<sup>314</sup> with other creditors, holding initial margin creates a partial seniority of derivative creditors.<sup>315</sup> Therefore, it can be concluded that at the expense of other creditors posting IM results in an unilaterally preferential treatment of a specific group of creditors. Although, not in the scope of this thesis it should be questioned if this preferential treatment is in alignment with the general insolvency principle of »par condito creditorum«<sup>316</sup>.

## Conclusion

The analysis of the underlying conceptual considerations for the requirement to exchange IM for non-centrally cleared OTC-derivatives revealed certain shortcomings. It can be briefly summarized that IM requirements for non-centrally cleared OTC-derivative contracts impose substantial costs for all in-scope entities and that those costs by far outweigh the associated benefits. Furthermore, it is evident that the requirement to exchange VM for non-centrally cleared OTC-derivative contracts needs to be supported. Effective and daily exchange of VM substantially reduces counterparty credit risk, lowers counterparty credit losses in case of a default and subsequently decreases systemic risk. The intention to provide inducements to promote central clearing could result in pressure for CCPs to accept unsuitable transactions for clearing potentially imposing uncontrollable risks for CCPs. In addition, the biased promotion of central clearing could pressure market participants to cover their risk exposure with an imperfect but clearable transaction, which leaves certain risks on their balance sheet. Finally, the requirement to post IM for non-centrally cleared OTC-derivative contracts leads to a preferential treatment of derivative creditors making them more senior compared to other creditors.

With the above findings in mind, it can be constituted that the requirement to exchange IM for non-centrally cleared OTC-derivative contracts is not essential to achieve the regulatory objectives. Therefore, it should be eliminated in due course of the upcoming EMIR-review.

In addition, the objectives can easily be achieved by effective supervision, an efficient capital regime and the requirement to exchange VM for all non-centrally cleared OTC-derivative contracts provided that valuation and exchange occurs on a daily basis.<sup>317</sup>

## B. Interpretation of a Group – Need for Clarification

The last part of this chapter is going to focus on the term and interpretation of a »group« and the issues arising in determining the applicability of certain provisions, specifically Art. 28 and Art. 29 of RTS 2016/2251. It needs to be noted at this point that there is hardly any publicly accessible information in respect to the issues addressed.

According to Art. 2 (16) EMIR, a »group« is defined as:

*»the group of undertakings consisting of a parent undertaking and its subsidiaries within the meaning of Articles 1 and 2 of Directive 83/349/EEC or the group of undertakings referred to in Article 3(1) and Article 80(7) and (8) of Directive 2006/48/EC.«<sup>318</sup>*

The definition is two-folded listing two types of group structures with different needs, requirements and objectives. Therefore, a »group« under EMIR can either be a consolidated group or an institutional protection scheme (IPS). As stated above, the definition of a group is highly relevant in order to determine the applicability of certain requirements regarding the exchange of IM for non-centrally cleared OTC-derivative contracts. To cater to this fact, it is essential that a proportionate and rational interpretation approach is selected in order to evaluate which definition needs to be applied in respect to Art. 28 and Art. 29 of RTS 2016/2251. To provide a holistic view on the underlying problem, it is deemed to be necessary to briefly outline the exemption from the clearing and bilateral margin obligation for intragroup transactions.

The obligation to clear all OTC-derivative contracts, which are subject to the clearing obligation, is set out in Art. 4 (1) EMIR. According to Art. 4. (2) EMIR, there is an exemption to the clearing obligation for intragroup transactions as described in Art. (3) EMIR, subject that those transactions also fulfill the additional requirements set out in Art. (2) EMIR. Art. 4 (2) EMIR specifically utilizes the term intragroup transactions, which are set out in Art. (3) EMIR and encompass transactions within a consolidated group (Art. 3 (2) (a) (iii) EMIR), as well as within an IPS (Art. 3 (2) (b) EMIR).<sup>319</sup> Therefore, it can be concluded that counterparties being part of a »group« can be excluded from the clearing obligation in respect to transactions within the group. In order to apply this exclusion, it is not relevant whether the counter-

313 Gregory, The Impact of Initial Margin (9).

314 Of the same seniority in terms of claims in the event of default.

315 Gregory, The Impact of Initial Margin (3).

316 Equal treatment of all creditors.

317 ISDA, IIF, AFME, SIFMA, Margin Requirements for Non-Centrally-Cleared Derivatives (8).

318 Art 2 (16) EMIR.

319 Bundesanstalt für Finanzdienstleistungsaufsicht, Exemption from clearing obligation for intragroup transactions, <[https://www.bafin.de/EN/Aufsicht/BoersenMaerkte/EMIR/Ausnahmen-Clearing/intragruppen\\_ausnahmen\\_clearing\\_node\\_en.html](https://www.bafin.de/EN/Aufsicht/BoersenMaerkte/EMIR/Ausnahmen-Clearing/intragruppen_ausnahmen_clearing_node_en.html)> (Retrieved 28.02.2018).

parties to the transaction are within the same consolidated group or the same IPS.

Furthermore, in addition to the exemption from the clearing obligation, intragroup transactions are also exempted from the requirement to exchange margin. The requirement to exchange margin for non-centrally cleared OTC-derivative contracts is laid down in Art. 11 EMIR, whereas the exclusion for intragroup transactions is stipulated in Art. 11 (5) EMIR. Art. 11 (5) EMIR also refers to intragroup transactions as laid down in Art. 3 EMIR.<sup>320</sup> It can be briefly summarized that the findings in respect to the exemption from the clearing obligation are also applicable here. Subject to other requirements the general intention of the regulator is to exempt transactions between members of a consolidated group and transactions between members of an IPS from the clearing and bilateral margin requirement.

The above outlined interpretation is fairly easy to apply due to the fact that the regulator has provided additional and specific information on what constitutes an intragroup transaction. However, in respect to RTS 2016/2251 market participants are currently discussing on how the term »group« referred to in Art. 28 and Art. 29 of RTS 2016/2251 needs to be understood. Due to the fact that RTS 2016/2251 does not contain its own definition of a »group«, the interpretation needs to be conducted by referring to the definition provided under EMIR.

The requirement to exchange IM for non-centrally cleared OTC-derivative contracts is going to be phased in gradually. Since 4<sup>th</sup> of February, 2017 the largest market participants with an average aggregate notional amount (AANA) of EUR 3 trillion are required to exchange IM. The phase-in period is going to conclude on 1<sup>st</sup> of September, 2020. From this point on, market participants with an AANA of 8 billion need to exchange IM for non-centrally cleared OTC-derivatives.<sup>321</sup> The requirements to calculate the AANA, also referred to as notional threshold, are laid down in Art. 28 of RTS 2016/2251. Furthermore, Art. 29 of RTS 2016/2251 provides the opportunity to apply a threshold on the IM collected of up to EUR 50 million, respectively EUR 10 million in certain cases. The respective threshold is subject to ongoing monitoring and is also referred to as IM threshold.<sup>322</sup>

The regulator requires that the notional threshold and the IM threshold need to be calculated and applied »at group level« and not on the level of the indi-

vidual counterparty.<sup>323</sup> The telos of this requirement is not the risk bearing capability of the group itself but rather to prevent any circumvention of the obligation to exchange IM. If the thresholds would not be applicable »at group level« it would be possible for a consolidated group to split its OTC-derivative transactions amongst the various entities in an effort to avoid the necessity to exchange IM. On the contrary, members of an IPS are not in a position to distribute their OTC-derivative contracts amongst other members due to the fact that they lack direct authority. In addition, such a distribution would not be rational from an economic perspective.<sup>324</sup>

Furthermore, from the authors experience it needs to be stated that the volume of OTC-derivative contracts within a consolidated group can easily be controlled and monitored. However, within an IPS the individual members have no insight, no information and no influence on the trading activities of the other members. Therefore, solely from a practical perspective the interpretation of Art. 28 and Art. 29 of RTS 2016/2251 cannot encompass an IPS. If so, this would impose additional challenges and impediments not only for the individual members of the IPS but also for each counterparty trading OTC-derivative contracts with an IPS member due to the requirement that all parties involved need to monitor the respective thresholds at the level of the IPS.

It can be summarized that the term »group« in respect to RTS 2016/2251 can only be interpreted to encompass a consolidated group but not an IPS. This is attributable to the fact that in an IPS structure it is not possible to split OTC-derivative contracts amongst other members. Furthermore, members of an IPS have no ability to control, authorize or prohibit another member of the IPS to engage in OTC-derivative contracts. However, in order to avoid any confusion and misinterpretation, the regulator should provide further guidance or a formal ratification in order to provide for a Union's autonomous interpretation.

## VIII. The Future: Contemplate – Evaluate – Review

### Contemplate

The motivation to elaborate on central clearing and bilateral margin requirements stems from my deep conviction that it is important and reasonable to have a proper and balanced regulatory framework for OTC-derivatives in place.

320 *Bundesanstalt für Finanzdienstleistungsaufsicht*, Exemption from clearing obligation for intragroup transactions.

321 *Ernst & Young*, EMIR – Implementation schedule of margin requirements for non-centrally cleared derivatives postponed to 1 September 2016.

322 *Pham*, EMIR Rules for Margining Non-Cleared OTC Derivatives: What You Need to Know.

323 Art 28, 29 RTS 2016/2251.

324 *Rump/Andrae/Rosam*, EMIR-Besicherungspflicht Herausforderungen im Collateral Management, Risiko Manager 02/2017, 43 (46).

## Evaluate

Looking back and analysing the regulatory developments in the aftermath of historical financial crisis provide evidence that regulators utilize such events to justify their response. Furthermore, it can be stated that in regards to regulatory actions, the discussion about proportionality and fair and equal treatment of market participants is not a new phenomenon.

The global financial crisis was not any different and prompted regulatory reactions around the world. However, the enormous amount and fast pace of publishing new regulatory provisions affecting the financial industry imposed additional challenges for all affected entities. In addition, the complexity and technical challenges in implementing the required provisions expose market participants to undue operational, legal and compliance risk. The postponement of implementing several legislative acts, the latest being MiFID II, MiFIR and PRIIPs, provides clear evidence that especially smaller financial counterparties need more time to interpret, comprehend and implement those provisions.

In the aftermath of the global financial crisis, over-the-counter derivatives came under particular scrutiny. The assumed systemic risk stemming from the over-the-counter derivatives market were largely attributed to its size, its interconnectedness and the lack of transparency. However, as evidenced by this analysis, major market participants failed to effectively manage risks arising from over-the-counter derivatives. The subsequent financial distress of those market participants, as a result of inadequate risk management not the financial instrument itself, triggered fears of systemic contagion. The analysis also reveals the importance to foster a common understanding of what constitutes a derivative in order to avoid frictions in legal, regulatory and political discussions. On a European level, the legal definition is provided by MiFIR and currently guarantees a uniform interpretation and application. Nevertheless, it is essential to closely monitor the ever-developing derivatives market to ensure consistent interpretation.

Before the global financial crisis, the over-the-counter derivatives market was largely unregulated. However, various Regulations and Directives affecting over-the-counter derivatives have been imposed including CRD IV, CRR, MiFID II, MiFIR, PRIIPs and EMIR. Subsequently, the over-the-counter derivatives market transformed from being unregulated to highly regulated. The analysis also indicates that exchange-traded markets are considered to be safer and more resilient due to role of central clearing parties and the respective margin process to mitigate counterparty credit risk. As a result of the analysis, it can be interpreted that the intention of the current regulatory regime is to align

the over-the-counter markets more and more to the exchange-traded markets. This alignment is evidenced by the requirement to centrally clear standardized OTC-derivative contracts and the obligation to exchange margin for non-centrally cleared OTC-derivatives, which have been imposed under EMIR.

Clearing standardized OTC-derivative contracts through a central counterparty is promoted to be the panacea and bulwark for financial stability. The underlying arguments to foster central clearing are to increase transparency and to mitigate systemic risk. The analysis revealed that certain aspects of the clearing process are capable to increase transparency on a minor scale. However, taking into account the general reporting requirement stipulated under EMIR, it needs to be constituted that the effects of central clearing on transparency are not substantial enough to provide a valid argument to promote central clearing.

Due to their envisaged role and the increased dependency on their proper functioning as more and more OTC-derivative contracts are mandated to be cleared, CCPs need to be classified as highly systemic relevant. In addition, central clearing also results in further risk concentration at the level of the CCP. As evidenced by the analysis this is largely attributable to the effect that counterparty credit risk is transferred to the CCP and further amplified by the strict clearing membership requirements imposed by CCPs. Therefore, it is essential that CCPs effectively manage counterparty credit risk and are sufficiently stable to handle the implied risk that clearing members default. In the case of a risk management failure or a clearing member default CCPs should have sufficient financial resources to cope with the accompanying effects without being endangered themselves. The latest EU-wide CCP stress-test provided positive results. However, the analysis raised uncertainties if the applicable provisions under the current regulatory regime are sufficient to protect CCPs from an extreme but plausible scenario, comparable to the credit crisis in the USA.

The obligation to exchange margin for non-centrally cleared OTC-derivative contracts encompass the exchange of initial margin and variation margin. The analysis revealed that the effective and daily exchange of variation margin significantly reduces counterparty credit risk, lowers counterparty credit losses in case of a default and subsequently decreases systemic risk. However, the exchange of initial margin and the accompanying effects are controversial. Therefore, initial margin received the focus in due course of the analysis revealing that the current regulatory framework is based on several conceptual weaknesses. Those conceptual weaknesses result in a biased promotion of central clearing. In addition, the analysis showed that the requirement to

post initial margin results in a wealth transfer between derivative creditors and other creditors. Although not in the scope of this thesis it should be questioned if this preferential treatment is in alignment with the general insolvency principle of »par conditio creditorum«.

#### Review

There are certain issues that were not addressed throughout this thesis, which are briefly outlined below:

- ▷ Consequences of BREXIT on CCPs and ISDA legal documentation
- ▷ Adaptation of the Dodd-Frank Act providing possibilities for regulatory arbitrage and competitive advantage

Nevertheless, the analysis and findings throughout this thesis reveal that there is a potential need to contemplate, evaluate and review certain provisions of the current applicable regulatory regime in respect to central clearing and bilateral margin requirements.

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