Collateral transactions and shadow banking

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7 The regulation of margin in the EU shadow banking sector

1 INTRODUCTION

It is interesting to note that the procyclical effect posed by margin was identified as a source of systemic risk long before the Global Financial Crisis. At that time, commentators argued that the build-up of systemic risk in the financial cycle directly pointed to self-reinforcing feedback mechanisms.[1] Yet such suspicions were largely ignored by regulators and many market participants and it was only after the effects were felt by the Global Financial Crisis, that regulatory discourse in relation to mandatory margin requirements in the EU shadow banking sector started to gain prominence.[2]

Importantly, the crisis demonstrated that the procyclicality of margin requirements in the shadow banking sector posed (and continues to pose) a significant challenge to financial stability. This view was corroborated by various policy makers who concluded that margin requirements in collateral transactions are a source of systemic risk and recommended stabilising these practices in order to "dampen financial booms and busts".[3]

However, it has been over ten years since the crisis and regulatory progress in the EU shadow banking sector to limit systemic risk within collateral trans-

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1 C Borio, C Furfine and P Lowe, "Procyclicality of the financial system and financial stability: issues and policy options" (2001) *BIS Papers No 1*; A Crockett, "Marrying the micro- and macro-prudential dimensions of financial stability" (2000) *Bank of International Settlements* 1 at 4; J Danielsson, P Embrechts, C Goodhart, C Keating, F Muennich, O Renault and H S Shin, "An Academic Response to Basel II" (2001) *LSE Financial Markets Group Special Paper Series No. 130.*

2 M Thiemann, M Birk and J Friedrich, "Much Ado About Nothing? Macro-Prudential Ideas and the Post-Crisis Regulation of Shadow Banking" (2018) *Kolner Zeitschrift fur Soziologie und Sozialpsychologie* 259 at 264. See also, V Constancio, "Margins and haircuts as a macro-prudential tool" (6 June, 2016) Vice-President of the ECB, at the *ESRB international conference of the macroprudential use of margins and haircuts*, available at: https://www.esrb.europa.eu/news/speeches/date/2016/html/sp160606.en.html; Financial Stability Board, "Global Monitoring Report on Non-Bank Financial Intermediation 2018" (4 February, 2019) 1 at 25, available at: https://www.fsb.org/wp-content/uploads/P040219.pdf.

3 D Longworth, "Warding Off Financial Market Failure: How to Avoid Squeezed Margins and Bad Haircuts" (2010) *135 C.D. Howe Institute Backgrounder* 1 at 1. See also, BIS Committee on the Global Financial System, "The role of margin requirements and haircuts in procyclicality" (March, 2010) *36 CGFS Papers* 1 at 1; European Systemic Risk Board, "ESRB report on the efficiency of margining requirements to limit pro-cyclicality and the need to define additional intervention capacity in this area" (28 July, 2015) 1 at 7-8.

actions is still not adequately addressed. Currently, there are no EU wide legal or regulatory instruments to tame the uncertainty of margin or indeed limit the build-up of leverage across the EU shadow banking sector. Yet despite no comprehensive legal framework being in place, EU wide measures are nevertheless practiced in certain parts of the legal and regulatory framework and will be the focus of this chapter.

This chapter will therefore proceed by mapping the current state of the legal and regulatory framework regarding margin within the EU shadow banking sector. Section 2 will trace the post-crisis policy responses. These responses provide important insight into the systemic consequences of the crisis and as such, have played (and continue to play) an important role in the regulatory reform agenda that followed (and continues to follow) the crisis. Section 3 explores the role margin plays within EU private law, both from a self-regulation perspective as well as statutory private law. Section 4 will map the existing public law framework, via regulations and directives, in relation to margin within the EU shadow banking sector. Section 5 concludes.

2 TRACING POST-CRISIS POLICY REPONSES

Setting aside the contribution made by countless other mitigating factors, the procyclical effect of margin was at the very heart of the 2007/2008 Global Financial Crisis.[4] Substantial resources have therefore been devoted to framing, implementing and calibrating meaningful reforms to "transform shadow banking into a resilient market based financial system".[5] For instance, in 2008 the Bank for International Settlements argued that the procyclical impact of margin requirements exacerbated systemic risk within the financial system.[6] This view was followed in 2009 by the Turner Review, which put the procyclical effects of margin, as a source of systemic risk, firmly center stage.[7] In 2010, the Committee on the Global Financial System concluded that margin requirements in collateral transactions are a source of procyclicality and

4 M Schularick and A M Taylor, "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870 - 2008" (2012) *102 (2) American Economic Review* 1029-1061. See also, K Knot, "Rethinking Financial Stability; Evaluating regulatory prime concerns a decade on from the financial crisis" (3 December, 2018) *DeNederlandscheBank* 1 at 8-9; J Geanakoplos and L H Pedersen, "Monitoring Leverage" in M Brunnermeier and A Krishnamurthy (eds) *Risk Topography: Systemic Risk and Macro Modeling* (2014) 113 at 114.

5 Financial Stability Board (n 2) 1 at 25.

6 Bank for International Settlements, "Addressing financial system procyclicality: a possible framework" (1 September, 2008) 1 at 8-9, available at: https://www.fsb.org/wp-content/uploads/r_0904e.pdf.

7 A Turner, "The Turner Review: A regulatory response to the global banking crisis" (March, 2009) 1 at 22 and 111, available at: https://webarchive.nationalarchives.gov.uk/20090320232953/http://www.fsa.gov.uk/pubs/other/turner_review.pdf. See also, Thiemann *et al* (n 2) 259 at 269.

recommended stabilising these practices to dampen the build-up of leverage during good times and soften the system-wide effects during bad times.[8] In addition, supervisory bodies such as the Financial Stability Board,[9] European Securities and Markets Authority,[10] the European Systemic Risk Board[11] and others[12], have incrementally introduced numerous publications on this issue.

However, despite numerous publications identifying margin as a source of systemic risk, it is an area still to be substantially tackled.[13] Yet this is a view not shared conclusively by all.[14] There is an argument that policy responses in relation to the role of margin within collateral transactions have taken one of two routes. The first route relates to derivatives transactions, which have arguably made substantial legal and regulatory progress in relation to meaningful reforms. The second route relates to policy responses regarding repos and securities lending transactions. Sadly, the same level of engagement to that achieved with derivatives has yet to be reached with repos and securities lending transactions. This section will proceed by looking at these two routes in greater detail and by mapping the most relevant policy responses.

2.1 Derivatives

2.1.1 BCBS and IOSCO

As noted in Chapter 5, section 5.2.1, A key policy goal of the 2009 Pittsburgh Summit, where G20 members met to discuss the state of the global financial markets, was a commitment to reform the OTC derivatives market in order

8 BIS Committee on the Global Financial System (n 3).

9 There have been a whole host of publications by the Financial Stability Board in relation to the shadow banking sector, the most recent is the Financial Stability Board (n 2) 1 at 1.

10 ESMA has also introduced numerous publications on shadow banking, for the most recent (for the purpose of this thesis) see: "ESMA reports on shadow banking, leverage and pro-cyclicality" (2016), available at: https://www.esma.europa.eu/press-news/esma-news/esma-reports-shadow-banking-leverage-and-pro-cyclicality.

11 The most recent ESRB publication on shadow banking is: European Systemic Risk Board, "Mitigating the procyclicality of margins and haircuts in derivatives markets and securities financing transactions" (2020), available at: https://www.esrb.europa.eu/pub/pdf/reports/esrb.report_200109_mitigating_procyclicality_margins_haricuts~0f3e9f9e48.en.pdf.

12 For example, the European Central Bank, Bank for International Settlements, Basel Committee on Banking Supervision and the International Organization of Securities Commissions.

13 Constancio (n 2). See also, Financial Stability Board (n 2) 1 at 25; D Heremans and A Pacces, "Regulation of banking and financial markets" in *Regulation and Economics* (2012) R J Van Den Bergh and A M Pacces (eds) 558 at 560; M Raffan and J Benjamin, "Wholesale markets and the limits of regulation" (2014) *International Financial Law Review* 1 at 1; Thiemann *et al* (n 2) 259 at 259.

14 M Carney, "Ten years on: fixing the fault lines of the global financial crisis" (21 April, 2017) *21 Financial Stability Review.*

to reduce systemic risk.[15] In particular, "non-centrally cleared contracts should be subject to higher capital requirements", namely through the introduction of mandatory margin requirements.[16]

The G20's conclusions resulted in the formation of the Working Group on Margining Requirements, with the objective of reducing systemic risk by developing a consistent global standard for margin requirements for uncleared OTC derivative transactions.[17] In particular, the view adopted by the Working Group on Margining Requirements was to impose stringent rules requiring eligible counterparties to post higher margin requirements for uncleared OTC derivatives transactions than previously existed.[18] Given that only standardised OTC derivatives are suitable for central clearing, the intention was to standardise terms in collateral agreements and introduce consistent methodologies for the calculation of initial and variation margin so as to make it easier for uncleared OTC derivatives to transition to clearing houses in the future and create a more liquid market.[19] However, it should be observed that not all derivative transactions are suitable for central clearing and some trades will always remain uncleared and will be required to be collateralised separately.[20]

The Working Group on Margining Requirements initiative has ultimately led to the publication, in September 2013 on "Margin requirements for non-centrally cleared derivatives" as a global policy framework – jointly published by the Basel Committee on Banking Supervision ("BCBS") and the International Organization of Securities Commissions ("IOSCO").[21] The pertinent BCBS/IOSCO policy recommendations for the purpose of this study can be summarised as follows:[22]

15 P C Harding and C A Johnson, *Mastering ISDA Collateral Documents: A Practical Guide for Negotiators* (2012) 10.

16 G20 Leaders' Statement, The Pittsburgh Summit (September 24-25, 2009), available at: http://www.g20.utoronto.ca/2009/2009communique0925.html.

17 P C Harding and A J Harding, *A Practical Guide to the 2016 ISDA Credit Support Annexes for Variation Margin* (2018) 11 and 23-24.

18 G20 Leaders' Statement (n 16).

19 Central Counterparty Clearing ("CCPs") will be elaborated upon in this chapter below, see section 4.1 "EMIR: Central Counterparty Clearing". See also, BCBS and IOSCO, "Margin Requirements for non-centrally cleared derivatives" (March, 2015), available at: https://www.bis.org/bcbs/publ/d317.pdf.

20 Harding and Harding (n 17) 11.

21 BCBS and IOSCO, "Margin Requirements for non-centrally cleared derivatives" (September, 2013), available at: https://www.bis.org/publ/bcbs261.pdf; various revisions include: March 2015, available at: https://www.bis.org/bcbs/publ/d317.pdf, March 2019, available at: https://www.bis.org/bcbs/publ/d317_summarytable.pdf and April 2020, available at: https://www.bis.org/bcbs/publ/d499.pdf.

22 *Ibid* 1 at 5.

- Appropriate margining practices should be in place for all derivative transactions not subject to central clearing;
- All financial firms and systemically important non-financial firms must, as a way to mitigate risk, exchange initial margin and variation margin as appropriate;
- The calculation of both initial margin and variation margin should be consistent to ensure that exposure to risk is covered;
- Assets collected as margin should be highly liquid and should be able to hold their value in times of stress;
- Initial margin that is exchanged by both parties should be held in such a way to ensure that it is immediately available upon counterparty default;
- From an international perspective, regulatory regimes should be consistent to avoid a duplication in standards when taking margin; and,
- Margin requirements should be phased in over an appropriate period of time and once set, margin requirements should be reviewed to ensure overall efficacy.

Regulators in various jurisdictions have since set about implementing margin requirements based on these policy recommendations.[23] As such, it is no coincidence that in order to make derivative markets safer and more transparent, the European Market Infrastructure Regulation ("EMIR") was adopted,[24] followed by the 2016 EU Regulatory Technical Standards ("RTS").[25]

2.2 Repurchase Agreements and Securities Lending Transactions

> *"There is no explicit mandate for the use of margins or haircuts in securities financing transactions".*[26]

2.2.1 Financial Stability Board

To strengthen supervision and regulation, a key policy goal of the Financial Stability Board is to "transform shadow banking into a resilient market-based financial system" by introducing "minimum standards for haircut practices"

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23 This will be further elaborated upon in subsequent sections of this chapter. See also, Harding and Harding (n 17) 11.

24 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivative, central counterparties and trade repositories ("EMIR").

25 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 ("RTS").

26 The European Systemic Risk Board, "The macroprudential use of margins and haircuts" (February, 2017) 1 at 4-6. See also, European Systemic Risk Board (n 11) 1 at 30.

in order to limit the amount of leverage a financial institution can obtain.[27] In order to achieve this goal, and as set out by the G20 in October 2011 at the Cannes Summit,[28] the Financial Stability Board set up a dedicated Workstream to mitigate systemic risk, prevent runs and "dampen… pro-cyclical incentives associated with" repos and securities lending transactions.[29]

Such a policy goal has led to numerous published policy reports. For example, in 2013 two important European Parliament publications[30] argued that there is an insufficient amount of granular 'margin' data to strike "an optimal balance between dampening pro-cyclicality and the build-up of excessive leverage on the one hand and maintaining the efficiency and liquidity of the market on the other".[31] In August 2013, the Financial Stability Board published: "Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos", which set out various recommendations to mitigate the systemic risk posed by margins and haircuts.[32] On 14 October 2014, the publication: "Regulatory Framework for Haircuts on Non-centrally Cleared Securities Financing Transactions" was introduced, which included recommendations for standard haircut methodologies when entering into a

27 Financial Stability Board, "Transforming Shadow Banking into Resilient Market-based Finance: Regulatory framework for haircuts on non-centrally cleared securities financing transactions" (12 November, 2015), available at: https://www.fsb.org/wp-content/uploads/P190719-1.pdf. See also, Financial Stability Board, "Shadow Banking: Scoping the Issues" (12 April 2011) available at: https://www.fsb.org/wp-content/uploads/r_110412a.pdf; Financial Stability Board, "Strengthening Oversight and Regulation of Shadow Banking" (18 November, 2012) 1 at 12; G B Gorton, *Misunderstanding Financial Crises: Why We Don't See Them Coming* (2012) 9; J Cullen, "The repo market, collateral and systemic risk: in search of regulatory coherence", in I H Y Chiu and I G MacNeil, *Research Handbook on Shadow Banking Legal and Regulatory Aspects* (2018) 85 at 85-116.

28 Although it was at the November 2010 Seoul Summit where G20 leaders identified systemic issues in relation to financial sector (shadow banking) regulation that warranted attention. On this see, Financial Stability Board 2011 (n 27).

29 Financial Stability Board, "Securities Lending and Repos: Market Overview and Financial Stability Issues: Interim Report of the FSB Workstream on Securities Lending and Repos" (27 April 2012) available at: https://www.fsb.org/wp-content/uploads/r_120427.pdf. See also, Financial Stability Board, "Consultative Document – Strengthening Oversight and Regulation of Shadow Banking: An Integrated Overview of Policy Recommendations" (18 November 2012) 1 at 3, available at: https://www.fsb.org/wp-content/uploads/r_121118.pdf; Financial Stability Board 2015 (n 27) 1 at 2; Financial Stability Board 2011 (n 27); see generally, Thiemann *et al* (n 2) 259 at 269.

30 P Paech, "Shadow Banking: Legal issues of collateral assets and insolvency law" (June, 2013) *European Parliament Economic and Monetary Affairs* 1. See also, R Comotto, "Shadow Banking – Minimum Haircuts on Collateral" (July 2013) *European Parliament.*

31 Comotto (n 30) 1 at 45. See also, Paech (n 30) 1 at 26-27.

32 Financial Stability Board, "Strengthening Oversight and Regulation of Shadow Banking: Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos" (29 August, 2013), available at: https://www.fsb.org/wp-content/uploads/r_130829b.pdf. See also, European Commission, "Green Paper on Shadow Banking – Frequently asked questions" (19 March, 2012) available at: https://ec.europa.eu/commission/presscorner/detail/en/MEMO_12_191.

collateral transaction.[33] In addition, the Financial Stability Board annually publishes a "Global Monitoring Report on Non-Bank Financial Intermediation", which seeks to highlight current vulnerabilities residing within the shadow banking sector.[34]

2.2.2 The European Systemic Risk Board

The Financial Stability Board is not the only policymaker to introduce recommendations and reforms with regard to repos and securities lending transactions. There are a whole host of other examples. The European Systemic Risk Board, for instance, has set up an Expert Group on Margins and Haircuts which is explicitly designed to revisit and analyse procyclical risks associated with margins and haircuts.[35] In July 2016 the Expert Group published: "Assessing shadow banking – non-bank financial intermediation in Europe", where risks relating to leverage and procyclicality were, albeit briefly, discussed.[36] In February 2017 a more substantive publication, titled: "The macroprudential use of margins and haircuts" was introduced.[37] This was followed by a more recent 2020 paper, titled: "Mitigating the procyclicality of margins and haircuts in derivatives markets and securities financing transactions".[38] Amongst other things, these publications have led to three important (and not yet implemented) recommendations, in particular:[39]

1. Macroprudential policies be implemented to mitigate systemic risk associated with excessive leverage and procyclicality in collateral requirements;
2. Margins and haircuts be calibrated as macro-prudential tools; and,
3. The practical challenges of such implementations be identified.

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33 Financial Stability Board, "Strengthening Oversight and Regulation of Shadow Banking: Regulatory framework for haircuts on non-centrally cleared securities financing transactions" (14 October, 2014) available at: https://www.fsb.org/wp-content/uploads/r_141013a.pdf. See also, Cullen (n 27) 85 at 97-98.

34 The most recent is the Financial Stability Board (n 2) 1.

35 See Annex 1 (Attachment 1) of the Recommendation of the European Systemic Risk Board of 4 April 2013 on intermediate objectives and instruments of macro-prudential policy ESRB/2013/1 OJ C 170/1. See also, European Systemic Risk Board, Press Release: The General Board of the European Systemic Risk Board held its 35th regular meeting on 26 September (2 October, 2019) available at: https://www.esrb.europa.eu/news/pr/date/2019/html/esrb.pr191002~8efb305920.en.html.

36 L Grillet-Aubert, J B Haquin, C Jackson, N Killeen and C Weistroffer, "Assessing shadow banking – non-bank financial intermediation in Europe" (July, 2016) *10 European Systemic Risk Board*. See also generally, M Hodula, "Monetary Policy and Shadow Banking: Trapped between a Rock and a Hard Place" (2019) *5 Working Paper Series Czech National Bank.*

37 European Systemic Risk Board (n 26). See also, the most recent ESRB publication on shadow banking, European Systemic Risk Board (n 11).

38 See generally, European Systemic Risk Board (n 11).

39 European Systemic Risk Board (n 11) 1 at 3-5. See also, European Systemic Risk Board (n 26) 1 at 4.

Policies introducing margins and haircuts as a macroprudential regulatory tool are aimed at ensuring the stability of the entire financial system.[40] Because margin is procyclical and therefore a source of systemic risk, macroprudential policies are geared towards mitigating the systemic effects of margin during financial booms and busts.[41] However, it should be noted that while the macroprudential approach is laudable, the flipside is that macroprudential "policy tools and instruments have only been slowly forthcoming… which has brought about only minimal [regulatory] change" in the EU shadow banking sector.[42] 'Macroprudential' regulation can be contrasted with 'microprudential' regulation, which focuses on the safety and soundness of individual financial institutions, rather than the financial system as a whole.[43]

2.2.3 *The European Securities and Markets Authority*

On 4 October 2016, the European Securities and Markets Authority published its "Report on securities financing transactions and leverage in the EU". The main concern was:

> *"Securities financing transactions (SFTs) can contribute to leverage in the financial system. One of the main issues related to leverage is procyclicality, which can manifest itself in many different ways and can incorporate risks for financial stability. The setting of margins and haircuts in relation to SFTs* is one example of this"[44] (emphasis added).

As a result of this statement, it was recommended that:[45]

- Qualitative standards on the methodology used to calibrate and calculate margins and haircuts be employed;
- The procyclicality of collateral haircuts be addressed; and,
- Numerical haircut floors for non-centrally cleared transactions be introduced.

40 L Quaglia, "Financial Regulation" (2015) *2 (9) International Encyclopedia of the Social & Behavioral Sciences* 191 at 191.

41 D Aikman, J Bridges, A Kashyap and C Siegert, "Would Macroprudential Regulation Have Prevented the Last Crisis" (2019) *33 (1) Journal of Economic Perspectives* 107 at 108-110. See also, S G Hanson, A H Kashyap and J C Stein, "A Macroprudential Approach to Financial Regulation" *25 (1) Journal of Economic Perspectives* 3 at 6-7.

42 Thiemann *et al* (n 2) 259 at 261.

43 K Yilla and N Liang, "What are macroprudential tools" (11 February, 2020) *Brookings* 1 at 1-2.

44 European Securities and Markets Authority, "Report on securities financing transactions and leverage in the EU" (4 October, 2016) 1 at 4.

45 *Ibid* at 5-6.

2.2.4 From ideas to action – some observations

It has been over a decade since the Global Financial Crisis and despite numerous publications identifying margin as a source of systemic risk in repurchase agreements and securities lending transactions, it is unfortunate regulators are not tackling this problem head on.[46] The results to date have indeed been no greater than piecemeal solutions. There are, however, arguably two important reasons for such timid intervention.

Firstly, there is currently a severe lack of granular data at EU level. This has proven to be a significant barrier to a clearer understanding of this area. It has been argued that "one important lesson from the… financial crisis is that authorities with responsibility for monitoring and mitigating risks to financial stability need more timely and comprehensive visibility into risky trends and developments in financial markets".[47] In order to achieve this, "authorities need to augment their data collection so as to capture more granular and timely information on securities lending and repo exposures between financial institutions, including on the composition and evolution of the underlying" assets used for financial collateral and margining purposes.[48] One empirical study corroborates this view arguing that given the lack of knowledge regulators have, coupled with the difficulty in assessing what the effects may be because of bad data, regulators are ultimately uneasy about imposing new regulatory measures that would have a detrimental impact on the financial sector and the economy more broadly.[49] Therefore, in order to design and calibrate potential and effective (margin) regulation, it is essential that the relevant authorities are provided with the necessary granular data.

Secondly, it has been argued that intervention has been timid because the market has noted the possible unintended consequences of reform relating to market illiquidity.[50] The fact that repo and, to a lesser extent securities lending markets provide a valuable funding source, various commentators have suggested against reforming margin as it may result in impairing market liquidity.[51] It is said that any reform would result in higher margins, which would automatically impair the amount of credit a market participant could obtain.[52] The upshot of such reforms would ultimately be "a lower level of market liquidity… [which] could increase the fragility of the financial system" leading to less liquid and efficient markets.[53]

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46 Constancio (n 2). See also, Financial Stability Board (n 2) 1 at 25; Heremans and Pacces (n 13) 558 at 560; Raffan and Benjamin (n 13) 1 at 1; Thiemann *et al* (n 2) 259 at 259.
47 Financial Stability Board (n 32).
48 *Ibid.*
49 Thiemann *et al* (n 2) 259 at 270.
50 BIS Committee on the Global Financial System (n 3) 1 at 4.
51 Thiemann *et al* (n 2) 259 at 269-271.
52 BIS Committee on the Global Financial System (n 3) 1 at 4.
53 Thiemann *et al* (n 2) 259 at 269 - 271.

3 PRIVATE LAW

3.1 Introduction

When one maps the current state of the legal and regulatory framework regarding 'margin' within the EU shadow banking sector, the starting point is to view the sector as a whole. The EU shadow banking sector, and in particular the role of margin within collateral transactions, is regulated by rules stemming from various sources of law, namely public law, private law and self-regulation – each will be briefly discussed in turn.

Firstly, public law is a set of mandatory rules that govern the relationships between the state and general population in pursuit of public interest and distributive justice.[54] Public law relates to government-enforced regulation, principally through EU directives and regulations.[55] Secondly, because financial law is a "functional, pragmatic and non-dogmatic" area of law, EU financial law encompasses rules stemming from European legislative instruments, which have traditionally fallen under the public law umbrella.[56] Within this context, EU private law is often titled "regulatory private law".[57] However, regulatory private law does not start from the traditional position of freedom of contract or party autonomy,[58] but instead "is designed for achieving, fostering or managing" financial market objectives where the legal person functions in a pre-designed and regulatory autonomous role. One pertinent example is the Financial Collateral Directive,[59] which is an EU directive that is implemented into national private laws. Lastly, while legislative instruments originating from the public sector play an important role within the EU shadow banking sector, there also exist private sector rules, often argued to being a *Lex Mercatoria*[60] – a type of self-regulation, which is influenced by the regulat-

54 Public law is the topic of section 4 below. See also, M Hesselink, "The Structure of the New European Private Law" (2002) *6.4 Electronic Journal of Comparative Law*, available at: http://www.ejcl.org/64/art64-2.html; O Cherendnychenko, "Rediscovering the public/private divide in EU private law" (2019) *Eur Law J.* 1 at 1-2.

55 Although as will be shown, private law can also utilise legislative instruments. See also, Article 288 of the Treaty of the Functioning of the European Union 2012/C 326/01 OJ. C 326.

56 See generally, Hesselink (n 54).

57 H W Micklitz, "Administrative Enforcement of European Private Law" in R Brownsford, H W Micklitz and L Niglia, *Foundations of European Private Law* (2011) 563 at 563-564.

58 However, party autonomy and contractual freedom are the starting point for self-regulation, which will be discussed in greater detail below, see section 3.2 "Self-Regulation: *Lex Mercatoria*".

59 Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements ("FCD"). See also, Paech (n 30) 1 at 7.

60 Paraphrasing Anglo-German legal scholar Clive Schmitthoff, the Lex Mercatoria exists within the confines of the principle of party autonomy within private international law. The law of contract is based on party autonomy, therefore, no (advanced) legal system can object to parties making their contractual agreement 'self-regulatory'. See C Schmitthoff, "The

ory framework developed by, amongst others, EU authorities.[61] The primary example of this type of self-regulation are industry standard master agreements, including the GMRA for repos, the GMSLA for securities lending transactions and the Credit Support Annex under the ISDA master agreement for derivatives transactions.[62]

This section will therefore proceed by exploring the role of margin within the EU shadow banking sector in the context of self-regulation and regulatory private law – each will be explored in greater detail as follows.[63]

3.2 Self-Regulation: *Lex Mercatoria*

At the core of self-regulation lies the value that parties are free to pursue their goals and make their own choices without the need for government intervention. In other words, there is an element of *laissez nous faire* ('let us do it') when market participants enter into a private contractual relationship.[64] Such a system was discussed in the *Wealth of Nations* by Adam Smith in 1776, who uses the "invisible hand" metaphor to describe individuals' self-interested pursuit of wealth against the backdrop of minimal state intervention.[65] However, as noted by 21st Century commentators, such a system does not come without limits on economic liberties, which are those imposed by the government to prevent systemic risk and mitigate market failures, particularly negative externalities.[66]

In today's financial marketplace, there are indeed strong parallels with private sector rules and *laissez nous faire* via self-regulatory customs and practices. Self-regulation originated in the medieval period and, in many jurisdictions around the world, effective self-regulation existed before statutory regulation. A pertinent example is the *Lex Mercatoria*, where a form of com-

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Law of International Trade, its Growth, Formulation and Operation" (1964) in C Schmitthoff (ed) *The Sources of the Law of International Trade* 3 at 33. The *Lex Mercatoria* (self-regulation) will be discussed in this chapter further below, see section 3.2 "Self-Regulation: *Lex Mercatoria*".

61 This is particularly true in relation to the EMIR, which heavily interacts with the ISDA Credit Support Annex, as discussed below. See also, T Keijser, "Financial collateral arrangements in the European Union: current state and the way forward" (2017) 22 Unif. L. Rev. 258 at 260. See also, H Eidenmuller, "Lex Mercatoria, The ISDA Master Agreement, and Ius Cogens" (2015) in S Grundmann, F Moslein and K Riesenhuber (eds), *Contract Governance: Dimensions in Law and Interdisciplinary Research* (2015) 407 at 408-409.

62 'Self-regulation' and 'master agreements' will be explored further below. See also, M Haentjens and P de Gioia-Carabellese, European Banking and Financial Law (2020) 235.

63 Public law will be the focus of section 4 below.

64 J S Mill, Principles of Political Economy (1848).

65 A Smith, An Inquiry into the Nature and Causes of the Wealth of Nations (1776) 12-15, 400-401 and 436-437.

66 S Freeman, "Liberal and Illiberal Libertarianism" (2018) in J Brennan, B van der Vossen and D Schmidtz, The Routledge Handbook of Libertarianism, Chapter 8.

mercial law was used by merchants throughout Europe during the medieval period. It emphasised a system of custom and best practice based on freedom of contract, party autonomy and alienability of property.[67] During this period, it was recognised that those who were most familiar with the customs and practices of a particular sector were best suited to create, enforce and resolve those rules without government intervention.[68]

In the modern era, industry associations, such as the International Capital Markets Association ("ICMA"),[69] the International Securities Lending Association ("ISLA")[70] and the ISDA[71] provide important rules. They have a specialised and thorough knowledge of the inner workings of the financial markets and are responsible for developing self-regulatory customs and practices.[72] In particular, the industry associations "have been relatively successful in achieving certain degrees of standardisation in the design, governance, and regulation" of collateral transactions in the shadow banking sector by way of the master agreements.[73] In addition, market participants operating in the shadow banking sector have considerable business incentive to operate in a competitive, financially sound and fair marketplace. Competition and reputation and are powerful motivating forces for proper and sustained behaviour, especially in today's globalised environment where market participants have virtually immediate access to a range of competing markets and products. The threat of potential expulsion from an industry association for breach of its voluntary code is indeed an effective enforcement technique.[74] According to Anglo-German legal scholar, Clive Schmitthoff, self-regulation "in the context of international financial markets amounts in effect to recognition of the need to respect the *Lex Mercatoria*, in the form of standardised documenta-

67 J Matonis, "Lex Mercatoria: The Emergence of a Self-regulated Bitcoin" (28 May, 2012) Forbes.

68 G P Calliess, "Lex Mercatoria: A Reflective Law Guide to An Autonomous Legal System" (2001) 2 German Law Journal. See also, IOSCO, "Model for Effective Regulation" (May 2000) *Report of the SRO Consultative Committee* 1 at 3.

69 This is the industry association responsible for repurchase agreements and the publication of the Global Master Repurchase Agreement in the EU.

70 This is the industry association responsible for securities lending and the publication of the Global Master Securities Lending Agreement in the EU.

71 This is the industry association responsible for derivatives transactions and the publication of the International Swaps and Derivatives Association Master Agreement.

72 IOSCO (n 68) 1 at 4.

73 The master agreements will be briefly discussed below. See also, IOSCO (n 68) 1 at 4; H Nabilou and A Prum, "Shadow Banking in Europe: Idiosyncrasies and their Implications for Regulation" (2019) European Journal of Risk Regulation 781 at 785.

74 The threat of potential expulsion from an industry association for breach of its voluntary code is an effective enforcement technique despite being unenforceable in a court of law. On this, see J Benjamin and D Rouch, "The international financial markets as a source of global law: the privatisation of rule-making?" (2008) Law and Financial Markets Review 78 at 79. See also, IOSCO (n 68) 1 at 5.

tion… Hence, master agreements… are portrayed as exercising… valid claims to provide authoritative guidance".[75]

3.2.1 Master agreements

As discussed in Chapter 5, there is an extensive analysis of collateral transactions in practice and in particular, the role financial collateral and margin play within the relevant master agreements. For that reason, this section will not discuss the role of financial collateral or margin as it operates in the master agreements. The master agreements will therefore only be briefly discussed here.[76]

Master agreements[77] are standardised documents "fondly referred to by… insiders as a piece of private legislation".[78] These documents outline the respective contractual terms of a repo, securities lending and/or derivatives transaction between parties and are important legal tools providing adjudication, enforcement and defining rules by which market participants must adhere.[79] According to IOSCO, master agreements allow for a "flexible, effective and efficient means to provide the necessary protections in today's ever-changing global" and financial marketplace.[80] Their existence enables market participants to swiftly adapt to changing market conditions and business needs.[81] This is especially important given that advances in technology ensure financial markets remain increasingly global and trade is conducted without regard to national boundaries. Significantly, master agreements adapt to financial innovation in ways that national and regional regulation cannot, with transactions crossing national boundaries, often where regulatory powers cannot.[82] By their very nature, master agreements allow greater flexibility for market participants to tailor their agreement, such as the type and amount of financial collateral, the appropriate margin/haircut levels and events of default.[83]

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75 Schmitthoff (n 60) 3 at 33. See also, Eidenmuller (n 61) 407 at 408-409; B Muscat, Insolvency Close-out Netting: A Comparative Study of English, French and US Law in a Global Perspective (2020) 1 at 44.

76 For an in-depth discussion of the master agreements and related issues, such as property law, choice of law and conflict of laws, see generally Chapters 3 and 5.

77 Including the Global Master Repurchase Agreement ("GMRA") for repurchase agreements, the Global Master Securities Lending Agreement ("GMSLA") for securities lending transactions and the International Swaps and Derivative Association ("ISDA") Credit Support Annex under the ISDA Master Agreement for derivatives transactions.

78 K Pistor, The Code of Capital (2019) 146.

79 Benjamin and Rouch (n 74) 78 at 79.

80 IOSCO (n 68) 1 at 2. See also, Eidenmuller (n 61) 407 at 407.

81 Ibid.

82 IOSCO (n 68) 1 at 5 and 12.

83 Pistor (n 78) 145. In addition, Chapter 5 extensively discusses the relevant provisions under the master agreements and in particular the use of financial collateral, margin and choice of law clause.

A cause for concern, however, is the potential risks that could arise in respect of the substantial flexibility market participants have in tailoring agreements. Contractual clauses, which are drafted by market participants who have an intimate knowledge of the market, do so with a view to maximising benefits whilst minimising costs. The fact that self-interest is a central human paradigm, profit maximising market participants rarely take into account the broader economic and societal issues when entering into a transaction. One only has to look to the Global Financial Crisis, and in particular the systemic risk rising out of financial collateral, margin and leverage to fully grasp the broader systemic issues.[84]

3.3 Interplay Between the Private Sector and Public Law

As a result of the Global Financial Crisis, the interplay between the private sector, regulatory private law and public law indicates that there is now a growing synergy between these sources of law. There has indeed been a marked increase in industry engagement, seen in discussions surrounding global convergence, which has stimulated consideration of convergence in issues associated with collateral transactions, such as that related to mandatory margin requirements.[85] For example, as a result of the changing regulatory landscape, there is now considerable interplay between the ISDA Credit Support Annexes and the EMIR/RTS. Because many market participants in the EU now have to be regulatory compliant when collateralising a derivatives transaction, it is helpful that ISDA, in 2016, published new Credit Support Annexes designed to accommodate new regulatory requirements. Given that many current open transactions underpinned by the 1995 ISDA Credit Support Annex are not regulatory compliant, it was concluded that new Credit Support Annexes for initial and variation margin be prepared to provide market participants with a quick and efficient means of complying with new EMIR/RTS standards.[86] The 2016 Initial and Variation Margin Credit Support Annexes are, therefore, updated versions of the 1995 ISDA Credit Support Annex, which allows (new and existing) parties to establish the applicable financial collateral and margin requirements compatible with the EMIR/RTS.[87] Sadly, the same level of engagement has yet to be reached with regard to privately negotiated repo and securities lending transactions.

84 IOSCO (n 68) 1 at 4.
85 Benjamin and Rouch (n 74) 78 at 80.
86 Harding and Harding (n 17) 42 and 105.
87 See the ISDA website: https://www.isda.org/book/2016-credit-support-annex-for-variation-margin-english-pdf/. It should also be observed that initial margin is, at the time of writing (13 May 2020), still being phased in until 1 September 2022 – it is therefore possible that ISDA will issue further CSAs with regard to initial margin.

3.4 Financial Collateral Directive

The Financial Collateral Directive was discussed in detail in Chapter 3. Topics within the Financial Collateral Directive such as the types of financial collateral (cash, financial instruments and credit claims), the personal and material scope of the Financial Collateral Directive (including property law (title transfer and security interest) and possession and control) and conflict of laws, will not be discussed again in this section.[88]

Instead, this section will focus on the extent by which collateral transactions and margin benefits from special insolvency treatment, which is covered in Articles 7 and 8 of the Financial Collateral Directive.[89] In particular, Article 7 of the Financial Collateral Directive relates to the application of close-out netting despite insolvency and Article 8 of the Financial Collateral Directive relates to the application of margin despite insolvency. Before exploring this special insolvency treatment however, it may first be helpful to outline traditional insolvency proceedings, broadly speaking.[90] This will prove a useful benchmark when coming to discuss special insolvency proceedings.

3.4.1 Traditional insolvency law

Under traditional insolvency law principles, all open contracts entered into by the insolvent party and its counterparties are immediately 'stayed'. This means that the insolvent party and its counterparties are no longer able to perform their contractual obligations. The intention behind this principle is two-fold. Firstly, to avoid a run by creditors on the insolvent party's estate. Secondly, to keep the value inside the insolvent estate, and, in many jurisdictions, to even allow the insolvency administrator to increase the value of the insolvent estate by 'cherry picking' and executing favourable contracts.[91] The reasoning of the last element is in place to increase the amount available for sharing between the general creditors.[92] The primary objective in traditional insolvency proceedings is to maximise the value of assets of the failed firm in the interest of creditors.

88 For a discussion of these topics, refer to Chapter 3.

89 Paech (n 30) 1 at 7.

90 The term 'insolvency' relates to a financial state of being – one that is reached when it is no longer possible to pay off debts. The term 'insolvency' can be distinguished from the term 'default', which describes the situation where there has been a failure to meet an obligation.

91 F Garcimartin and M Isabel Saez, "Set-off, netting and close-out netting", in M Haentjens and B Wessels, Research Handbook on Crisis Management in the Banking Sector (2015) 331 at 337.

92 Paech (n 30) 1 at 36-38.

3.4.2 Special insolvency treatment

> *"Representatives of derivatives traders, the modern captains of finance, successfully lobbied the legislatures in more than fifty countries to amend their bankruptcy codes and create a "safe harbor" for derivatives and repos* [and securities lending], *thereby exempting these financial assets from rules that are binding for everyone else"*[93] [emphasis added].

There are a number of financial contracts, such as collateral transactions, which are generally understood to be of a special character, and as such, the 'automatic stay' of the traditional insolvency principles outlined above do not apply as they are believed to do more harm than good. This means that the normal risk adjustment process of posting sufficient financial collateral and margining techniques are no longer applicable once the 'stay' is engaged. The main reason for this special treatment (safe harbour) is because collateral transactions are prone to carry risk that may quickly become incalculable when the insolvency stay is engaged.[94] The concern is that because collateral transactions are generally of high value and because traditional insolvency proceedings often take many years to conclude, open transactions subject to an insolvency stay puts the solvent party at risk of becoming heavily under-secured.[95] It has been argued that the "prompt liquidation of an insolvent's position is generally desirable to minimize the potentially massive losses and chain reaction of insolvencies that could occur if the market were to move sharply in the wrong direction".[96] Unsurprisingly, this volatility may (and generally does) trigger systemic consequences, which is why parties to the collateral transaction are exempted from the traditional automatic insolvency stay that would often apply under general property and insolvency laws.[97]

Figure 14 below provides an illustration of the core aspects of the special insolvency treatment for collateral transactions found within Articles 7 (close-out netting) and 8 (margining) of the Financial Collateral Directive. Each will be discussed in turn.

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93 Pistor (n 78) 144-145.

94 *Ibid* at 148.

95 Paech (n 30) 1 at 36-38.

96 F R Edwards and E R Morrison, "Derivatives and the Bankruptcy Code: Why the Special Treatment?" (2005) *Working Paper Series No. 258 Columbia law School* 1 at 7.

97 ISDA, "Challenges with Expanding BRRD Moratoria Powers" (August, 2017). See also, European Parliament legislative resolution of 16 April on the proposal for a directive of the European Parliament and of the Council amending Directive 2014/59/EU (16 April, 2019); Paech (n 30) 1 at 36-39; European Commission, "Press Release: EU Banking Reform: Strong Banks to Support Growth and Restore Confidence" (23 November, 2016), available at: http://europa.ei/rapid/press-relaese_IP-16-3731_en.htm; M Haentjens, Y Diamant, J Siena, R Spence and A Zacaroli, *Financial Collateral: Law and Practice* (2020) 286.

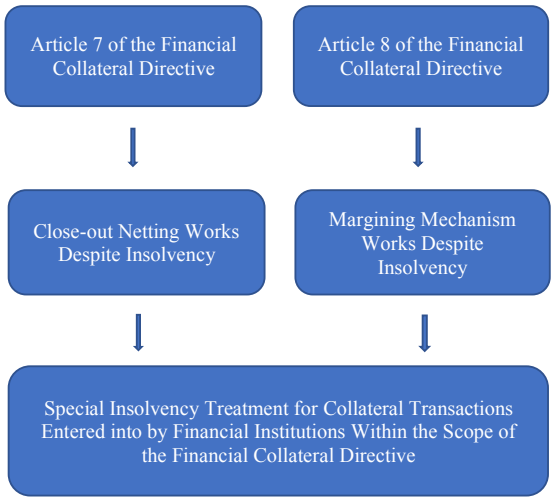

Figure 14: Article 7 and 8 of the Financial Collateral Directive

3.4.3 *Close-out netting*

The purpose of close-out netting is to reduce the exposures on open contracts should a party become insolvent during the lifecycle of the contract. Close-out netting thus operates by way of forming an agreement that typically allows the solvent party to terminate all contracts between parties, calculate the losses and gains on each contract, and then set them off so that a single balance is owing.[98] This is the 'net' amount.[99]

Collateral transactions are therefore usually dealt with *en-masse* from a capital requirement and risk management perspective. For instance, it is not uncommon for party A and party B to have many outstanding mutual obligations through various collateral transactions. It would arguably be cheaper and more efficient to assess the relevant risk, post adequate financial collateral/margin and calculate the necessary underlying capital if these transactions are dealt with on an aggregate basis.[100]

As noted above in section 3.4.2, collateral transactions covered by close-out netting are often protected by 'safe harbours', meaning that these transactions are shielded from traditional insolvency law rules that would otherwise be

98 Garcimartin and Isabel Saez (n 91) 331 at 331-333. See also the legal definition of close-out netting under Article 2 (1) (98) of Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms; Article 2 (1) (n) (i) of FCD.

99 Close-out netting can be distinguished from 'set-off'. 'Set-off' refers to a settlement of mutual debt between a creditor and a debtor through offsetting transaction claims. See also generally, Muscat (n 75); Haentjens *et al* (n 97) 316.

100 Paech (n 30) 1 at 36-39.

applicable. These safe harbours thus serve to protect the parties' enforcement of the contractual arrangements against insolvency law. Close-out netting is thereby said to have a practical effect comparable to a 'super priority' in that it is exempted to some extent from the equal treatment of creditors *(pari passu)* because of set-off, which results in full payment of claims.[101]

The natural playing field of close-out netting provisions are the industry standard master agreements, which contain clauses for contractual termination and liquidation of the specific transaction as one of their most important elements.[102] Bankruptcy is indeed a triggering event that allows the non-defaulting party to 'close-out' all outstanding claims.[103] The non-defaulting party does not have to wait, there is no concern for other creditors and no consideration is given to reorganising the defaulting debtor.[104] In addition, provided the parties are within scope,[105] the protection of close-out netting against the commencement of traditional insolvency proceedings is also enforced under Article 7 of the Financial Collateral Directive. The global importance of close-out netting cannot be overemphasised. Virtually all entities operating in the shadow banking sector cover virtually all collateral transactions with a close-out netting provision. Close-out netting is, therefore, a crucial form of protection.

Close-out netting is therefore viewed by market participants as an important risk mitigation tool that reduces the exposures to a counterparty and, as a consequence, counterparty risk. In particular, close-out netting has been argued to reduce systemic risk in the financial markets. The derivatives market, for instance, has expanded significantly over the past decades. Because derivative transactions are systemically risky, primarily due to the value of the derivative contract being derived from the underlying asset – which can cause the value of the derivative contract to substantially fluctuate – defaults in the derivatives markets are perceived to cause systemic damage to the financial markets. Close-out netting can therefore "reduce the gross exposures incurred

101 Garcimartin and Isabel Saez (n 91) 331 at 337. See also, Article 8 of FCD; G Yeowart, R Parsons, E Murray and H Patrick, *The Law of Financial Collateral* (2016) 436-438; UNIDROIT, *Principles on the Operation of Close-out Netting Provisions* (2013), Principle 7 on the Operation of Close-out Netting Provisions in Insolvency and Resolution; Haentjens *et al* (n 97) 286; R J Mokal, "Liquidity, Systemic Risk and the Bankruptcy Treatment of Financial Contracts" (2015) *Brooklyn Journal of Corporate, Financial and Commercial Law* 1 at 20.

102 Paragraph 10 of the GMRA 2011; Paragraph 11 GMSLA 2010; Paragraphs 4 (b) and 6, 1995 ISDA English Law CSA and Paragraphs 4 (b) and 6, 2016 English Law CSA for Variation Margin. See also, Garcimartin and Isabel Saez (n 91) 331 at 337. Also, please see preceding sections above for the respective close-out netting provisions and how they operate under the respective master agreement.

103 *Ibid.*

104 Pistor (n 78) 147 and 149.

105 This relates to both 'material' scope and 'personal' scope under the Financial Collateral Directive. See Chapter 3 for a more in-depth discussion.

in derivative transactions to net exposure and, consequently, the systemic risk in the derivatives market is reduced".[106]

According to Haentjens and others, *Figure 15* below illustrates that the notional amount of outstanding OTC derivative contracts by end December 2018 was USD 544 trillion, the gross credit exposure was USD 2.3 trillion and the gross market value (the cost of replacing the derivative contract at market value) was USD 9.7 trillion.[107] by deducting the gross credit exposure from the gross market value reflects valid and enforceable close-out netting arrangements and importantly, these calculations show that close-out netting can significantly reduce counterparty exposure, by approximately 75%, which consequently has a positive effect on financial stability.[108]

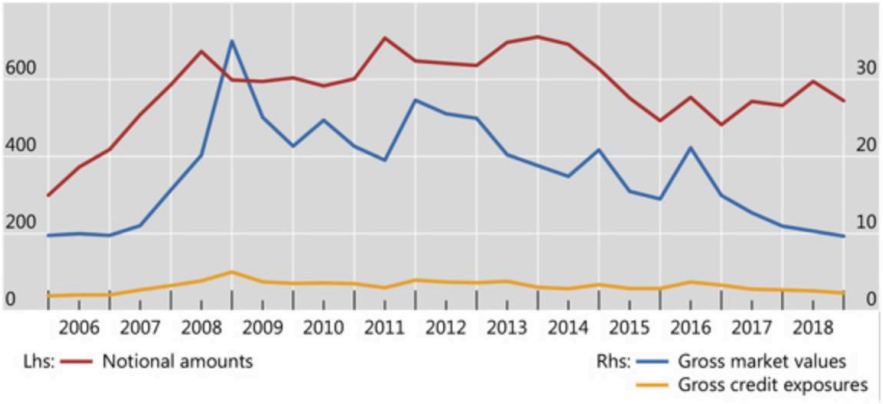

Figure 15: Outstanding OTC Derivatives Amounts
Source: Bank for International Settlements[109]

3.4.3.1 Close-out netting: some observations

However, despite close-out netting being a crucial form of protection, it does raise concerns. In particular, close-out netting has been argued to give rise to a moral hazard problem. Moral hazard occurs when an entity has incentive to increase its risk exposure knowing it will not bear the full costs of that risk. The risk in this instance relates to over-lending and excessive leverage due

106 Haentjens *et al* (n 97) 317. See also, Pistor (n 78) 149; D L Mengle, "Close-Out Netting and Risk Management in Over-the-Counter Derivatives" (2010) *ISDA and Fordham University* 1 at 10; Mokal (n 101) 1 at 25.

107 Haentjens *et al* (n 97) 287. See also generally, Bank for International Settlements, "Statistical release: OTC derivatives statistics at end December 2018" (2 May, 2019), available at: https://www.bis.org/publ/otc_hy1905.pdf.

108 Haentjens *et al* (n 97) 316-317.

109 See generally, Bank for International Settlements (n 107). See also initial inspiration, Haentjens *et al* (n 97) 286-287.

to low *ex-ante* margin requirements.[110] Intuitively, close-out netting gives a 'super-priority' to certain market participants at the expense of the "priority rights of creditors and subordinated trade creditors, as well as claims of employees and other ordinary creditors.[111] Why, then, would parties in the EU shadow banking sector not want to maximise their benefits (through lending and leverage) and enter into a transaction, ensuring 'super-priority' status, "if all it takes is tweaking a contract?"[112] Significantly, an enforceable close-out netting provision insulates and allows non-defaulting parties to exit the transaction quicker than everyone else.[113] The priority given to these market participants creates a moral hazard problem because it "reduces the incentives… to monitor risk taking".[114] This is particularly true given the expense to other creditors of the insolvent estate – whose available assets would be significantly reduced and the value of the estate somewhat eroded.[115] Consequently, Katarina Pistor has argued that while there are obvious benefits of close-out netting, it equally "helped deepen the crisis".[116]

In response to the potential adverse effects posed by close-out netting since the Global Financial Crisis, the European legislature has been slowly introducing measures to limit the use of close-out netting.[117] For example, the Bank Recovery and Resolution Directive[118] has introduced moratorium powers, which gives power to resolution authorities to suspend payment or delivery obligations, pursuant to any contract to which an institution in resolution is party, for a fixed period of two business days (in practice, this is generally over the weekend – from Friday to Monday).[119] In addition, on 23 November 2016, the European Commission published proposed amendments

110 Pistor (n 78) 149 and 207.
111 *Ibid* 149.
112 *Ibid.*
113 Bank for International Settlements, "Report on OTC Derivatives: Settlement procedures and counterparty risk management" (1998) *CPSS Publications* 1 at 2.
114 Mengle (n 106) 1 at 11.
115 Edwards and Morrison (n 96) 1 at 17. See also, Mokal (n 101) 1 at 29.
116 Pistor (n 78) 149.
117 European Commission, Proposal for a Directive of the European Parliament and of the Council amending Directive 2014/59/EU on loss-absorbing and recapitalisation capacity of credit institutions and investment firms and amending Directive 98/26/EC, Directive 2002/47/EC, Directive 2012/30/EU, Directive 2011/35/EU, Directive 2005/56/EC, Directive 2004/25/EC and Directive 2007/36/EC (23 November 2016).
118 Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council ("BRRD").
119 Recital 27 of Directive (EU) 2019/879 of the European Parliament and of the Council of 20 May 2019 amending Directive 2014/59/EU as regards the loss-absorbing and recapitalisation capacity of credit institutions and investment firms and Directive 98/26/EC ("BRRD 2"). See also, Article 69 of BRRD.

to these moratorium powers by increasing the moratorium period from two working days to five working days.[120] These moratorium powers do undermine and challenge the effectiveness of financial netting and collateral arrangements, by removing the protection of close-out netting provided by the Financial Collateral Directive (and potentially the master agreements – provided parties are within the scope of the Financial Collateral Directive and the Bank Recovery and Resolution Directive).[121]

Importantly, ISDA have noted that the moratorium powers are said to "pose significant challenges to financial stability, and introduce new levels of uncertainty" into the marketplace, leaving counterparties significantly underexposed for a prolonged period of time.[122] Yet on the other hand, not every collateral transaction raises systemic concerns. It is therefore a somewhat biased view that every transaction which carries an enforceable close-out netting provision gives priority to one party over another. This is especially true given that not every transaction is systemically risky and, therefore, actually warrants priority. It is therefore the author's view that a more balanced approach to close-out netting should also be considered; one that balances the interests of the party under resolution against the systemic interests of the counterparties who rely on close-out netting to mitigate their risk exposure.[123] Such an approach would ensure that parties to the transaction would measure risk accordingly, namely mitigating over lending and excessive leverage by posting appropriately higher margin levels at the point of trade.

3.4.4 Margining

The second aspect of the special insolvency treatment relates to Article 8 of the Financial Collateral Directive and in particular the issue of margin. Under traditional insolvency principles, the insolvency court has the power to prevent collateral/margin transfers that occurred shortly prior to insolvency. According to Phillip Paech, this is generally within three months of insolvency, but the precise time horizon does depend on applicable national bankruptcy laws.[124] The reason is that such transfers are regarded as giving preferential treatment

120 European Commission, Proposal for a Directive of the European Parliament and of the Council amending Directive 2014/59/EU on loss-absorbing and recapitalisation capacity of credit institutions and investment firms and amending Directive 98/26/EC, Directive 2002/47/EC, Directive 2012/30/EU, Directive 2011/35/EU, Directive 2005/56/EC, Directive 2004/25/EC and Directive 2007/36/EC (23 November 2016) 1 at 4.

121 Moratorium powers only apply to parties within the scope of the BRRD, it does not apply to every collateral transaction as certain parties are not within the scope of the BRRD.

122 ISDA (n 97). See also, Paech (n 30) 1 at 36-39; European Commission (n 97); Pistor (n 78) 149.

123 Edwards and Morrison (n 96) 1 at 8. See also, European Banking Federation, "Solvent Wind-down of Derivatives and Trading Portfolios" (26 July, 2019) 1 at 4, available at: https://www.fsb.org/wp-content/uploads/EBF-2.pdf.

124 Paech (n 30) 1 at 9.

to the relevant collateral taker *vis-à-vis* the other creditors of the insolvent estate. However, for the reasons discussed above, under section 3.4.2 '*Special insolvency treatment*', "certain insolvency provisions are disapplied".[125] Specifically, the special insolvency treatment extends to collateral/margin being provided shortly before insolvency as enforced in Article 8 of the Financial Collateral Directive. According to the wording of the Financial Collateral Directive under Article 8 (3) (a) and (b), where there is:

> *"(a) an obligation to provide financial collateral or additional financial collateral in order to take account of changes in the value of the financial collateral or in the amount of the relevant financial obligations, or*
>
> *(b) a right to withdraw financial collateral on providing, by way of substitution or exchange, financial collateral of substantially the same value,*
>
> *Member States shall ensure that the provision of financial collateral, additional financial collateral or substitute or replacement financial collateral… shall not be treated as invalid or reversed or declared void".*[126]

Similar to preceding section 3.4.3 on *'Close-out netting'*, in order for parties to benefit from Article 8 and the insolvency protection afforded under the Financial Collateral Directive, they have to be within the scope of the directive.[127]

4 PUBLIC LAW

The Global Financial Crisis has triggered a seismic shift in the way the shadow banking sector is to be regulated. While it is laudable that the public sector is attempting to transform "shadow banking into a resilient market-based financial system" via the introduction of various directives and regulations,[128] it is equally true that the public sector has much work to do.[129] The term 'public sector' in this context relates to public law (administrative law) and the implementation of government-enforced legislation, such as European

125 Article 8 FCD.
126 Article 8 (3) (a) and (b) FCD.
127 For an in-depth discussion in relation to material' scope and 'personal' scope under the Financial Collateral Directive, see Chapter 3.
128 Although as noted previously, directives and regulations can also be rooted in private law.
129 Financial Stability Board, "Transforming Shadow Banking into Resilient Market-based Finance: Re-hypothecation and collateral re-use: Potential financial stability issues, market evolution and regulatory approaches" (25 January, 2017). See also, A Moreira and A Savov, "Shadow banking and the economy" (2014) *CEPR Policy Portal*, available at: https://voxeu.org/article/shadow-banking-and-economy.

directives (which are transposed into national law) and regulations (which have direct effect and are directly applicable in all EU Member States).[130]

As previously noted, the purpose of financial regulation is to preserve financial stability, mitigate systemic risk and prevent market failures.[131] Because a failure of financial regulation is often cited as one of the main causes of the crisis, and considering the procyclical effects of margin were a source of systemic risk during the crisis, it is unfortunate that this is an issue yet to be substantially tackled. It has been over a decade since the Global Financial Crisis and while some regulatory progress has been made, there is still, however, "no unified regulatory framework in the EU level that governs the settings of margins and haircuts for all non-centrally… cleared transactions, derivatives and SFTs" in the shadow banking sector.[132]

However, despite there being no overarching EU regulatory framework in relation to margin within the shadow banking sector, margin is still addressed, directly and indirectly, in several parts of the EU regulatory framework. A key example of margin being addressed *directly* is EMIR and the accompanying RTS, which have arguably made significant progress in relation to mandatory margin requirements and has therefore been described as a "milestone" for making the derivatives markets in the EU safer.[133] Other forms of *indirect* public law intervention, such as the Securities Financing Transactions Regulation ("SFTR")[134] and provisions in the Alternative Investment Fund Managers Directive ("AIFMD")[135] and the Undertakings for Collective Investments in Transferable Securities ("UCITS") Directive[136] concerning leverage levels, which can have the same effect as implementing mandatory margin requirements, have sadly been less convincing.[137] This section will therefore proceed by mapping the current state of the EU regulatory framework and

130 Article 288 of the Treaty on the Functioning of the European Union 2012/C 326/01 OJ. C 326.

131 J Armour, D Awrey, P Davies, L Enriques, J N Gordon, C Mayer and J Payne, *Principles of Financial Regulation* (2016) 51.

132 European Systemic Risk Board (n 26) 1 at 42.

133 European Systemic Risk Board, "Revision of the European Market Infrastructure Regulation" (2017) 1 at 2 and 5, available at: https://www.esrb.europa.eu/pub/pdf/other/20170421_esrb_emir.en.pdf.

134 Regulation (EU) 2015/2365 of the European Parliament and of the Council of 25 November 2015 on transparency of securities financing transactions and of reuse and amending Regulation (EU) No 648/2012 ("SFTR").

135 Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU No 1095/2010) ("AIFMD").

136 Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities ("UCITS").

137 As to how leverage can have the same effect as implementing mandatory margin requirements will be discussed below. See also, European Systemic Risk Board (n 26) 1 at 55.

exploring the aforementioned directives and regulations in relation to margin within the shadow banking sector.

4.1 EMIR: Central Counterparty Clearing

Since the 2007/2008 Global Financial Crisis, and in accordance with the 2009 G20 Pittsburgh Summit,[138] an increasing number of jurisdictions, including the EU, require "all standardised OTC derivatives contracts to be cleared… [and settled] through a" central counterparty ("CCP").[139] Commentators often argue that because "derivatives contracts… are systemically risky and, indeed, were a cause of the financial crisis", mandatory CCP clearing is justified as a means to reduce systemic risk.[140] In particular, the existing CCP regulatory framework under EMIR consists of various measures explicitly designed to reduce systemic risk, namely "prudential requirements" including liquidity and capital requirements, initial and variation margins and mechanisms for loss sharing.[141] Significantly, as a way to reduce systemic risk, "mitigating procyclicality of margin requirements in derivatives transactions has been a major policy objective in regulating CCPs".[142] However, it should also be noted that mandatory CCP clearing is not a watertight solution. In fact, there is "clear consensus in the financial markets that CCPs do not eliminate risk, they just reallocate it and most likely centralize it" leading to CCPs themselves becoming the main hub for risk.[143]

4.1.1 Defining 'clearing', 'settlement' and a 'CCP'

A 'CCP' is typically a well-capitalised entity "that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer" – thus ensuring the

138 G20 Leaders' Statement (n 16).

139 The definition of a 'CCP', 'clearing' and 'settlement' will be analysed in greater detail below. See also, Recitals 5 and 98 of EMIR. In addition, the USA impose mandatory CCP clearing on certain transaction through Title VII of the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act.

140 S L Schwarcz, "Central Clearing of Financial Contracts: Theory and Regulatory Implications" (2019) *167 (6) University of Pennsylvania Law Review* 1327 at 1330-1333.

141 See generally, Articles 16 and 40-50 EMIR.

142 These risk mitigation methods will be discussed in greater detail below. See also, H Nabilou and I G Asimakopoulos, "In CCP we trust… or do we? Assessing the regulation of central clearing counterparties in Europe" (2020) 15 (1) *Capital Markets Law Journal* 70 at 71.

143 These risks will be discussed in greater detail below. See also, Nabilou and Asimakopoulos (n 142) 70 at 77.

performance of open contracts.[144] 'Clearing' refers to the activities and processes carried out between trade and settlement. It is a post-trade mechanism and involves "the process of transmitting, reconciling and, in some cases, confirming transactions prior to settlement, potentially including the netting of transactions and the establishment of final positions for settlement… This term also refers to the balancing of profits and losses and the daily calculation of collateral" and margin.[145] Settlement can be defined as "the discharge of an obligation in accordance with the terms of the underlying contract".[146] A contract is deemed to be cleared when the performance of the seller and the buyer is guaranteed and settled by the CCP.[147]

4.1.2 Modus operandi of central counterparty clearing

In its simplest form, a CCP interposes itself between the contracting parties to a collateral transaction.[148] This means that no direct contract exists between the original contracting parties (as in a bilateral transaction[149]) but rather, two separate contracts exist with the CCP and each counterparty (clearing member[150]). The CCP is therefore the primary counterparty on both sides of the contract – "the buyer to every seller and the seller to every buyer".[151] As a result, The CCP legally assumes all contractual rights, obligations and risks arising from the contract. The legal process whereby the CCP is positioned between the buyer and the seller is known as 'novation', which is the replace-

144 Article 2 (1) EMIR. See also, The Committee on Payment and Settlement Systems, "A Glossary of Terms Used in Payments and Settlement Systems" (2016) 1 at 3, available at: https://www.bis.org/dcms/glossary/glossary.pdf?scope=CPMI&base=term. CCPs include European Central Counterparty N.V., KDPW_CCP and Keler CCP to name but a few. For an exhaustive list, see ESMA, "List of Central Counterparties authorised to offer services and activities in the EU" (9 April, 2020), available at: https://www.esma.europa.eu/sites/default/files/library/ccps_authorised_under_emir.pdf.

145 The Committee on Payment and Settlement Systems (n 144) 1 at 4. See also, Article 2 (3) EMIR. In addition, clearing entities include Eurex Clearing, Nasdaq OMX Clearing AB and LME Clear Ltd to name but a few.

146 The Committee on Payment and Settlement Systems (n 144) 1 at 16.

147 For convenience, the phrase 'CCP clearing' will be used hereinafter to refer to contracts that are cleared and settled through a CCP. See also, Nabilou and Asimakopoulos (n 142) 70 at 71.

148 It should be noted that CCP clearing can apply to all collateral transactions, however, only standardised derivatives require mandatory central clearing. In addition, CCPs also perform various other functions, such as collateral management and margin – these will be discussed in greater detail below. See also, A G Balmer, *Regulating Financial Derivatives: Clearing and Central Counterparties* (2018) 45.

149 See Chapter 5 for an overview of a bilateral transaction.

150 The term 'clearing member' will be discussed below.

151 R R Bliss and R S Steigerwald, "Derivatives clearing and settlement: A comparison of central counterparties and alternative structures" (2006) *Economic Perspectives* 22 at 24. See also, The Committee on Payment and Settlement Systems (n 144) 1 at 3; Schwarcz (n 140) 1327 at 1329-1330; Article 2 (1) EMIR.

ment of one contract with one or more contracts.[152] As depicted in *Figure 16* below, the CCP replaces "the web of bilateral transactions with a hub-and-spoke structure that has the CCP at the centre".[153]

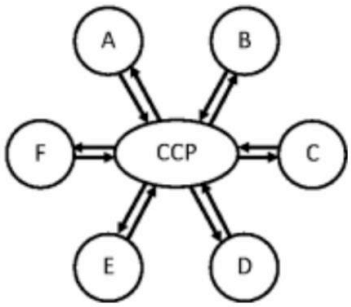

Figure 16: Hub-and-Spoke CCP Structure[154]

Since a CCP legally assumes all rights, obligations and risks arising from the contract, it must, for its own and other members' sake, carefully vet all counterparties. For this reason, CCPs only deal with creditworthy and well capitalised counterparties who have the capacity to undertake all operational aspects required (such as the posting of high-quality collateral,[155] initial and variation margin requirements[156] and default fund contributions[157]) – these entities are referred to as 'clearing members'. In order to conduct a cleared transaction, clearing members have 'clients', who will then conduct the trade on behalf of their client through the CCP. Building from *Figure 16* above, a visual example depicted in *Figure 17* below helps illustrate how the client, clearing member and CCP process operates in practice.

152 J Gregory, *Counterparty Credit Risk: The new challenge for global financial markets* (2010) 373. See also, Balmer (n 148) 39.
153 For an in-depth discussion about how bilateral collateral transactions operate, see Chapter 5. See also, European Systemic Risk Board (n 26) 1 at 23.
154 Gregory (n 152) Chapter 6 (generally).
155 Article 46 (1) EMIR.
156 Article 41 EMIR.
157 Article 45 (2) EMIR.

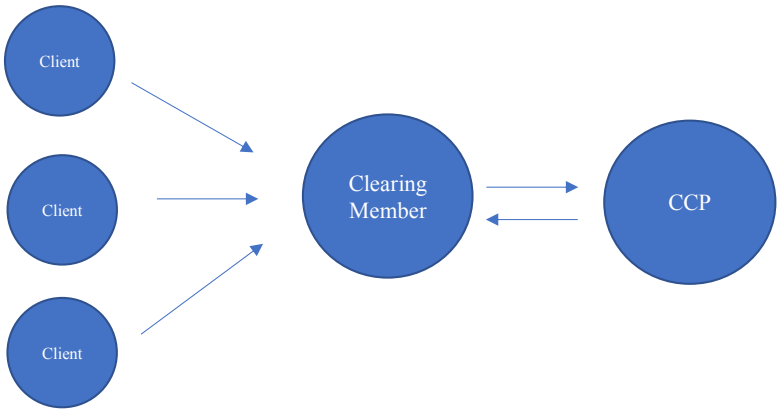

Figure 17: Correlation between CCP, Clearing Member and Client

Figure 18 below illustrates the way by which clearing members transact with a CCP. As a starting point, it is important to note that the CCP functions on the basis of a 'matched-book'. Namely, every position the CCP takes on the asset side of the balance sheet is off-set and matched by an opposite position on the liability side of the balance sheet.[158] For example, a transaction that is cleared through a CCP consists of two transactional legs. In the opening leg of the transaction, party A enters into a contract with the CCP by, for example, providing cash to the CCP; in return, the CCP provides financial collateral to party A. Simultaneously, Party B enters into a contract with the CCP by providing financial collateral to the CCP; in return, the CCP provides cash to party B.

Additionally, CCPs require the mutual posting (by party A and party B) of initial margin to account for the risk that each respective party brings to the CCP by having its trade cleared there.[159] As noted in previous chapters, initial margin is posted at the point of trade and is predetermined, fixed value cash or non-cash financial collateral with the objective of protecting the CCP from contractual non-performance. In practice, initial margin is in place to cover the loss that a CCP may sustain if it requires to wind down or liquidate a portfolio of a defaulting member. After doing due diligence, the onus is on the CCP to make an assessment on a case-by-case basis, of the potential future loss that it may sustain.[160] Issues such as counterparty risk, credit and market risk and potential procyclicality are all taken into consideration when determining initial margin levels.[161] For instance, the higher the initial margin

158 Nabilou and Asimakopoulos (n 142) 70 at 74.
159 D Domanski, L Gambacorta and C Picillo, "Central clearing: trends and current issues" (2015) *BIS Quarterly Review* 59 at 60-61.
160 Article 41 (2) EMIR.
161 R Heckinger, R T Cox and D Marshall, "Cleared margin setting at selected CCPs" (2016) *4 Economic Perspectives* 1 at 6.

the riskier the transaction and the lower the initial margin the less risk involved.

In the closing leg of the transaction, there is a commitment by party A, party B and the CCP to redeliver the respective contracted for assets. For example, party A will provide the CCP with financial collateral and in return, the CCP will provide party A with cash. Simultaneously, party B will provide the CCP with cash and in return, the CCP will redeliver financial collateral. Finally, the CCP will redeliver any initial or variation margin.[162] On top of this, the clearing members bear the costs of transacting through a CCP. This is generally charged per cleared transaction. Often, clearing members are also required to pay a one-off admission fee as well as an annual membership fee.[163]

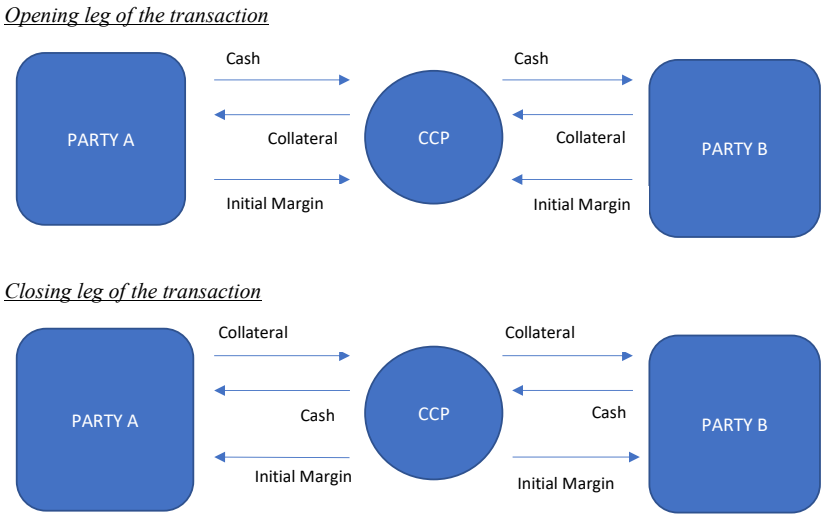

Figure 18[164]

4.1.3 *Variation margin*

In addition to posting initial margin, party A and party B may also be asked, often daily, to post variation margin following the mark-to-market valuation

162 Variation margin will be discussed below, see section 4.1.3 "*Variation margin*".

163 J Capel, M Hendrikx, A Hondius, A Kosse, T T Man and M Wennekes, "All the Ins & Outs of CCPs" (2013) *De Nederlandsche Bank* 1 at 16.

164 A Miglietta, C Picillo and M Pietrunti, "The impact of CCPs' margin policies on repo markets" (2015) 515 BIS Working Papers 1 at 7, available at: https://www.bis.org/publ/work515.pdf.

of individual positions *vis-à-vis* the CCP.[165] As noted in previous chapters, mark-to-market addresses daily shifts in valuation and are payments from the clearing member to the CCP (or vice versa) to manage and mitigate risk exposure. As noted by Eurex Clearing, variation margin is posted by either the CCP or the clearing member to ensure the "daily settlement of profits and losses".[166] *Figure 19* below provides a working example and illustrates that in practice, following a mark-to-market valuation, if a party is 'out of the money' then the counterparty must post variation margin to the affected party (see *Figure 19* below – party A to CCP). Conversely, if a party is 'in the money', then that party must return the appropriate amount, via variation margin, to the affected party (see *Figure 19* below – CCP to party B).[167]

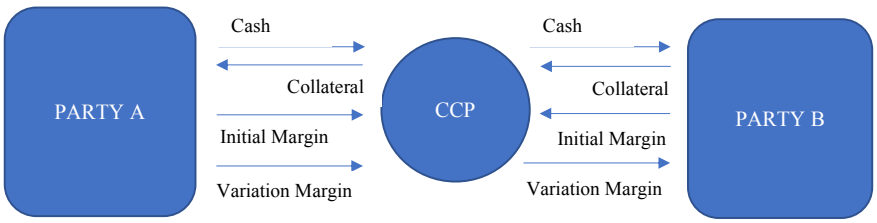

Figure 19

Figures 17, 18 and *19* above illustrate the basic operational steps that take place when parties have their trade cleared through a CCP. Given the importance of such transactions, and in order to gain a better understanding of why mandatory CCP clearing is being recommended as a way to mandatorily implement margin requirements in the EU shadow banking sector, a deeper analysis into CCPs' risk mitigation framework is necessary.

4.1.4 Risk mitigation

A crucial role of a CCP is to monitor and manage counterparty credit risk (the risk that a counterparty does not fully meet its financial obligations under the contract), liquidity risk (the risk that a counterparty has an insufficient amount of funds to meet its obligations under the contract) and market risk (the risk of financial loss as a result of valuation and price changes). CCPs manage these

165 Variation margin will be discussed in greater detail below. See also, Miglietta *et al* (n 164) 1 at 7.

166 Eurex Clearing, "Margining Process" (accessed 15 June, 2020), available at: https://www.eurexclearing.com/clearing-en/risk-management/margining-process.

167 Balmer (n 148) 49-50.

risks by holding pre-funded and segregated financial resources in the form of initial margin, variation margin and default fund contributions.[168]

However, if a party defaults, the CCP then becomes the counterparty to the defaulted position and as such, must continue to meet the various obligations to its surviving participants. The CCP can therefore face a potential loss from present and future changes in the value of the defaulting participant's portfolio until it is able to close-out or liquidate that participant's position(s). To contain a clearing member's default within the CCP and prevent contagion across the market, CCPs rely upon a so-called 'default waterfall' to cover any resulting losses.[169]

4.1.5 Default waterfall

In view of the pivotal role played by CCPs, a defaulting clearing member (and a CCP for that matter) can have substantial consequences for not only the financial markets, but also the economy as a whole. Risk is therefore an inherent characteristic of a CCP. To minimise such risk, CCPs have a 'rulebook' containing rules and standards to which they must comply.[170] As part of its rulebook, a CCP's risk and default management system generally consists of a model comprising several lines of defence.[171] If one line of defence fails to absorb the risk/default, the subsequent line of defence is activated. This consecutive sequence is referred to as the 'default waterfall' and is funded by initial margin, variation margin, default fund contributions and the CCP's own financial resources.[172] Depicted in *Figure 20* below is one of many examples illustrating a default waterfall.[173]

168 See generally, U Faruqui, W Huang and E Takats, "Clearing risks in OTC derivatives markets: the CCP-bank nexus" (2018) *BIS Quarterly Review* 73.

169 *Ibid* at 76.

170 For examples of 'rulebooks', see for example Clearnet SA or EuroCCP Clearing Rulebook, available at: https://euroccp.com/document/euroccp-clearing-rule-book/.

171 M Broos, J Capel, C Haseth, A Hondius, A Kosse and E de Vogel, "The CCP – a pivotal player in the financial system" (2018) *De Nederlandsche Bank* 1 at 16.

172 Balmer (n 148) 54.

173 This default waterfall is merely a description and one example of many. CCPs may vary with their respective default waterfall.

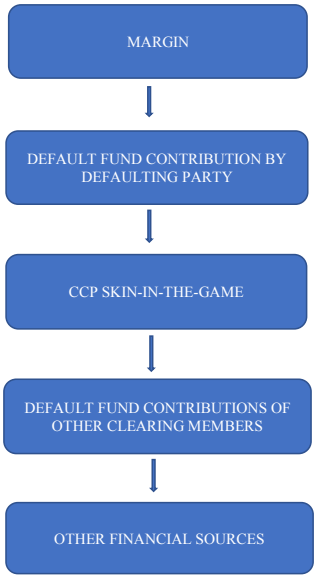

Figure 20: Default Waterfall

4.1.5.1 Margin

> *"It is therefore of concern that the… margin be set correctly in order to minimize the need to utilize the remaining layers of the waterfall".*[174]

The CCP's obligation to ensure contractual settlement despite potential default by its clearing members necessitates the CCP to command collateral. The capital primarily stems from its members and is referred to as margin, namely initial margin and variation margin.[175] Margin is therefore the first line of defence in the default waterfall, being absorbed by the CCP upon failure of the clearing member to fulfil their contractual obligations. Assets used for margin purposes must therefore be highly liquid and their price should be relatively consistent.[176] Often, cash or high-quality non-cash liquid securities, such as Aaa rated government bonds, are the most sought-after.[177] Importantly, margin is held in segregated accounts to prevent losses resulting from other defaults; CCPs are therefore prohibited from using margin posted by non-defaulting clearing members to cover losses arising from defaulting clearing members.[178]

174 Heckinger et al (n 161) 1 at 2.
175 Balmer (n 148) 48.
176 Capel *et al* (n 163) 1 at 26.
177 It should however be noted that while EMIR does set qualitative standards, it is ultimately up to the CCP to decide what to accept and what not to accept. On this see Article 46 EMIR.
178 Article 45 (4) EMIR.

As outlined by EMIR, margin requirements should be sufficient to cover possible losses originating from "at least 99% of the exposure movements over an appropriate time horizon".[179]

4.1.5.2 Defaulting party: default fund

Besides posting initial margin and variation margin, counterparties must also provide the CCP with capital for the CCP's default fund (also known as a 'guarantee fund'), which is the second line of defence in the default waterfall. A default fund is a pool of funds contributed to by clearing members to absorb the costs of default when margin contributions prove insufficient.[180] All participating clearing members contribute to this default fund and each CCP employs its own quantitative method to determine the contribution, the size of which differs per clearing member.[181] The greater the estimated risks attached to a clearing member, the higher the contribution to the default fund they have to make.[182] If a clearing member defaults and the margin contributions prove insufficient to cover the loss, the CCP will activate the defaulting party's contribution to the default fund to absorb the shortfall. According to EMIR, the total default fund must be large enough to absorb a bankruptcy of the largest two clearing members without any problems.[183] Yet a cause for concern is that while margins must be rigorously assessed (often several times a day), default fund contributions are assessed far less, leaving the default fund potentially under-capitalised.[184]

4.1.5.3 Skin-in-the game

If the margin and the defaulting party's contribution to the default fund are completely depleted, then the CCP must then break into its own capital resources – skin-in-the-game. The minimum level of the CCP's skin-in-the-game is set at 25% of its capital requirements[185] and EMIR requires a CCP to have an available and permanent initial capital of € 7.5 million.[186] The underlying idea behind skin-in-the-game being part of the default waterfall is to stimulate the CCP to prevent contagion. This requirement means the "CCP itself has a greater interest in preventing a clearing member from going bankrupt".[187]

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179 *Ibid.* See also, Nabilou and Asimakopoulos (n 142) 70 at 74.
180 Article 42 (1) EMIR.
181 *Ibid.*
182 Article 42 (2) EMIR. See also, Capel *et al* (n 163) 1 at 26-27.
183 Article 43 (2) EMIR.
184 D Elliot, "Central Counterparty Loss-allocation Rules" (2013) *20 Bank of England Financial Stability Paper* 1 at 10. See also, Balmer (n 148) 54.
185 Article 35 (2) of 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.
186 Article 16 EMIR.
187 Capel *et al* (n 163) 1 at 27.

4.1.5.4 Non-defaulting party: default fund

The fourth line of defence in the default waterfall, provided all preceding measures have been exhausted, is to rely on non-defaulting members' contributions to the default fund.[188] Such a measure – multilateral netting – "mutualizes the residual loss among surviving clearing members".[189] The objective is to decrease moral hazard, adverse selection and reduce asymmetric information problems by making participants contribute to the defaults of their fellow clearing members.[190]

4.1.5.5 Other financial resources

The final line of defence is relying on the CCP's remaining equity.[191] If losses are larger than this equity, then unfortunately the CCP will become insolvent.[192] Given that CCPs are "systemically important institutions", that are now deemed "too-big-too-fail" in some quarters, failure would undoubtedly trigger catastrophic consequences.[193] In the unlikely event that there is CCP default, CCPs that operate with a banking licence can make use of the Bank Recovery and Resolution Directive, but there is currently no equivalent resolution regime for non-bank CCPs.[194] However, the European Commission has issued the so-called European Proposal for the Recovery and Resolution of CCPs,[195] which is, at the time of writing, under discussion.[196] In addition, "Article 85 (1) (a) of EMIR opens up the possibility for CCPs to have access to central bank liquidity facilities by mandating the Commission to assess, in cooperation with the members of the European System of Central Banks, the need for any measure to facilitate CCPs' access to central bank liquidity facilities".[197]

188 Article 45 EMIR.
189 Nabilou and Asimakopoulos (n 142) 70 at 78.
190 Balmer (n 148) 55.
191 Article 43 (1) EMIR.
192 Elliot (n 184) 1 at 5.
193 A failed CCP would imply that all regulatory measures have failed and as such, is often said to be the result of a crisis. On this see, V Bignon and G Vuillemey, "The Failure of a Clearinghouse: Empirical Evidence" (2017) *638 Banque de France Working Paper*. See also, G Ferrara and X Li, "Central counterparty auction design" (August 2017) 669 *Bank of England Staff Working Paper* 1 at 5. See also, Schwarcz (n 140) 1327 at 1355.
194 I Ruffini, "Central Clearing: Risks and Customer Protections" (2015) 39 *Journal of Economic Perspectives* 90 at 97. See also, Recital 4 and Article 23 of RTS; Nabilou and Asimakopoulos (n 142) 70 at 72.
195 Proposal for a Regulation of the European Parliament and of the Council on a framework for the recovery and resolution of central counterparties and amending Regulations (EU) No 1095/2010, (EU) 2015/2365, COM/2016/0856 final – 2016/0365 (COD).
196 12 December, 2020. It is, however, outwith the scope of this thesis to discuss the consequences of CCP failure.
197 Nabilou and Asimakopoulos (n 142) 70 at 88. See also, Heckinger *et al* (n 161) 1 at 6-9.

4.1.6 *Mitigating procyclicality of margin*

Mitigating procyclicality of margin requirements has been a major policy objective in regulating CCPs. To avoid procyclicality, strict margin requirements are often argued as being necessary.[198] Measures, such as higher margin requirements consisting of high-quality liquid assets[199] with minimal credit and market risk that are segregated and insulated from losses stemming from the default of another counterparty.[200] Despite such measures there is no escaping the procyclicality of margin. Market changes that directly impact the value of securities results in increases in margin. This then leads to losses due to the need to access additional liquidity. This directly impacts margin practices, and the implementation of haircuts on margins in stressed market conditions can exacerbate the cycle causing deleveraging, which results in increased margin requirements thus fuelling the cycle, causing more losses and thus higher margins.[201] To counter this, it has been observed that CCPs should take the procyclical consequences of margin requirements into account when setting, enforcing and calibrating their margin policy.[202] In addition, there is considerable support by the European Central Bank to include intervention tools in EMIR by granting authorities the power of setting and calibrating time-varying margin floors and ceilings in order to limit leverage and procyclicality.[203]

4.2 EMIR: OTC Derivatives

4.2.1 *Introduction*

Minimising risk is a top priority of all financial institutions, and derivatives are often viewed as among the most volatile of financial instruments given their inherent exposure to intra-day price fluctuations. Over the past decade, financial institutions around the world have sought to mitigate this risk by collateralising their derivatives exposure by taking cash or cash equivalent securities as financial collateral (in the form of initial margin and/or variation margin) from their counterparties.[204] Post Global Financial Crisis reforms aimed at the EU shadow banking sector, such as EMIR and the accompanying

198 Balmer (n 148) 51-52.
199 It should however be noted that while EMIR does set qualitative standards, it is ultimately up to the CCP to decide what to accept and what not to accept. On this see Article 46 EMIR.
200 Articles 45 (4) and 47 (1) EMIR.
201 Balmer (n 148) 51-52.
202 Nabilou and Asimakopoulos (n 142) 70 at 79.
203 European Central Bank, "Financial Stability Review" (2016) 1 at 106.
204 See generally, Harding and Johnson (n 15).

RTS have contributed substantially to preserving financial stability.[205] In addition, ESMA is mandated to promote the smooth functioning of the financial markets and to safeguard financial stability by ensuring EU rules are uniformly applied across the EU.[206]

4.2.2 Post Global Financial Crisis reforms

EMIR was published in the *Official Journal of the European Union* on 27 July 2012 and entered into force on 16 August 2012. It has been described as the "centrepiece" of post Global Financial Crisis regulatory reform and is the translation into European law of the commitments made by the G20 at the 2009 Pittsburgh Summit concerning derivatives.[207] As previously discussed, one of the objectives of the 2009 Pittsburgh Summit is the reduction of systemic risk, by imposing stringent rules that requires eligible counterparties to post higher margin requirements for uncleared OTC derivatives transactions than previously existed.[208] In response to the above G20 Pittsburgh commitment, the Working Group on Margining Requirements was formed with the objective of reducing systemic risk by developing a consistent global standard for margin requirements for uncleared OTC derivative transactions.[209] This has resulted in the implementation of the EMIR and the RTS.[210]

4.2.3 Risk mitigation requirements for uncleared OTC derivatives

As a result of the aforementioned recommendations posed by the Working Group on Margining Requirements, the EMIR[211] and the accompanying RTS impose risk mitigation requirements on parties to uncleared OTC derivative transactions.[212] Article 11 (1) of the EMIR requires parties to an uncleared derivatives transaction to ensure "that appropriate procedures and arrangements are in place to measure, monitor and mitigate risk", in particular, risk-

205 Also included but not discussed in this section are the suite of collateral documentation published by the ISDA, predominantly in the form of the Credit Support Annexes. See also, M Hsiao, "Regulating OTC derivatives: the CCP's role and the EMIR", in I H Y Chiu and I G MacNeil, *Research Handbook on Shadow Banking Legal and Regulatory Aspects* (2018) 205 at 205-206.

206 Recital 10 EMIR. See also, Balmer (n 148) 90-93.

207 However, according to Alexandra Balmer, the EU has still yet to enact legislation complying with many of the G20 commitments. On this see, Balmer (n 148) 4. See also, European Commission, "Questions and Answers on the proposal to amend the European Market Infrastructure Regulation" (4 May, 2017), available at: https://ec.europa.eu/commission/presscorner/detail/en/MEMO_17_1145. See also, Recital 4 EMIR; Hsiao (n 205) 205 at 210-211.

208 Harding and Harding (n 17) 11 and 23-24. See also, Recital 4 EMIR.

209 See generally, BCBS and IOSCO (n 21).

210 For a more in-depth discussion on this, please refer to section 2.1 above.

211 Article 11 EMIR.

212 As required by Article 11 (15) (a) EMIR.

management procedures that require "the timely, accurate and appropriately segregated exchange of collateral".[213] As previously mentioned, when financial collateral is posted in a derivatives transaction, it is referred to as 'margin', which can, in turn, be sub-divided into two categories, namely initial margin, which is applied at the point of trade and variation margin, which is applied during the lifecycle of the transaction.[214] Both initial margin and variation margin are necessary techniques to properly manage the risks to which parties to an uncleared OTC derivative transaction are exposed.[215]

4.2.3.1 Scope of the risk mitigation requirements

The scope of the risk mitigation requirements in relation to the exchange of collateral affects many EU financial[216] and non-financial counterparties[217] with uncleared OTC derivative portfolios above the EMIR/RTS thresholds ("in-scope entities").[218] In-scope entities now have to comply with 'phased-in' mandatory margin requirements, and are therefore required to exchange initial margin and variation margin when called upon to do so.[219] Depicted in *Table 5* below are the most recent BCBS/IOSCO timelines and thresholds demonstrating when an in-scope entity is required to post initial margin and/or variation margin.

The amount of initial margin varies on a case-by-case basis but ultimately reflects the size of the potential future exposure. A number of factors are taken into consideration, namely the volatility of the financial collateral, contract duration, how often the contract is revalued including the exchange of variation

213 Recital 1 RTS.

214 European Systemic Risk Board (n 26) 1 at 4. See also, Harding and Harding (n 17) Authors' Foreword xi.

215 See Chapter 4 for a more in-depth discussion on these "necessary techniques". See also, Recital 1 RTS.

216 Article 2 (8) EMIR defines 'financial counterparty' as: "an investment firm authorised in accordance with Directive 2004/39/EC, a credit institution authorised in accordance with Directive 2006/48/EC, an insurance undertaking authorised in accordance with Directive 73/239/EEC, an assurance undertaking authorised in accordance with Directive 2002/83/EC, a reinsurance undertaking authorised in accordance with Directive 2005/68/EC, a UCITS and, where relevant, its management company, authorised in accordance with Directive 2009/65/EC, an institution for occupational retirement provision within the meaning of Article 6(a) of Directive 2003/41/EC and an alternative investment fund managed by AIFMs authorised or registered in accordance with Directive 2011/61/EU".

217 Article 2 (9) EMIR defines 'non-financial counterparty' as: "an undertaking established in the Union other than the entities referred to in" Article 2 (1) and (8) EMIR.

218 Excluded entities include members of the European System of Central Banks, public sector entities owned or guaranteed by government and certain multilateral development banks. See also Article 10 EMIR.

219 See generally, 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)" (4 February, 2019). See also, Harding and Harding (n 17) 24.

margin. The crux is that, the riskier the transaction the higher the initial margin and the less risky the transaction, the lower the initial margin.

Table 5: Compliance Deadlines – Margin Requirements for EU Counterparties

Amount of Uncleared OTC Derivatives Exposure	*Initial Margin*	*Variation Margin*[220]
> €3 trillion	4 February 2017[221]	4 February 2017
> €2.25 trillion	1 September 2017[222]	1 March 2017
> €1.5 trillion	1 September 2018[223]	1 March 2017
> €0.75 trillion	1 September 2019[224]	1 March 2017
> €50 billion	1 September 2021[225]	1 March 2017
> €8 billion	1 September 2022[226]	1 March 2017

Source: BCBS/IOSCO[227] and RTS[228]

In order to facilitate market participants with the necessary information on whether they are subject to comply with the margin requirements as outlined in *Table 5* above, ISDA have helpfully published a 'Regulatory Margin Self-Disclosure Letter', which is intended to assist parties with regulatory margin compliance. The ISDA Regulatory Self-Disclosure Letter, published in June 2016, is essentially a standard form that allows parties to exchange the necessary information to determine if, and when, the rules under a particular margin regime will apply to the respective trading relationship.[229] This could result in one (or more) of the following scenarios:[230]

1. The party must post or collect initial margin; or,
2. The party must post or collect variation margin; or,

220 Article 37 (1) (a) and (b) RTS.
221 Article 36 (1) (a) RTS.
222 Article 36 (1) (b) RTS.
223 Article 36 (1) (c) RTS.
224 Article 36 (1) (d) RTS.
225 As a result of the Covid-19 outbreak, this phase has recently been amended by BCBS and IOSCO. On this see the BCBS and IOSCO, "Margin requirements for non-centrally cleared derivatives" (April, 2020), available at: https://www.bis.org/bcbs/publ/d499.pdf. For a comparison with the old provision, see Article 36 (1) (e) RTS.
226 Ibid.
227 See generally, BCBS and IOSCO (n 225).
228 Articles 36 and 37 RTS.
229 See the ISDA website: https://www.isda.org/2016/10/26/isda-regulatory-margin-self-disclosure-letter-2/.
230 Harding and Harding (n 17) 34.

3. The party must post or collect both initial margin and variation margin; or,
4. The party does not need to post or collect initial margin and/or variation margin.

4.2.4 Collateral eligibility

Since the Global Financial Crisis, the quality of assets posted as financial collateral for initial and variation margin purposes have substantially increased and in practice, liquidity and the promise of cash immediacy are paramount when determining what is deemed acceptable. The BCBS/IOSCO and the RTS have helpfully provided EU market participants with an informative list, which outlines the most liquid and safest forms of financial collateral assets used for margin purposes in a derivatives transaction:[231]

- Cash;
- High-quality[232] government and central bank securities;
- High-quality corporate bonds;
- High quality-covered bonds;
- Equities included in major indices; and,
- Gold.

This would imply that assets used for financial collateral purposes that fall outwith the aforementioned asset classes would be "legally ineligible".[233] Where one party attempts to use assets that do not conform to the EMIR/RTS requirements and the "Credit Support Eligibility Conditions" documented in the 2016 Variation Margin Credit Support Annex,[234] the assets would be deemed 'ineligible' and the Transferee is therefore required to notify the Transferor by delivering a "Legal Ineligibility Notice" outlining, amongst other things, the reasons why the assets do not fulfil the eligibility requirements.[235] In such a situation, the 'legally ineligible' financial collateral would have to be replaced by 'legally eligible' collateral.

231 BCBS and IOSCO (n 225) 1 at 17-18. See also Article 4 RTS, which provides a comprehensive list of eligible collateral types.

232 The term 'high-quality', refers to collateral that can be considered highly liquid. Liquidity is defined in Chapter 6 as an asset that can be sold quickly and efficiently. See also, Recital 92 EMIR.

233 Paragraphs 9 (e) and 11 (c) (iii), 2016 English Law CSA for Variation Margin.

234 Paragraph 11 (c) (iv), 2016 English Law CSA for Variation Margin.

235 Paragraphs 9 (e)-(h) and 11 (c) (iii), 2016 English Law CSA for Variation Margin.

4.2.5 Initial margin

Under Article 1 (1) of the RTS, initial margin is defined as:

> *"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".*[236]

Initial margin is a predetermined, fixed value cash or non-cash financial collateral with the objective of protecting the contracting parties from non-performance. It is posted at the point of trade and can either be a unilateral arrangement or a bilateral arrangement. A unilateral arrangement is common with supranational institutions entering into a transaction with a smaller institution, such as a corporate/hedge fund (i.e. financial collateral flowing one-way to the supranational institution). However, since the Global Financial Crisis and the default of Lehman Brothers in 2008, there is a greater trend to focus on bilateral arrangements, which is driven by industry bodies and regulators alike. A bilateral arrangement involves the mutual posting of financial collateral by both parties to the transaction and is required to be placed in segregated accounts.[237] According to ISDA, the rationale behind initial margin in the derivatives market is to provide an additional financial buffer that insulates the surviving party against further losses following a default.[238]

In practice, initial margin is commonly applied to CCP transactions but is currently not commonly applied to uncleared OTC derivative transactions.[239] The distinction between initial margin in CCP and uncleared OTC transactions is due to CCPs requiring the mutual posting of initial margin at the point of trade to account for the risk that each respective party brings to the CCP by having its trade cleared there.[240] Yet from an uncleared OTC perspective, the requirement for eligible counterparties to exchange initial margin has a staggered phase-in period as outlined in *Table 5* above. Counterparties that are eligible to exchange initial margin depends upon whether the size of the counterparties' portfolio of uncleared OTC derivatives transactions measured

236 Article 1 (1) RTS.

237 The segregation of initial margin will be discussed in greater detail below. See also, Harding and Johnson (n 15) 79.

238 See the ISDA website: https://www.isda.org/tag/initial-margin/.

239 As previously mentioned, initial margin is still being phased in and will play a much more prominent role in the future. See the ISDA, "Initial Margin for Non-centrally Cleared Derivatives: Issues for 2019 and 2020" (July, 2018), available at: https://www.isda.org/a/D6fEE/ISDA-SIFMA-Initial-Margin-Phase-in-White-Paper-July-2018.pdf; Financial Conduct Authority, "Margin requirements for uncleared derivatives" (2017), available at: https://www.fca.org.uk/markets/emir/margin-requirements-uncleared-derivatives.

240 Domanski *et al* (n 159) 59 at 60-61.

as the 'aggregate monthly average notional amount' *exceeds*, at the time of writing, € 0.75 trillion.[241]

Crucially, in a derivatives transaction initial margin is not just calculated on a one-off basis like it is in a repo and securities lending transaction.[242] Counterparties are required to recalculate initial margin upon certain specified events happening including the execution of a new in-scope transaction, payments under a transaction or termination of a transaction with a minimum initial margin recalculation period of ten days.[243] In addition, regulation now requires initial margin to be re-calibrated on an annual basis.[244]

4.2.5.1 Initial margin segregation[245]

Uncleared OTC derivatives contracts that are not considered suitable for CCPs entail operational and counterparty credit risks. To manage these risks, "financial counterparties shall have risk-management procedures that require the timely, accurate and appropriately segregated exchange of collateral with respect to OTC derivative contracts".[246] One such 'risk management procedure' is the segregation of initial margin. As such, the mutual posting of collateral required to meet initial margin requirements for uncleared OTC derivatives transactions must be segregated in an "insolvency-remote custody account".[247] This is also the case for CCPs, who hold pre-funded and segregated financial resources in the form of initial margin to mitigate risk.[248]

The reason for legally segregating initial margin is to protect counterparties to the derivatives transaction from loss in the event of a default. Legal segregation refers to the segregation of client assets from counterparty assets. This can be distinguished from operational segregation, which concerns segregating clients' assets 'on the books'.[249] The concern is that if initial margin is not held in such a way to ensure it is immediately available upon counterparty default, and if counterparties to the transaction were able to obtain legal title in the posted assets and thus reuse those assets in another transaction, parties would experience significant loss should some form of default occur.[250] As

241 4 December, 2020. See also, BCBS and IOSCO, "Summary of changes to the implementation of margin requirements for non-centrally cleared derivatives" (accessed 27 March, 2019), available at: https://www.bis.org/bcbs/publ/d317_summarytable.pdf. See also generally, BCBS and IOSCO (n 225).

242 Unless re-pricing, adjustment or substitution takes place.

243 Article 18 RTS. See also, Harding and Harding (n 17) 27.

244 Articles 16 (1) and 18 (1) (b) RTS. See also, Harding and Harding (n 17) 27.

245 This section contains and builds upon Chapter 9 of Haentjens et al (n 97).

246 Article 11 (3) EMIR.

247 Article 19 (1) (c) RTS.

248 See generally, Faruqui *et al* (n 168). See also, Article 45 (4) EMIR.

249 D Verheij, J Tegelaar and N Campuzano, "Asset segregation: its many faces and challenges faced" (2019) *Leiden Law Blog*, available at: https://leidenlawblog.nl/articles/asset-segregation-its-many-faces-and-challenges-faced.

250 BCBS and IOSCO (n 225) 1 at 19-21. See also, Recital 35 RTS; Balmer (n 148) 84.

such, "for effective protection of… assets in case of insolvency, legal segregation is key".[251]

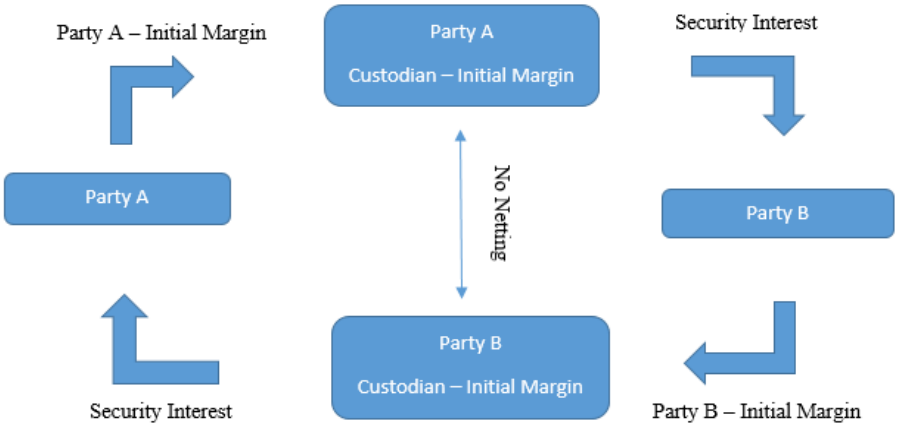

Figure 21: Initial Margin Segregation

Figure 21 above provides an illustration of how initial margin is 'legally' segregated and demonstrates that, as a starting point, initial margin is 'two-way' – meaning that both parties must, simultaneously, post and receive collateral. In terms of party A, it posts its initial margin amount to a segregated account with its custodian. A security interest or pledge (as opposed to title transfer) over the initial margin and account with the custodian is granted to party B. In terms of party B, it also has to post initial margin to its custodian, which is then placed in a segregated account. A security interest or pledge over the initial margin and account of the custodian is then granted to party A. The two sets of posted initial margin cannot be used for netting purposes, but must be segregated. While the segregation of initial margin has obvious financial stability benefits, it should also be observed that the expected outcome of the segregation of initial margin may "noticeably decrease available liquidity in the market".[252]

The contractual framework is based on counterparties entering into an ISDA master agreement, with a Credit Support Annex and a dedicated ISDA Account Control Agreement, which is signed between counterparties and the custodian. The ISDA Account Control Agreement facilitates the negotiation process of contractual arrangements that provide for the segregation of Independent

251 Verheij *et al* (n 249).
252 Balmer (n 148) 84.

Amounts (initial margin) with a third-party custodian. The ISDA Account Control Agreement is a three-way contract between the custodian and the two OTC derivatives counterparties and provides that the custodian will hold and release Independent Amounts to the counterparties based on pre-defined conditions.[253] Following a termination event, or an event of default by one of the parties to the transaction for example, the custodian may only release the initial margin as provided and permitted under the Account Control Agreement.

The fact that the posted initial margin is underpinned by ISDA documentation, such as the Account Control Agreement and others, is segregated in a custodian account with an attached security interest and further, "the collecting counterparty shall not rehypothecate, repledge nor otherwise reuse the collateral collected as initial margin",[254] raises the question whether the segregation of initial margin which prevents the financial collateral being in the possession, or under the control of the collateral taker, is necessary? Under the initial margin rules in the EU, the custom has been to use the language followed in the EU Financial Collateral Directive, under which 'provision' of collateral is equivalent to collateral "being delivered, transferred, held, registered or otherwise designated so as to be in the possession or under the control of the collateral taker or of a person acting on the collateral taker's behalf".[255] It is possible "that an irrevocable instruction by the posting party to a third-party custodian could be sufficient to meet this test, but this will depend on how the collateral is held and the account structured".[256]

4.2.6 Variation margin

Under Article 1 (2) of the RTS, variation margin 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".*[257]

In practice, variation margin is the most commonly used method to collateralise a derivatives transaction. Variation margin operates in a similar way to margin transfers found under the GMRA and the margining techniques found under

253 See the ISDA website: www.isda.org.

254 Article 20 (1) RTS.

255 Article 2 (2) FCD. See also, L Gullifer, "What Should We Do about Financial Collateral?" (2012) *65 (1) Current Legal Problems* 377-410.

256 The issue of 'possession or control' was discussed in greater detail in Chapter 3. See also, J Haines, A Levitt, A Tanney and J Knight, "Margin for OTC Derivatives – Impact for Insurers, Reinsurers and Asset Managers" (2016) *Ashurst*, available at: https://www.ashurst.com/en/news-and-insights/legal-updates/margin-for-otc-derivatives-october-2016/;see also, Haentjens *et al* (n 97) 331-333.

257 Article 1 (2) RTS.

the GMSLA. In a derivatives transaction, the fact that the value of the underlying asset can fluctuate in value, regular mark-to-market valuations are performed on the underlying asset to mitigate the exposure that one party will always be 'in the money' and the other party will always be 'out of the money'.[258] Variation margin is precisely in place to mitigate this risk and is a payment obligation from one party to the other party. The value of the underlying asset is thus regularly valued (in practice this is done daily) at market price and set against the previous valuation to determine the true value of the underlying asset.[259] Such a valuation determines which party has a "Credit Support Obligation", if any, to either post financial collateral ("Delivery Amount") or to return surplus financial collateral ("Return Amount") on a specific "Valuation Date" – taking into account the *de minimis* "Minimum Transfer Amount" not exceeding € 500,000, which attempts to avoid costly and unnecessary transfers.[260] Unlike initial margin, "variation margin may be re-hypothecated, repledged or re-used".[261]

4.2.7 Haircut

Within a derivatives transaction, a haircut is used slightly differently to that found in repo and securities lending transactions. A haircut is a percentage discount applied to the market value of the financial collateral to cover the worst expected price movements over the mark-to-market frequency period and a holding period if the financial collateral needs to be liquidated following a default. While initial margin tries to deal with the volatility of risk exposure, 'haircuts' deal with the volatility of price movements between the time the financial collateral is called and its receipt.

> *"[In a derivatives transaction,] haircuts provide an extra cushion to protect the collateral value between Valuation Dates or during a liquidation period. They are highly correlated to the tenor and price volatility of the… collateral".*[262]

In practice, the ISDA Credit Support Annexes use the term "Valuation Percentage" when referring to the reciprocal term – the 'haircut'.[263] For instance, if the real value of the financial collateral asset is € 100 and the agreed Valu-

258 Balmer (n 148) 17. See also, R A Jarrow, *Financial Derivatives Pricing* (2008) 358.
259 Paragraph 3 (b), 2016 English Law CSA for Variation Margin.
260 The Minimum Transfer Amount was discussed in Chapter 5. See also, Paragraphs 2 (a), (b), 10 and 11 (b) (i) (A), (B), 1995 ISDA English Law CSA and Paragraphs 2 (a), (b) 10 and 11 (c) (i) (A), (B), 2016 English Law CSA for Variation Margin.
261 Article 20 (1) RTS. See also, BCBS and IOSCO (n 225) 1 at 20.
262 Harding and Johnson (n 15) 80.
263 Paragraphs 10 and 11 (b) (ii), 1995 ISDA English Law CSA and Paragraphs 10 and 11 (c) (v), 2016 English Law CSA for Variation Margin.

ation Percentage is 97%, then the haircut is 3%.[264] Helpfully, the BCBS/IOSCO have published a haircut schedule, which provides market participants with an important benchmark when determining applicable haircut percentages.[265]

Table 6: BCBS/IOSCO/RTS Haircut Schedule

Asset Class	*Residual Maturity*	*Haircut % of Market Value*
Cash in same currency	N/A	0%
Member States' government/central bank securities	< 1 year	0.5%
High quality corporate/covered bonds	< 1 year	1%
Member States' government/central bank securities	> 1 and < 5 years	2%
Member States' government/central bank securities	> 5 years	4%
High quality corporate/covered bonds	> 1 and < 5 years	4%
High quality corporate/covered bonds	> 5 years	8%
Equities included in major stock indices	N/A	15%
Gold	N/A	15%

Source: BCBS/IOSCO and the RTS[266]

The haircut schedule is depicted in *Table 6* below and is now implemented in the RTS.[267]

It should be noted however, that adherence to this schedule is not a mandatory requirement, but nonetheless provides market participants with an important reference point. Instead of using the schedule as outlined above in *Table 6*, counterparties in uncleared derivatives transactions can also calibrate haircuts based on their own internal models. If the internal approach is used, the RTS set out a number of minimum conditions to be met, such as frequency with which haircuts must be updated (this is usually once every three months or sooner if there is material volatility), the appropriate internal review process to be followed and finally, the minimum variables to be applied when calibrating the models (99% confidence level and 10 day liquidation period).[268]

264 Harding and Harding (n 17) 13.
265 BCBS and IOSCO (n 21) 1 at 27.
266 BCBS and IOSCO (n 21) 1 at 27. See also, Annex II RTS.
267 Annex II RTS.
268 Annex III 1 (a), (b) and (c) RTS. See also, European Systemic Risk Board (n 26) 1 at 28.

4.3 SFTR: Repurchase Agreements and Securities Lending

The SFTR was published in the *Official Journal of the European Union* on 23 December 2015 and came into force on 12 January 2016. It is part of a globally coordinated effort by the Financial Stability Board and the European Systemic Risk Board to improve oversight and reduce financial stability risks arising from shadow banking transactions.[269]

Under the SFTR, the types of transactions covered are termed 'securities financing transactions' and include, *inter alia*[270], repurchase agreements[271] and securities lending transactions.[272] As noted in previous chapters, transactions of this nature are often titled 'secured' in the sense that the seller/borrower ("collateral giver") of cash or securities provides financial collateral to the buyer/lender ("collateral taker")[273] so that should the collateral giver default, the collateral taker can liquidate the financial collateral to recoup the principal.[274] In addition, the transaction is almost always 'overcollateralised' via the margin/haircut, which ensures that the value of the financial collateral is worth more than the value of the contracted for cash/securities. Overcollateralistion provides a further layer of security, giving the collateral taker a time horizon financial buffer should the collateral giver default.[275]

In order to "curb shadow banking" by preventing the rapid "build-up of leverage, procyclicality and interconnectedness in the financial markets",[276] the Financial Stability Board proposed that a "regulatory framework for haircuts on non-centrally cleared securities financing transactions" be adopted into the SFTR.[277] It was argued that by introducing "qualitative standards for methodologies used by market participants to calculate haircuts" as well as "numerical haircut floors" for non-centrally cleared securities financing transactions, that the risks associated with leverage and procyclicality would be diminished.[278] By introducing higher haircuts/initial margin requirements at the point of trade would limit the amount of debt (leverage) a financial

269 Recitals 1-5 of SFTR. See also, J Mazzacurati, "Haircuts in EU securities financing markets" (2017) *ESMA Report on Trends, Risks and Vulnerabilities* 52 at 53.

270 It should also be noted that the SFTR, as part of its definition of 'securities financing transaction' includes a buy-sell back or a sell buy-back and a margin lending transaction. However, these two transactions will not be discussed.

271 Article 3 (9) SFTR.

272 Article 3 (7) and (11) (a) and (b) SFTR.

273 Reference to borrower/seller and lender/buyer relates to parties entering into a securities lending transaction or repurchase agreement. Chapter 4 provides details of this.

274 Grillet-Aubert *et al* (n 36) 1 at 27-28.

275 For a more in-depth discussion of 'overcollateralisation', please see Chapters 3 and 4.

276 Recital 2 SFTR.

277 See generally, Financial Stability Board 2015 (n 27). See also, Recital 3 SFTR.

278 Financial Stability Board 2015 (n 27) 1 at 4-7. See also, European Securities and Markets Authority, "Report on securities financing transactions and leverage in the EU" (2016) *ESMA/2016/1415* 1 at 9, available at: https://www.esma.europa.eu/sites/default/files/library/2016-1415_-_report_on_sfts_procyclicality_and_leverage.pdf.

institution can obtain. The haircut schedule proposed by the Financial Stability Board is depicted in *Table 7* below:

Table 7: Financial Stability Board Haircut Schedule

Residual maturity of collateral	Haircut level	
	Corporate and other issuers	Securitised products
≤ 1 year debt securities, and Floating Rate Notes (FRNs)	0.5%	1%
> 1 year, ≤ 5 years debt securities	1.5%	4%
> 5 years, ≤ 10 years debt securities	3%	6%
> 10 years debt securities	4%	7%
Main index equities	6%	
Other assets within the scope of the framework	10%	

Source: Financial Stability Board[279]

However, such a framework has yet to be adopted into law and as a result, mandatory margin requirements in relation to non-centrally cleared securities financing transactions currently "do not exist in the EU".[280] Given that available data on margins and "haircuts is sparse, and little is known of current market practice"[281] in this area, it seems fruitless to "regulate something you cannot measure".[282] It therefore seems apt that the SFTR's primary aim is "to foster transparency of SFTs by increasing the reporting requirements".[283] This will arguably allow regulators to first obtain important granular data before introducing substantive reforms.

279 Financial Stability Board 2015 (n 27) 1 at 8, Updated on 19 July, 2019; 25 November 2019; and, 7 September 2020, available at: https://www.fsb.org/wp-content/uploads/P070920-1.pdf. See also, European Securities and Markets Authority (n 277) 1 at 9.

280 European Securities and Markets Authority (n 277) 1 at 8-10. See also, European Systemic Risk Board (n 26) 1 at 49.

281 Mazzacurati (n 269) 52 at 52.

282 H Nabilou and A M Pacces, "The Law and Economics of Shadow Banking", in I H Y Chiu and I G MacNeil, *Research Handbook on Shadow Banking Legal and Regulatory Aspects* (2018) 7 at 17.

283 European Systemic Risk Board (n 26) 1 at 51. See also, Recital 7 SFTR.

4.3.1 Scope of the SFTR

The SFTR aims to create a safer and more transparent financial system by placing additional requirements on market participants entering into securities financing transactions. The approach taken by the SFTR requires securities financing transactions to adhere to:

- The reporting requirement: securities financing transactions must be reported to trade repositories;[284]
- The disclosure requirement: transparency and disclosure obligations by UCITS management companies, UCITS investment companies and Alternative Investment Fund Managers requiring periodic reports informing investors of securities financing transactions and total return swaps;[285] and,
- The collateral reuse requirement: prior risk disclosure and written consent before counterparties are permitted to reuse or rehypothecate assets.[286]

Each of these requirements have important implications in relation to margin and as such, will be discussed in turn.

4.3.2 Reporting requirement

> *"Important blind spots in our view of the financial system remain, in part owing to data gaps. When it comes to financial stability, what you do not know really can hurt you – and there remains a good bit we do not know".*[287]

The SFTR creates a framework under which counterparties of a securities financing transaction have to report details of the specific transaction to trade repositories.[288] A trade repository is defined under the SFTR as a registered "legal person that centrally collects and maintains the records of" securities financing transactions.[289] The information obtained by the trade repository is then centrally stored and is directly accessible by relevant authorities (such as the European System of Central Banks, the European Securities and Markets Authority, the European Central Bank and the European Systemic Risk Board and others) "for the purpose of identification and monitoring of financial stability risks entailed by shadow banking activities".[290]

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284 Article 4 SFTR.
285 Articles 13 and 14 SFTR.
286 Article 15 SFTR.
287 S Fischer, "Financial Stability and Shadow Banks: What We Don't Know Could Hurt Us" (3 December, 2015) Financial Stability Conference – Washington DC 1 at 4, available at: https://www.bis.org/review/r151207b.pdf.
288 Article 4 (1) SFTR.
289 Articles 3 (1) and 5 SFTR.
290 Recital 13 SFTR.

Article 4 of the SFTR requires counterparties to a securities financing transaction to report the details of a transaction to a registered or recognised trade repository "no later than the working day following the conclusion, modification or termination of a transaction".[291] If a trade repository is unavailable to record the specific details, counterparties can report details to the European Securities and Markets Authority as an alternative.[292] Counterparties are required to keep a record of any securities financing transaction "that they have concluded, modified or terminated for at least five years following the termination/maturity of the transaction".[293]

4.3.2.1 What has to be reported?

Under the SFTR, both parties to a securities financing transaction are required to report specific details of a transaction to a trade repository. The specific details included under the reporting obligation include, *inter alia:*[294]

- The assets used as financial collateral and their type, quality and value;
- The method used to provide financial collateral;
- Whether the financial collateral is available for reuse purposes (or has been reused);
- Any collateral substitution; and,
- Any margin/haircut.

Based on the reported information by counterparties, Article 12 of the SFTR highlights that "trade repositories shall regularly, and in an easily accessible way, publish aggregate positions" to ensure that data is readily available to the relevant EU authorities.[295] While it remains to be seen the extent of Article 12, the reporting requirement is arguably a step in the right direction. Granular data is essential for introducing substantive reforms and ultimately, to make financial markets safer.

4.3.3 Disclosure requirement

Supplementing the existing reporting requirements are provisions on investor transparency when entering into a securities financing transaction and total return swap.[296] These provisions are closely linked to the AIFMD and the UCITS Directive and requires fund managers to provide pre-contractual and periodical information to investors in relation to the risks associated with the use of

291 Article 4 (1) SFTR.
292 Article 4 (5) SFTR.
293 Article 4 (4) SFTR.
294 This is not an exhaustive list as it would be trite to list all the requirements parties must adhere to. This list is used in relation to the purpose of this study. For a fuller overview of the list of the minimum reporting obligations, see Article 4 (9) (b) SFTR.
295 Article 12 (1) and (2) SFTR.
296 Article 13 (1) SFTR.

securities financing transactions and total return swaps.[297] It is worth noting at this juncture that the investor transparency provisions capture both securities financing transactions and total return swaps.

4.3.3.1 Pre-contractual information

Either the UCITS prospectus and/or the pre-contractual disclosure by Alternative Investment Managers to investors, must specify the securities financing transactions and total return swaps that the respective funds are authorised to use and include a clear statement that those transactions and instruments are used. This is to "ensure that investors understand and appreciate the inherent risks before they decide to invest in a particular UCITS or" Alternative Investment Fund.[298] The following information must be included in either a UCITS prospectus and/or the pre-contractual disclosure to investors for Alternative Investment Funds:[299]

- Acceptable collateral: description of acceptable collateral with regard to asset types, issuer, maturity, liquidity as well as the collateral diversification and correlation policies.
- Collateral valuation: description of the collateral valuation methodology used and its rationale, and whether daily mark-to-market and daily variation margins are used.
- Risk management: description of the risks linked to securities financing transactions and total return swaps as well as risks linked to collateral management, such as operational, liquidity, counterparty, custody and legal risks and, where applicable, risks arising from collateral reuse.
- Specification of any restrictions (regulatory or self-imposed) on reuse of collateral.

Recital 15 of the SFTR highlights that the use of securities financing transactions and total return swaps can increase the risk profile of the respective fund. Therefore, it is crucial to ensure that investors in funds are able to make informed choices and are able to assess the overall risk and reward profile of a fund. This is further emphasised in Recital 20 of the SFTR where such information is necessary to ensure that investors understand and appreciate the inherent risks before deciding to invest in a particular fund.

297 Recitals 19 and 20 and Articles 13 and 14 SFTR.

298 Recital 20 SFTR.

299 This list is not exhaustive, but only outlines the most relevant sections for the purpose of this thesis. For an exhaustive list, see Section B of the Annex SFTR.

4.3.4 Collateral reuse requirement

> *"In a sea of complex trades, Article 15* [SFTR] *is no lifeguard – it is just another signpost stating that there may be some danger, somewhere, at some time. Not where; not when; and provides no help in identifying or mitigating that risk"*[300].

Collateral reuse is accounted for in Article 15 of the SFTR. As noted in Chapter 3, collateral reuse refers to transactions whereby market participants pledge, sell, or more generally transfer an asset they have received from one market participant and transfer it to another market participant.[301] In a typical credit intermediation chain, financial collateral can be reused several times over. The re-churning of the same asset leads to long chains of intermediation, which harbours both benefits and risk and along the intermediation chain, a single financial institution can be involved in multiple transactions.[302]

4.3.4.1 Benefits of collateral reuse

From an economic perspective, the reuse of financial collateral is the functional equivalent to the creation of money that takes place in the traditional banking sector through the process of deposit taking and loan making.[303] In a repo transaction, for example, market participants raise cash "to buy securities, which in turn, are repoed out to raise more cash to buy more securities and so on" .[304] The chain of intermediation is a "money multiplier" and in theory, the financial collateral underpinning the transaction may be constantly re-used; mathematically, the cumulative intermediation chain "can be infinite".[305] This means that 'collateral reuse' can mechanically increase the supply of available securities back into the marketplace, which can then be used for clearing, settlement and financing purposes (rather than sitting idle on an

300 T Dilks and A Datoo, "Danger Signs" (2016) Lexology.

301 Chapter 3, section 5 extensively discusses the issues surrounding collateral reuse and its velocity. It would be trite to cover the same ground twice. For a more in-depth analysis of collateral reuse, please refer to Chapter 2. In addition, Article 3 (12) SFTR defines collateral reuse as: "the use by a receiving counterparty, in its own name and on its own account of another counterparty, including any natural person, of financial instruments received under a collateral arrangement, such use comprising transfer of title or exercise of a right of use in accordance with Article 5 of Directive 2002/47/EC but not including the liquidation of a financial instrument in the event of default of the providing counterparty".

302 Chapter 3, section 5 "The Velocity of Financial Collateral" provides a visual depiction of the reuse of financial collateral.

303 This was discussed in Chapter 6.

304 Bank for International Settlements, "Repo Market Functioning" (2017) 59 CGFS Papers 1 at 6, available at: https://www.bis.org/publ/cgfs59.htm.

305 Cullen (n 27) 85 at 94-95.

investor's balance sheet, thus optimising a portfolio's yield).[306] The reuse of financial collateral has indeed become an essential component of modern finance – it not only facilitates leverage; it also facilitates liquid and efficient markets.[307]

4.3.4.2 Risks of collateral reuse

However, the reuse of financial collateral also poses significant risk and often comes under the regulatory spotlight from a financial stability perspective.[308] There is concern that reusing financial collateral creates complex intermediation chains within the financial sector, which subsequently gives rise to systemic risk. In particular, the long chains of intermediation often lack transparency and, therefore, heightened risk, particularly in relation to the amplification of contagion. The reuse of the same financial collateral security increases the interconnectedness among market participants, thereby contributing to the formation of contagion and potential spillover effects. Since the Global Financial Crisis, market participants are now forced to use financial collateral to secure transactions in order to obtain funding in the markets. This financial collateral can then be reused to secure or guarantee new credit transactions, which generates dynamic collateral chains whereby the same security is used multiple times over. This leads to an increase in leverage and strengthens the procyclical nature of the financial system making it more vulnerable to runs and sudden deleveraging.

Another key concern is market risk, which directly translates into the price volatility of the financial collateral. The reuse of the same financial collateral security can, therefore, create systemic contagion, particularly if the market becomes stressed and an entity within the chain experiences financial distress. Given that it is often unclear as to the cumulative build-up of exposures along the intermediation chain, default would automatically activate a number of "competing claims to the same asset", which would potentially leave parties within the intermediation chain from being able to reclaim any losses leading to subsequent additional fails.[309] In addition, the market risk arising from

306 The Global Financial Markets Association and International Capital Markets Association, "The GFMA and ICMA Repo Market Study: Post-Crisis Reforms and the Evolution of the Repo and Broader SFT Markets" (December 2018) 1 at 33-34.

307 See generally, P Mehrling, Z Pozsar, J Sweeney and D H Neilson, "Bagehot was a Shadow Banker: Shadow Banking, Central Banking, and the Future of Global Finance" (2013).

308 See generally, Financial Stability Board (n 126); See also, Financial Stability Board, "Transforming Shadow banking into Resilient Market-based Finance – Non-Cash Collateral Re-Use: Measures and Metrics" (25 January, 2017); Article 15 SFTR.

309 Pistor (n 78) 15. See also, The International Swaps and Derivatives Association, the Association for Financial Markets in Europe, the Futures Industry Association, the International Capital Markets Association and the International Securities Lending Association, "Information Statement in accordance with Article 15 of the Securities Financing Transactions Regulation" (2020) 1 at 3, available at: https://www.sifma.org/resources/general/sifma-amg-information-statement-in-accordance-with-article-15-of-the-securities-financing-trans-

the price volatility of the financial collateral exacerbates movements in margin. If the value of the financial collateral falls then margins/haircuts rise. Therefore, the money multiplier as described above works in reverse and causes a deleveraging effect – the cumulative margins/haircuts on reused financial collateral essentially become more sizeable. In periods of market stress, there will be simultaneous demands for the return of securities and the reuse of financial collateral will undermine these demands on a timely basis, incentivising parties to run.[310] Such a situation can potentially start a domino chain of events leading to fire sales and, consequently, further crises.[311]

4.3.4.3 The Article 15 information statement

In an attempt to mitigate the risks associated with collateral reuse, Article 15 of the SFTR requires the collateral taker to duly inform the collateral giver of the risks and consequences that may be involved in permitting the reuse of the posted financial collateral.[312] Market participants must adhere "to at least both the following conditions":[313]

1. Risks and consequences have been communicated in writing;[314] and,
2. Prior express consent of the providing counterparty has been granted.[315]

To assist relevant counterparties in their compliance, the so-called "Article 15 SFTR Information Statement" has been introduced and published by five key industry associations.[316] The Article 15 SFTR Information Statement "is a template for use by market participants to inform their counterparties of the general risks and consequences that may be involved in consenting to a right of use of collateral provided under a security collateral arrangement or of concluding a title transfer collateral arrangement".[317]

In essence, the goal of the Article 15 SFTR Information Statement is to inform everyone in the intermediation chain, in standard wording, of the risks and

action-regulation/; Financial Stability Board (n 308) 1 at 7.

310 Cullen (n 27) 85 at 86.

311 Autorité des Marches Financiers, "The Reuse of Assets: Regulatory and Economic Issues" (9 November, 2016) 1 at 2. See also, M Singh, "Velocity of Pledged Collateral: Analysis and Implications" (2011) IMF Working Paper 1 at 22.

312 Article 15 (a) and (b) SFTR.

313 Article 15 (1) SFTR.

314 Article 15 (1) (a) SFTR.

315 Article 15 (1) (b) SFTR.

316 See generally, the International Swaps and Derivatives Association, the Association for Financial Markets in Europe, the Futures Industry Association, the International Capital Markets Association and the International Securities Lending Association (n 309).

317 International Swaps and Derivatives Association, "SFTR Information Statement" (2016), available at: https://www.isda.org/book/sftr-information-statement/. See also, Article 2 (1) (b) and (c) FCD. A deeper explanation as regards the specific property law rights in described in Chapter 3.

consequences involved with the reuse of financial collateral. In theory, such a requirement seems prudent. However, the reality is less compelling. It is indeed debatable whether the Information Statement serves any significant benefit in mitigating the broader systemic concerns associated with the reuse of financial collateral beyond meeting the Article 15 SFTR requirements.[318] The reasons are arguably twofold. Firstly, the wording in the Article 15 SFTR Information Statement is standardised and it is not necessary to tailor the Information Statement to the particular transaction – although it is possible to tailor the document should the parties wish.[319] This means that important risks, often of a systemic nature, such as margin, haircuts, leverage and pro-cyclicality, may be missing.[320]

Secondly, it is often argued that Article 15 of the SFTR is a provision that could restrain excessive leverage and procyclicality *de facto* implementing mandatory margin requirements.[321] For instance, the SFTR obliges counterparties to securities financing transactions to provide their consent to the reuse of the financial collateral they post. Refusal to give such consent, has the potential to limit, albeit to a certain extent, the build-up of excessive leverage. However, this provision may essentially be undermined when it becomes evident that, pursuant to the SFTR, separate consent is not required if the financial collateral is provided by way of a title transfer.[322] It is indeed noteworthy that market practice in the EU illustrates that all repo transactions and the majority of securities lending transactions are concluded by way of title transfer.[323] As such, ownership rights pass in the financial collateral when it is transferred from one party to another party. This means that the right to reuse the financial collateral is not a discretionary right but an automatic right, arising from ownership.[324]

4.4 The AIFMD

The AIFMD puts in place a comprehensive framework for the regulation of Alternative Investment Fund Managers in the EU.[325] It was adopted by the

318 Dilks and Datoo (n 300).
319 International Swaps and Derivatives Association (n 317).
320 The International Swaps and Derivatives Association, the Association for Financial Markets in Europe, the Futures Industry Association, the International Capital Markets Association and the International Securities Lending Association (n 309).
321 European Systemic Risk Board (n 26) 1 at 51.
322 Article 15 (1) (a) (ii) SFTR.
323 European Systemic Risk Board (n 26) 1 at 51 (footnote 40).
324 The Global Financial Markets Association and International Capital Markets Association, "The GFMA and ICMA Repo Market Study: Post-Crisis Reforms and the Evolution of the Repo and Broader SFT Markets" (December, 2018) 1 at 33-34.
325 The AIFMD framework is made up of the following EU legislation: Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment

European Parliament on 11 November 2010, and published in both the *Official Journal of the European Union* on 1 July 2011 and in the *Official Bulletin* on 21 July 2011.[326]

The AIFMD includes private equity funds, hedge funds, real estate funds and infrastructure funds as Alternative Investment Funds that do not fall within the scope of Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to the UCITS Directive.[327] In this context, an Alternative Investment Fund can be any collective investment undertaking which raises capital from a number of investors, invests this capital in accordance with a defined investment policy for the benefits of those investors, and does not require authorisation pursuant to the UCITS Directive.[328] In addition, the AIFMD provides that any authorised Alternative Investment Fund Manager may market shares of an EU Alternative Investment Fund to professional investors in any Member State using a 'passport' mechanism.[329]

The AIFMD prescribes specific rules relating to Alternative Investment Fund Managers who "are responsible for the management of a significant amount of invested assets…, account for significant amounts of trading in markets for financial instruments, and can exercise an important influence on markets and companies in which they invest".[330] It is important to distinguish at this juncture, between an Alternative Investment Fund (which represents the entity

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Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU No 1095/2010) ("AIFMD"); Commission Delegated Regulation (EU) No 231/2013 of 19 December 2012 supplementing Directive 2011/61/EU of the European Parliament and of the Council with regard to exemptions, general operating conditions, depositories, leverage, transparency and supervision; Commission Implementing Regulation (EU) No 447/2013 of 15 May 2013 establishing the procedure for AIFMs which choose to opt-in under Directive 2011/61/EU of the European Parliament and Council; Commission Implementing Regulation (EU) No 448/2013 of 15 May 2013 establishing a procedure for determining the Member State of reference of a non-EU AIFM pursuant to Directive 2011/61/EU of the European Parliament and of the Council; and, Commission Delegated Regulation (EU) No 694/2014 of 17 December 2013 supplementing Directive 2011/61/EU of the European Parliament and of the Council with regard to regulatory technical standards determining types of alternative investment fund managers. See also, European Securities and Markets Authority, "Questions and Answers: Application of the AIFMD" (16 December, 2016), available at: https://www.esma.europa.eu/sites/default/files/library/2016-1669_qa_on_aifmd.pdf.

326 Article 70 of AIFMD. In addition, Legislatures of the respective Member State must have transposed the AIFMD into their national law by 22 July 2013 – see Article 66 (1) AIFMD. See also, D A Zetzsche, "Introduction: Overview, Regulatory History and Technique, Transition", in D A Zetzsche (ed), The Alternative Investment Fund Managers Directive: European Regulation of Alternative Investment Funds (2012) 1 at 6.

327 UCITS will be discussed in greater detail below. See also, Recital 3 AIFMD. See also, OJ l 302, 17.11.2209, page 32.

328 European Securities and Markets Authority (n 277) 1 at 40.

329 Articles 32 (1) and 39 (1) and (2) AIFMD.

330 Recital 1 AIFMD.

by which the assets are held) and an Alternative Investment Fund Manager (that manages the fund's assets and dictates the investment strategy). This distinction is important because the Alternative Investment Fund is generally based *'offshore'* in a tax efficient jurisdiction and therefore beyond the reach of the national regulator, whereas Alternative Investment Fund Managers are typically based *'onshore'* and are increasingly subject to regulatory oversight. For this reason, the AIFMD "does not regulate" Alternative Investment Funds.[331]

4.4.1 Rationale of the AIFMD

This AIFMD was prompted as part of a wider effort "to regulate the so-called shadow banking system" undertaken by the G20 nations following the Global Financial Crisis.[332] The adoption of the AIFMD "means that hedge funds and private equity funds will no longer operate in the regulatory void outside the scope of regulators… The new regime adds to the overall stability of our financial system".[333] The promotion of financial stability and the mitigation of systemic risk are therefore key concerns and the AIFMD is said to facilitate this by establishing a "stringent regulatory… framework… governing the authorisation and supervision of AIFMs [Alternative Investment Fund Managers] in order to provide a coherent approach to the related risks and their impact on investors and markets" in the EU.[334]

Alternative Investment Fund Managers have become "very significant actors in the European financial system" and the strategies employed by Alternative Investment Fund Managers are vulnerable to systemic risk, such as the risk posed by the rapid build-up of leverage.[335] As such, it was deemed "necessary to establish a framework capable of addressing those risks taking into account the diverse range of investment strategies and techniques employed by" them:[336]

> *"[H]edge funds have contributed to asset price inflation and the rapid growth of structured credit markets. The abrupt unwinding of large, leveraged positions in response to tightening credit conditions has had a procyclical impact on declining markets and may have impaired market liquidity. Funds of hedge funds have faced serious liquidity problems: they could*

331 Recital 10 AIFMD. See also, H McVea, "Targeting hedge funds and 'repo runs'", in I H Y Chiu and I G MacNeil, Research Handbook on Shadow Banking Legal and Regulatory Aspects (2018) 177 at 184.

332 R Wilhelmi and M Bassler, "AIFMD, Systemic Risk and the Financial Crisis", in D A Zetzsche (ed), The Alternative Investment Fund Managers Directive: European Regulation of Alternative Investment Funds (2015) 21 at 35. See also, Recital 89 AIFMD.

333 J M Barroso, "European Commission statement at the occasion of the European Parliament vote on the directive on hedge funds and private equity" (11 November, 2010).

334 Recitals 1, 2, 4 and 49 AIFMD.

335 Recital 49 AIFMD.

336 Recital 3 and 49 AIFMD.

not liquidate assets quickly enough to meet investor demands to withdraw cash, leading to some funds of hedge funds having to suspend or otherwise limit redemptions".[337]

The European Commission has therefore deemed the introduction of the AIFMD "necessary to ensure that leverage is used responsibly and that the associated risks are understood and managed" effectively.[338]

4.4.2 Leverage

Under the AIFMD, Alternative Investment Fund Managers rely on collateral transactions to obtain leverage and conduct their financial activities.[339] As discussed in Chapter 4, the reciprocal of leverage is margin. Therefore, margin limits the amount of leverage a financial institution can obtain – the lower the margin the higher the leverage and the higher the margin the lower the leverage. Therefore, restricting leverage is "functionally equivalent to implementing mandatory margin requirements".[340]

Leverage is defined in the AIFMD as "any method by which an AIFM [Alternative Investment Fund Manager] increases the exposure of an AIF [Alternative Investment Fund] it manages whether through borrowing cash or securities, or leverage embedded in derivative positions or by any other means".[341] The AIFMD provides for a lighter regime for Alternative Investment Fund Managers when the cumulative Alternative Investment Fund under management falls below the threshold of:

1. € 100 million – if the AIF uses leverage;[342] or,
2. € 500 million, if the AIF does not use leverage and does not grant investors redemption rights for a period of five years.[343]

The use of leverage is to be disclosed to investors as well as to supervisory authorities.[344] The purpose of disclosure to supervisory authorities consists of identifying and mitigating systemic risk. Under the AIFMD, Alternative

337 European Commission, "Proposal for a Directive of the European Parliament and of the Council on Alternative Investment Fund Managers and Amending Directives 2004/39/EC and 2009" (2009), available at: https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:52009PC0207.

338 European Commission, "Directive on Alternative Investment Fund Managers ('AIFMD'): Frequently Asked Questions" (11 November, 2010).

339 Recitals 3, 34, 43 and 89 AIFMD. See also, Nabilou and Pacces (n 282) 7 at 32; McVea (n 331) 177 at 182.

340 European Systemic Risk Board (n 26) 1 at 55.

341 Article 4 (1) (v) AIFMD. See also, European Securities and Markets Authority (n 277) 1 at 40.

342 Recital 17 and Article 3 (2) (a) AIFMD.

343 Recital 17 and Article 3 (2) (b) AIFMD.

344 Recital 49 AIFMD.

Investment Fund Managers set a maximum level of leverage which they may employ on behalf of every Alternative Investment Fund they manage, as well as the extent of the collateral reuse right that could be granted under the leveraging arrangement.[345] Upon setting the maximum leverage level, the Alternative Investment Fund Manager should, *inter alia*, take the following into account:[346]

i The extent to which the leverage is collateralised;
ii The type of AIF;
iii The sources of leverage of the AIF;
iv The investment strategy of the AIF;
v The asset/liability ratio;
vi The scale, nature and extent of the activity of the AIFM on the markets concerned; and,
vii Any other interlinkage.

The AIFMD does not set any hard limits on the use of leverage but it does require the asset manager to implement "reasonable" leverage limits to the funds it manages.[347] This means that appropriate leverage levels are set by the Alternative Investment Fund Manager on a transaction-by-transaction basis.[348] This implies that while leverage has to be disclosed, levels of leverage can theoretically be unlimited.[349] Much criticism was voiced during the legislative process with regard to addressing Articles 25 (3) and (4) of the AIFMD of the European Commission's proposal, which contained entitlement of the European Commission and the Competent Authorities to adopt implementing measures imposing general harmonised limits to the level of employed leverage.[350] This approach was not followed as it was argued that stricter reporting requirements should apply to Alternative Investment Funds that are "substantially leveraged".[351] Under Article 25 (3) and (4) of the AIFMD, competent authorities may impose leverage restrictions in exceptional circumstances "in order to ensure the stability and integrity of the financial system".

345 Article 15 (4) AIFMD.
346 Article 15 (4) AIFMD.
347 Article 25 (3) AIFMD. See also, A M Agresti and R Brence, "Statistical work on shadow banking: development of new datasets and indicators for shadow banking" (2017) *Bank for International Settlements* 1 at 11.
348 Articles 25 (3) and (4) AIFMD.
349 Recital 49 AIFMD. See also, H Nabilou, *The Law and Economics of Hedge Fund Regulation* (2014) 29.
350 N Maloney, *EU Securities and Financial Markets Regulation* (2014) 302.
351 Article 24 AIFMD.

This means that the National Competent Authorities of the Member State may impose additional limits on the level of leverage that Alternative Investment Fund Managers employ.[352]

4.4.3 AIFMD: some observations

Whilst part of the broader concept to regulate leverage and the associated systemic risks, the AIFMD has divided the academic community into three broad camps. Firstly, the AIFMD has been argued to being both "ill-conceived and badly drafted".[353] Of particular concern is Alternative Investment Fund involvement in collateral transactions and the use of leverage, which can contribute to the transmission of systemic risk.[354] Secondly, the AIFMD has been labelled a "success" and therefore an important "step in the right direction" bringing about important changes to leverage and transparency requirements.[355] Thirdly, commentators argue that Alternative Investment Funds "pose no systemic threat" to the wider financial system and as a result, the very introduction of the AIFMD has been heavily criticised:[356]

> *"Arguments in favour of increased hedge fund regulation in order to lower systemic risk are flat wrong. Such arguments fail to consider that hedge funds pose no systemic threat because of the incredible diversity in their investment strategies, an assertion bolstered by evidence from decades of experience with hedge funds".*[357]

This view is corroborated by the Managed Funds Association, which represents the alternative investment industry, arguing that Alternative Investment Funds are not "a cause of systemic risk" and while "often thought of as highly leveraged… are, in fact, less leveraged than many other financial institu-

352 Article 25 (3) AIFMD.

353 George Parker, Financial Times Political Editor, interviewed George Osborne, then Shadow Chancellor, on 17 July, 2009, available at: https://www.ft.com/content/f199e7c8-7447-11de-8ad5-00144feabdc0.

354 McVea (n 331) 177 at 180.

355 J Buckley and D Howarth "Internal Market: Regulation the So-Called 'Vultures of Capitalism'" (2011) *49 Journal of Common Market Studies 123 at 139.*

356 J R Macey, *Corporate Governance: Promises Kept, Promises Broken* (2008) 268-269. See also, McVea (n 331) 177 at 178. See also, D Walters, "Hedge Funds and Private Equity" (2008) *Financial Services Authority* where it is argued that AIFs "do not pose a systemic risk to financial stability"; N Terzi, "Are Hedge Funds a Potential Threat to Financial Stability" (2010) *2 Scientific Papers of the University of Pardubice* 328 at 329.

357 Macey (n 356) 268-269. See also, McVea (n 331) 177 at 178. This view was alluded to by both De Larosiere Report and the Turner Review. On this see, J de Larosiere, "The High-Level Group of Financial Supervision in the EU" (25 February, 2009) European Commission 1 at 23 (paragraph 86); Turner (n 7) 1 at 72-73.

tions".[358] Yet one only has to recall the failure of highly leveraged hedge fund Long-Term Capital Management in 1998 and the 2007 collapse of two Bear Stearns Hedge Funds – argued to being "the early harbinger of the financial crisis" – to appreciate that in both events, the aggressive use of leverage precipitated failure.[359] One therefore has to wonder why commentators claim that Alternative Investment Funds pose no systemic threat to financial stability.

4.5 UCITS

Since the Global Financial Crisis, international work in relation to shadow banking, coordinated by the Financial Stability Board, identified certain areas of investment funds that required closer scrutiny.[360] In particular, "the money-market fund reform… has drawn the UCITS sector into the shadow banking reform agenda".[361] UCITS and their use of collateral transactions was flagged as potentially problematic due to raised concerns in relation to hidden leverage, runs and therefore systemic risk.[362]

UCITS is a European harmonised regulated fund product that can be sold on a cross-border basis within the European Economic Area based on its authorisation in one EU Member State.[363] This means that funds authorised in one EU Member State can be marketed in another EU Member State via a passport mechanism.[364] Underpinning UCITS is a comprehensive legal framework for the regulation of harmonised investment funds within the EU. Originally introduced in 1985, the UCITS rules have been revised several times, most

358 Managed Funds Association, "MFA Comments on Second FSB/IOSCO Consultation Document – Methodologies for Identifying Non-Bank Non-Insurer Globally Systemically Important Financial Institutions" (29 May, 2015) 1 at 7, available at: https://www.iosco.org/library/pubdocs/479/pdf/Managed%20Funds%20Association%20(MFA).pdf.

359 President's Working Group, *Hedge Funds, leverage and Lessons of Long-Term Capital Management* (1999), available at: https://www.treasury.gov/press-center/press-releases/Pages/report3097.aspx. See also, G K Zestos, *The Global Financial Crisis: From US subprime mortgages to European sovereign debt* (2016) 210; M Odekon, *Booms and Busts: An Encyclopedia of Economic History from the First Shock* (2015) 72 – 74.

360 European Commission, "Consultation Document: Undertaking for Collective Investment in Transferable Securities" (26 July 2012) 1 at 2, available at: https://ec.europa.eu/finance/consultations/2012/ucits/docs/ucits_consultation_en.pdf. See also, Finance Watch, "Answer to the public consultation from the European Commission on UCITS" (18 October 2012), available at: https://www.finance-watch.org/wp-content/uploads/2018/08/121018_Answer_to_EC_Consult_UCITS.pdf.

361 Maloney (n 350) 260.

362 European Commission, "Green Paper on Shadow Banking" (2012) *COM/2012/0102final* at paragraphs 4, 6.3 and 7.2, available at: https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A52012DC0102. See also, European Commission (n 360) 1 at 2-3.

363 UCITS also enjoy a high level of recognition in many non-European Economic Area countries, such as South Africa, Asia and South America.

364 Recital 5 UCITS as regards the clarification of certain definitions.

recently through the UCITS V Directive, which came into force on 18 March 2016.[365]

With the enactment of the AIFMD, investment funds in Europe are classified into two broad categories, namely UCITS and Alternative Investment Funds. In general, investment funds are investment products created for the sole purpose of gathering investors' capital and investing that capital collectively through a portfolio of financial instruments such as bonds, equities and other securities.[366] The UCITS category includes mutual funds and pension funds – these funds are available to retail investors and one of the distinguishing features of UCITS from Alternative Investment Funds is that UCITS raise funds from the public, while Alternative Investment Funds raise capital privately.[367]

365 The UCITS framework is made up of the following EU legislation: Directive 2014/91/EU of the European Parliament and of the Council of 23 July 2014 amending Directive 2009/65/EC on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) as regards depositary functions, remuneration policies and sanctions; Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities - This is a 'framework' Level 1 Directive, which has been supplemented by technical implementing measures (as follows); Commission Directive 2007/16/EC of 19 March 2007 implementing Council Directive 85/611/EEC on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) as regards the clarification of certain definitions; Commission Directive 2010/43/EU of 1 July 2010 implementing Directive 2009/65/EC of the European Parliament and of the Council as regards organisational requirements, conflicts of interest, conduct of business, risk management and content of the agreement between a depositary and a management company; Commission Regulation (EU) No 583/2010 of 1 July 2010 implementing Directive 2009/65/EC of the European Parliament and of the Council as regards key investor information and conditions to be met when providing key investor information or the prospectus in a durable medium other than paper or by means of a website; Commission Directive 2010/42/EU of 1 July 2010 implementing Directive 2009/65/EC of the European Parliament and of the Council as regards certain provisions concerning fund mergers, master-feeder structures and notification procedure; Commission Regulation (EU) No 584/2010 of 1 July 2010 implementing Directive 2009/65/EC of the European Parliament and of the Council as regards the form and content of the standard notification letter and UCITS attestation, the use of electronic communication between competent authorities for the purpose of notification, and procedures for on-the-spot verifications and investigations and the exchange of information between competent authorities; and, Commission Implementing Regulation (EU) 2016/1212 of 25 July 2016 laying down implementing technical standards with regard to standard procedures and forms for submitting information in accordance with Directive 2009/65/EC of the European Parliament and of the Council. See also, European Securities and Markets Authority, "Fund Management" (2020) available at: https://www.esma.europa.eu/regulation/fund-management.

366 European Commission, "Investment funds: EU laws and initiatives relating to collective investment funds" (accessed 27 April, 2020) available at: https://ec.europa.eu/info/business-economy-euro/growth-and-investment/investment-funds_en.

367 Nabilou (n 349) 296-297.

A defining feature of the UCITS framework is characterised by the offer to investors of on-demand liquidity. In particular, a "UCITS shall repurchase or redeem its units at the request of any unit-holder".[368] To guarantee the liquidity of the UCITS product are the specific portfolio diversification requirements as outlined under Article 52, which is reinforced by the list of eligible and non-eligible assets as specified under Article 50.[369] For instance, Article 52 (1) and (2) state that a UCITS shall invest no more than 5% of its assets in transferable securities or money market instruments issued by the same body and, the risk exposure to a counterparty of the UCITS in an OTC derivative transaction shall not exceed 10%.[370]

However, no financial institution is immune to risk. In fact, it has been noted that possible regulatory shortcomings in the UCITS sector need to be addressed.[371] Mark Carney has warned of the potential fragilities in the sector and stated that UCITS are a potential source of systemic risk.[372] Because the UCITS framework offers 'on-demand liquidity' to investors – what happens if leveraged UCITS funds have assets that "fundamentally aren't liquid or might become illiquid in a downturn"?[373] Such a situation arose in June 2019 where the UCITS sector had "some $30 trillion tied up in difficult-to-trade investments".[374] This caused Mark Carney to state that UCITS "funds are built on a lie, which is you can have daily liquidity… The damage of that 'lie' for financial stability is that it leads to the expectation for individuals that it's not that different from having money in a bank".[375] Such a situation is very similar to a classic bank run where funds can be withdrawn – *en-masse* – and financial institutions are therefore forced to deleverage thereby exacerbating systemic risk. An infinitely preferable approach would arguably be regulation that better aligns the redemption terms with the actual liquidity of the underlying investment.

368 Article 84 (1) UCITS.

369 Articles 50 and 52 UCITS.

370 Article 52 (1) and (2) UCITS.

371 European Central Bank, "Green Paper on the enhancement of the EU framework for investment funds" (2005). See also, L M Vivar, M Wedow and C Wiestroffer, "Is leverage driving procyclical investor flows? Assessing investor behaviour in UCITS bond funds" (2019) *European Central Bank.*

372 A Massa and C Torres, "Liquidity and a "Lie": Funds Confront $30 Trillion Wall of Worry" (27 June, 2019) *Bloomberg* (quoting Mark Carney). See also generally, Vivar *et al* (n 371).

373 C Giles and O Walker, "BOE governor Mark Carney calls for change to investment regulation" (26 June, 2019) *Financial Times* (quoting Mark Carney), available at: https://www.ft.com/content/e6d5bf04-980b-11e9-8cfb-30c211dcd229.

374 Massa and Torres (n 372) (quoting Mark Carney). See also generally, Vivar *et al* (n 371).

375 C Giles and O Walker, "BOE governor Mark Carney calls for change to investment regulation" (26 June, 2019) *Financial Times* (quoting Mark Carney), available at: https://www.ft.com/content/e6d5bf04-980b-11e9-8cfb-30c211dcd229.

4.5.1 Leverage

UCITS funds tend to generally employ traditional investment strategies with low levels of leverage. They often "invest in marketable securities and have to comply with leverage restrictions under the UCITS Directive.[376] Financial "leverage, meaning leverage (debt) obtained through outright borrowings, is limited to 10% of net asset value and can only be carried out on a temporary basis.[377] Furthermore, 'global exposures' gained through the use of derivatives are restricted to 100% of net asset value, *de facto* limiting synthetic leverage in UCITS".[378] As noted by the European Systemic Risk Board:

> *"The UCITS Directive includes specific limits on leverage. UCITS may borrow up to a limit of 10% of their net assets, and only on a temporary basis, for example for liquidity management purposes. Also, exposures related to derivatives and SFTs cannot exceed the total net value of the portfolio. This means that leverage from borrowing, derivatives and SFTs cannot exceed 2.1 times the UCITs Net Asset Value. Finally, ESMA guidelines on… UCITS prescribes that collateral collected in the course of OTC derivative and SFT transactions must be of high quality, liquid and that assets that exhibit high price volatility should not be accepted as collateral unless suitably conservative haircuts are in place".*[379]

Similar to Alternative Investment Funds, provisions in the UCITS Directive concerning leverage levels can have the same effect as implementing mandatory margin requirements.[380] The UCITS framework is indeed far more restrictive and robust in relation to leverage than the AIFMD – it is however unfortunate that mandatory margin requirements are not directly addressed.

4.5.2 Enforcement

Under the UCITS, there is a division of responsibility between home and host regulators as to enforcement and supervision against a UCITS. As a general rule, authorities of the "home Member State shall have the power to take action against the UCITS if it infringes any law, regulation or administrative provision".[381] The home Member State is responsible for ensuring that the UCITS "comply with the rules… [*inter alia*] including the calculation of total exposure and leverage".[382]

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376 Article 19 (3) (f) UCITS.
377 Articles 2 (1) (p) (i) (ii), 48 (1) and (2) (b) and 83 (2) (a) UCITS.
378 European Central Bank, "Is Leverage Driving Procyclical Investor Flows? Assessing Investor Behaviour in UCITS Bonds Funds" (2019), available at: https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin/html/ecb.mpbu201910_4~a9c04beceb.en.html#toc2. See also generally, Vivar *et al* (n 371).
379 European Systemic Risk Board (n 26) 1 at 55.
380 *Ibid.*
381 Article 108 (1) UCITS.
382 Article 19 (3) (c) UCITS.

Yet the host Member State also has a role to play in supervision and enforcement of UCITS. If the infringement falls within the scope of Articles 92 and 94 of UCITS, then it would be a host Member State issue.[383] It is indeed necessary for host Member States to be responsible for certain forms of supervision and enforcement given that the conduct of the regulated entity will likely affect the nationals of the host Member State. For example, host Member States may be able to supervise and enforce against a hosted UCITS in respect of issues dealing with dissemination of information such as the key investor information document, prospectuses and payments to unit holders upon redemption.[384]

An important aspect of the prospectus is to "inform investors of the collateral policy of the UCITS. This should include permitted types of collateral, level of collateral required and haircut policy".[385] As noted by ESMA, "any collateral received other than cash should be highly liquid and traded on a regulated market or multilateral trading facility with transparent pricing in order that it can be sold quickly".[386] Article 46 of the ESMA guidelines requires UCITS to have a clear haircut policy. The parameters that influence the haircut policy are decided per transaction and include factors such as counterparty risk, maturity of the security, its liquidity and potential volatility.[387]

5 CONCLUSION

To conclude, within the EU shadow banking sector, the need for a more robust margin framework could not be more profound. Margin was identified as a source of systemic risk long before the 2007/2008 Global Financial Crisis. Since the crisis, and the decade that has followed, little has been achieved to mitigate the procyclical effects that margin poses within the EU shadow banking sector. The fact that margin not only contributes to financial stability by absorbing losses and helping to manage financial risk, it does not exclude it nor excuse it from equally being a source of systemic risk. As such, finding the optimal balance of preserving financial stability, mitigating systemic risk and preventing market failures is, indeed, a gargantuan task.

However, despite little being done to mitigate the procyclical and systemic effects of margin, legal and regulatory mechanisms do exist. For example, privately negotiated contracts by way of the master agreements largely oversee collateral transactions within the EU shadow banking sector. Master agreements

383 Article 108 (1) UCITS.
384 Recital 63 and Articles 92 and 94 UCITS.
385 European Securities Markets Authority, "Guidelines for competent authorities and UCITS management companies" (2014) 1 at 11.
386 Article 43-a of the ESMA Guidelines for competent authorities and UCITS management companies (2012).
387 *Ibid* at Article 46.

allow market participants greater flexibility to tailor their agreement, such as the setting of margin and the type and amount of financial collateral. It is often noted that market participants favour legal certainty and because collateral transactions are almost always of a cross-border nature, master agreements have the ability to transcend national boundaries, often where public law cannot. Yet master agreements do not come without complications. Market participants with an intimate knowledge of the market, tailor agreements with a view to maximising profits for themselves whilst minimising benefits elsewhere. Arguably, they do not take into account the wider systemic implications of their actions on the broader economy.

With regard to public law, it is submitted that more needs to be achieved in this area – particularly with regard to repos and securities lending transactions. While derivatives have arguably made substantial progress with regard to implementing mandatory margin requirements (provided parties are within the scope of the EMIR and the RTS), reforms in relation to repos and securities lending are far from convincing. For instance, the SFTR, while potentially a valuable data source, does very little in relation to the regulation of margin. The AIFMD, does impose a 'light touch' leverage regime on Alternative Investment Fund Managers. However, it is up to the manager of the fund to set the leverage level they believe to be appropriate. The UCITS Directive does go further than the AIFMD by restricting the amount of leverage a UCITS can obtain. It is however unfortunate, that margin is not tackled head on. The Financial Collateral Directive, which was discussed in Chapter 3, has implications for margin in an insolvency setting, in particular close-out netting and margining. These mechanisms allow market participants within the scope of the Financial Collateral Directive a special insolvency treatment by avoiding the traditional insolvency stays.