Collateral transactions and shadow banking

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3 Financial collateral[1]

1 Introduction

> *"The functioning of the wholesale financial markets is entirely dependent upon the existence of efficient means for providing financial collateral as security. The management of risk would be impossible without it. It is therefore essential to have legal rules which make the grant of such security simple and its consequences predictable".*[2]

The Global Financial Crisis was a watershed for the way in which the financial sector functions. One of the most significant changes post Global Financial Crisis is the flight to security. The future of modern finance has indeed become a "collateral-based banking system" where the plumbing of the financial sector is lubricated with cash or cash equivalent financial collateral, such as highly liquid fungible[3] securities in lieu of cash to settle intra-day debits, credits and other obligations.[4]

Being the source of secured funding with market counterparties, financial collateral underpins various financial transactions within the EU shadow banking sector, namely repos, securities lending and derivatives transactions –

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1 The chapter contains and builds upon the following work previously published by the author: R A Spence, "Corporate Finance and the Role of Lawyers" (2017) 3 (2) *Edinburgh Student Law Review* 102-113. Also, R Spence, "The Vulnerabilities of Debt in the Shadow Banking Sector" (28-29 October, 2019) *Financial Stability Conference Paper, Berlin* 1-33, available at: http://financial-stability.org/wp-content/uploads/2019/11/2019_FSC-WS_PAPER_Spence_Vulnerabilities-of-debt-in-the-shadow-banking-sector.pdf; K Parchimowicz and R Spence, "Basel IV Postponed: A Chance to Regulate Shadow Banking?" (2020) 13 (2) *Erasmus Law Review*.

2 The Rt Hon Lord Hoffmann, PC, The Law of Financial Collateral (2016) Foreword v.

3 The term 'fungible' relates to the interchangeable nature of the securities used as financial collateral.

4 Bank of England, "Centre for Central Banking Studies" (2018) 1 at 14, available at: https://www.bankofengland.co.uk/-/media/boe/files/ccbs/ccbs-prospectus-2018.pdf?la=en&hash=CC52F29880CDDAE54988A3F24065123B0EB633F5. See also, P Mehrling, Z Pozsar, J Sweeney and D Neilson, "Bagehot was a Shadow Banker: Shadow Banking, Central banking, and the Future of Global Finance" (2012) *Institute for New Economic Thinking* 1 at 4 – the authors state that modern finance or the shadow banking system can also be termed the "collateral-based credit system"; see generally, J Benjamin, G Morton and M Raffan, "The future of securities financing" (2013) 7 (1) *Law and Financial Markets Review.*

often collectively referred to as "collateral transactions".[5] Liquid and safe financial collateral is now the main 'currency' used within the shadow banking sector,[6] and, as a driver of credit creation that is equally as important as money itself, several commentators now describe financial collateral as the "lifeblood of the modern economy".[7]

With the progress of financial innovation, the use of financial collateral has become an integral component of the global financial system.[8] The heightened use of financial collateral is a response to the need for high quality and liquid money like claims that are exchangeable at par and on demand with central bank money. Consequently, financial collateral is now one of the main building blocks upon which the financial markets are constructed.[9]

There are many reasons why financial collateral plays a central role within the EU shadow banking sector. As an important hedging mechanism, the use of financial collateral is employed as one of the most widespread counterparty credit risk mitigation techniques. Depending on the quality of the financial collateral and the credit risk of the counterparty, financial collateral is also used as a benchmark for applying 'margin', adding a further layer of security to the transaction.[10] Margin is the price difference between the market value of the securities posted as financial collateral and the value of the contracted for assets/cash. Financial collateral is the underpinning mechanism that

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5 M Haentjens (ed), Y Diamant, J Siena, R Spence and A Zacaroli, *Financial Collateral: Law and Practice* (2020) 89. See also, M Haentjens and P de Gioia-Carabellese, *European Banking and Financial Law* (2020) 229. See also, the Financial Collateral Directive, 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements as amended by Directive 2009/44/EC of the European Parliament and of the Council of 6 May 2009 amending Directive 98/26/EC on settlement finality in payment and securities settlement systems and Directive 2002/47/EC on financial collateral arrangements as regards linked systems in credit claims ("FCD"), where the term "collateralised finance arrangements" is used to describe the types of financial collateral that fall within the scope of the FCD. In addition, the term "securities financing transactions" is often used to describe repurchase agreements and securities lending transactions – on this see generally the Securities Financing Transactions 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"). For the sake of convenience and consistency, the term "collateral transactions" will be used for the remainder of this thesis unless otherwise stated.

6 J Wilmot, J Sweeney, M Klein, A Plant, J Schwartz, Z Shi and W Zhao, "When collateral is king" (15 March, 2012) *Market Focus: Global Strategy Research* 1 at 1-3.

7 *Ibid* at 1-3. See also, M Singh, "Collateral flows and balance sheet(s) space" (2016) *5 (1) Journal of Financial Market Infrastructures* 65 at 66.

8 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 85-92.

9 B Aydin, "Evolution of collateral 'management' into collateral 'optimisation'" (2016) 8 (3) *Journal of Securities Operations & Custody* 259-271.

10 A levels and J Capel, "Is collateral becoming scarce? Evidence for the euro area" (2012) *1 (1) Journal of Financial Market Infrastructures* 29 at 29-31. The use of margin will be explored in greater detail in the subsequent chapter.

facilitates collateral transactions as a source of secured funding through hedging and margining techniques.[11] Equally important with regard to financial collateral is liquidity. Financial collateral in the form of highly liquid fungible securities ensures the financial system remains "awash with liquidity", which is fundamental to lending and enabling growth in the economy.[12] Yet financial collateral is not solely beneficial; it is also a source of systemic risk, and is a key contributor to financial instability in recent times.[13] As such, good or bad, the significance of financial collateral to the economy as a whole cannot be overemphasised.

This chapter deals with the use of financial collateral within collateral transactions in the EU shadow banking sector and will be structured as follows. Section 2 will answer the question of: what is financial collateral? In order to answer this question, it is first important to explore the significance of the term 'collateral'. It is then necessary to ask: what is added by collateral being 'financial'? Drawing a comparison between collateral and financial collateral will prove essential in understanding the role that financial collateral now plays within collateral transactions in the EU shadow banking sector. Section 3 will explore the scope of the Financial Collateral Directive and its significance in relation to the types of assets used as financial collateral. Section 4 will introduce the various types of transactions with which financial collateral is used. In particular, repos, securities lending and derivatives transactions will be briefly analysed. These collateral transactions are not only key to the efficient functioning of the shadow banking sector, they are also the source for providing alternative funding to that offered by the traditional banking sector. The penultimate section will discuss the velocity of financial collateral from a market perspective. The velocity of financial collateral is a measure of re-use and is important from an efficient and liquid market perspective. However, the velocity of financial collateral also poses significant risk, especially in relation to contagion and potential default. Section 6 concludes.

11 Singh (n 7) 65 at 66. See also, M Singh, *Collateral and Financial Plumbing* (2016) 1-14; Committee in the Global Financial System, "Collateral in wholesale financial markets: recent trends, risk management and market dynamics" (2001) *Bank for International Settlements* 1 at 2, available at: https://www.bis.org/publ/cgfs17.pdf.

12 This is elaborated further in this chapter, see section 2.3 below: "Liquidity and Safety". See also, M Brunnermeier, "Financial Crises: Mechanisms, Prevention and Management" in M Dewatripont, X Freixas and R Portes (eds.) *Macroeconomic Stability and Financial Regulation: Key Issues for the G20* (2009) 91 at 92.

13 H Nabilou and 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 25.

2 Defining financial collateral

2.1 Collateral

In order to explore financial collateral, it is useful to take a step back and generically examine what is meant by the term 'collateral'. Taking collateral as security to mitigate counterparty credit risk has been common practice for centuries in money lending, pawn-broking and from the nineteenth century, housing finance.[14] In the *Merchant of Venice* for example, which William Shakespeare wrote over 400 years ago, Shylock and Antonio agreed upon a "pound of flesh" as collateral to secure their loan.[15] While such collateral is arguably socially sub-optimal in today's marketplace, theoretically, there is a wide range of more 'optimal' property that can be used as collateral.

In its most basic form, collateral is a type of property, which the collateral giver offers to the collateral taker as a way to secure performance so that if the collateral giver fails to fulfil its obligations under the agreement with the collateral taker, the collateral taker may fall back and rightfully claim the collateral security. Tangibles such as residential or commercial property, motor vehicles and other property can all be provided as collateral. Intangible property can also be used, for instance, intellectual property rights or financial securities in the form of either debt or equity. Whatever form of property is utilised, whether it be tangible or intangible, the core purpose of collateral is that it hedges default risk by financially underpinning the obligation. Should the collateral giver fail to fulfil its obligations under the agreement with the collateral taker, the collateral taker has a legal right to liquidate the collateral to recoup any losses incurred and return to the position they would have been, had the transaction been concluded. Upon any potential default, the collateral taker is legally able to liquidate the collateral because it has acquired a property law right, such as a security interest or title transfer right, in the posted collateral.[16]

2.2 What is Financial Collateral?

What, then, is so special about *financial* collateral and why is it a distinct category? The core use of financial collateral is no different to any other form of collateral, in that it is a mechanism designed to hedge default risk. However,

14 P C Harding and C A Johnson, *Mastering ISDA Collateral Documents: A Practical Guide for Negotiators* (2012) 4.

15 W Shakespeare, *The Merchant of Venice* (1596) Act IV, Scene 1.

16 Issues relating to property law, such as 'security interest' and 'title transfer' rights will be discussed in this chapter in greater detail below, see section 3.4.2.2 "*Property law*". See also, L Gullifer, "What Should We Do about Financial Collateral" (2012) 65 *Current Legal Problems* 377 at 379-380.

there is one distinct attribute that financial collateral securities possess, that other forms of ordinary collateral do not; that attribute is liquidity.[17]

> *"In monetary theory, 'liquidity' is a quality of assets. The liquidity of an asset relates to its usefulness in meeting liabilities. It is its degree of 'moneyness', the degree to which it approximates, or the ease with which it can be turned into, money defined as a generally accepted means of payment".*[18]

This would imply that collateral, without the *financial* element, is 'illiquid' in the sense that the asset cannot be readily turned into money. Money, which has three functions, can be defined as something that holds its value over time (store of value); can be easily translated into prices (unit of account); and, is widely accepted (medium of exchange).

In a situation where a collateral giver and collateral taker enter into a securities lending transaction for example, the collateral giver posts collateral in the form of tangible residential property to the collateral taker. However, prior to maturity the collateral giver defaults. In such a scenario, the collateral taker could find itself in a situation where it is very difficult to readily liquidate the collateral. This could be due to external factors, such as the residential property being overpriced, is occupied, a slow market or lack of interested buyers – these can all contribute to a delay in the collateral taker recovering funds.[19]

Now imagine the same situation where the collateral giver and collateral taker enter into a securities lending transaction but instead use AAA rated government bonds rather than residential property as financial collateral. AAA rated government bonds are deemed 'safe' and 'liquid' because there is a genuine economic demand for the assets and upon any potential default, the AAA government bonds can be traded at 'high frequency' with orders being executed in seconds.[20] A safe asset, therefore, has money like equivalence because of the promise of cash immediacy. Financial collateral is such an asset because it is designed to make good on the promise even if there is default. Such promises require the financial collateral to be 'liquid' and liquidity implies that the financial collateral can be readily turned into cash without losing its value.[21] While virtually any asset can be used as collateral in a collateral

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17 Liquidity is defined and elaborated upon in this chapter below, see section 2.3 "Liquidity and Safety". See also, Gullifer (n 16) 377 at 380.

18 H W Arndt, "The Concept of Liquidity in International Monetary Theory" (1947-1948) 15 (1) The Review of Economic Studies 20 at 21.

19 Illiquid assets can also relate to automobiles, jewellery and collectibles – the list is not exhaustive. See also, D J Elliott, "Market Liquidity: A Primer" (2015) *Economic Studies at Brookings* 1 at 3.

20 Singh *Financial Plumbing* (n 11) 35.

21 Nabilou and Pacces (n 13) 7 at 15-16.

transaction, generally, financial collateral is more liquid than other forms of collateral, and will therefore be the focus of this research.

2.3 Liquidity and Safety

2.3.1 Introduction

The concepts of liquidity and safety, while independent factors, are interrelated. Liquidity, which encompasses funding liquidity and market liquidity,[22] is a term used to describe how easy and quickly it is to convert an asset into cash. The term safety, in relation to the assets used as financial collateral refers to the "full protection from credit, market, inflation, currency and idiosyncratic risks… permitting investors to liquidate positions easily" with the promise of cash immediacy.[23] However, in truth no financial asset meets these criteria and the best that can be hoped for is 'ultra-safe' in relation to the invulnerability of the issuer of the asset class.[24] The asset class deemed as 'ultra-safe' "may include government debt, AAA corporate debt, bank debt… among others".[25] An 'ultra-safe' asset is equally a liquid asset because upon any potential default, non-defaulting parties will arguably always be able to readily recoup their investment – this is because financial collateral "is typically easy to transfer, value, and realize, all of which are aspects of liquidity".[26] Therefore, liquidity is a crucial safety component in any collateral transaction because the more liquid the asset, the safer that asset will be due to the promise of cash immediacy. Yet the opposite is also true. An illiquid asset is deemed an unsafe asset because if there is default, the non-defaulting party does not have the promise of cash immediacy due to the difficulty in readily converting that asset into cash.[27]

2.3.2 Market liquidity

Market liquidity relates to the ability of buyers and sellers of securities to transact speedily and efficiently without causing drastic change in the price

22 Funding liquidity and market liquidity will be discussed in this chapter in greater detail below, see respective sections 2.3.2 "*Market liquidity*" and 2.3.3 "*Funding liquidity*".
23 P O Gourinchas and O Jeanne, "Global Safe Assets" (2012) *399 BIS Working Paper* 1 at 4.
24 Cullen (n 8) 85 at 91.
25 A Gelpern and E F Gerding "Inside Safe Assets" (2016) *33 Yale Journal on Regulation* 363 at 363. See also, Cullen (n 8) 85 at 87 (footnote 12).
26 T Keijser, G Morton and M Peeters, "Financial Collateral: From Private to Regulatory Law Reform" in T Keijser (ed), *Transnational Securities Law* (2014) 27 at 29. See also, M Haentjens, T Keijser and G Morton, *Transnational Securities Law* (forthcoming 2nd edition) Chapter 2.
27 Safe and unsafe assets will be discussed in greater detail in Chapter 6 "The Role of Debt in the EU Shadow Banking Sector".

of the assets. From a safety perspective, market liquidity is critical in relation to investors relying on liquidating their position easily and efficiently with no delays. Yet when market liquidity is 'low', that is, when it becomes difficult to raise money by selling the asset, 'unsafety' becomes an issue. For instance, market freezes (illiquidity) take place precisely because market participants are uncertain about the safety of the assets circulating the financial system. There are three sub-forms of market liquidity:

1. Market resiliency: indicates the length of time it will take for prices that have temporarily fallen/declined in value to bounce back;
2. The bid-ask spread: measures the value traders can lose if they sell one unit of an asset and then immediately buy it back; and,
3. Market depth: shows how many units traders can buy or sell at the current bid or ask price without moving the price.[28]

2.3.3 Funding liquidity

Funding liquidity describes the ease by which market participants can obtain/raise funding. When funding liquidity is high (in good times), financial markets can be described as 'liquid' because of the relative ease in raising money. When funding liquidity is high, safety is implied in that market participants would not readily trade on illiquid and unsafe assets. Typically, when parties, such as the collateral giver and the collateral taker enter into a collateral transaction, the collateral taker will, more often than not, use the asset posted as financial collateral and borrow against it. However, the collateral taker will not be able to borrow against the entire price of the financial collateral. The difference between the price of the asset and of the financial collateral, the margin, must be financed by the collateral taker's own equity capital. Funding liquidity risk can take on three forms:

1. Redemption risk: the risk that equity holders of hedge funds or demand depositors of banks, for example, withdraw funds;
2. Margin/haircut risk: the risk that haircuts/margin will change; and,
3. Rollover risk: the risk that it will be expensive, more costly and/or impossible to roll-over (renew) short-term borrowing.[29]

2.3.4 Liquidity risk

Financial markets are inherently unpredictable, which is why risk management plays a crucial role in finance, especially in relation to liquidity. As mentioned in Chapter 2, liquidity has the potential to suddenly 'evaporate' and the mechanisms that explain why liquidity can suddenly evaporate operate

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28 M K Brunnermeier, "Deciphering the Liquidity and Credit Crunch 2007-2008" (2009), *23 (1) Journal of Economic perspectives* 77 at 92.

29 *Ibid* at 91-92.

through the interaction of funding liquidity and market liquidity. Through this interaction, a relatively small shock can cause liquidity to dry up suddenly and carry the potential for a full-blown financial crisis.

Consider a collateral giver who enters into a securities lending transaction and borrows € 10 million worth of assets on 10% margin from the collateral taker. The 10% margin component means that the collateral giver has to finance € 1 million from its own capital (10% of € 10 million) and borrows € 9 million. This means that the collateral giver posts € 10 million worth of financial collateral but only receives € 9 million worth of assets in return. Now, suppose that the value of the financial collateral depreciates to € 9.5 million. The collateral giver, who posted financial collateral worth € 10 million has now lost € 500,000 and has only € 500,000 of its own capital remaining. Holding the 10% margin level means that the collateral giver will most probably have to reduce its overall position, which means selling assets exactly when the price is low in order to maintain the 10% margin. These sales depress the price further, thereby inducing more selling. The loss spiral arises as an equilibrium because the same asset class will face similar constraints at the same time.[30]

There is another consequence – rising margin levels. When the asset class as described above declines, margins rise. This is because the collateral taker is essentially going to want to make sure it gets paid. By raising the margin level means that the burden of risk shifts more to the collateral giver. However, as margins rise, the collateral giver has to find funding from somewhere in order to honour the obligation with the collateral taker, which is not always straightforward. It has been argued that unexpected price shocks leading to rising margin levels can be a catalyst for future volatility.[31] In addition, rising margin levels leads market participants to become overly cautious about which assets will be accepted as eligible financial collateral if they fear they might receive a particularly bad deal. The problem is that, market participants want to be able to quickly liquidate the financial collateral to avoid loss; if they receive potentially 'toxic' assets, it would very difficult to avoid making a loss.[32]

2.4 Financial Collateral Securities

Various forms of securities can be used as financial collateral. It is therefore useful at this stage to explore the types of securities used as financial collateral within the EU shadow banking sector. Depicted in *Table 3* below is an overview of the types of financial collateral used within collateral transactions in the

30 M K Brunnermeier and L H Pedersen, "Market Liquidity and Funding Liquidity" (2008) *The Society for Financial Studies* 1 at 1 – 7.
31 Brunnermeier (n 28) 77 at 94.
32 *Ibid* at 94.

EU shadow banking sector. However, it should be noted that given the severe lack of granular data in the EU shadow banking sector, *Table 3* is merely a depiction of the information available and is by no means an exhaustive overview.

Table 3: Financial Collateral Securities[33]

<table>
<tr><th colspan="2">Type of Security used as Financial Collateral</th><th>Repurchase Agreement</th><th>Securities Lending</th><th>Collateralisation of Derivatives</th></tr>
<tr><td colspan="2">Cash</td><td>N/A</td><td>25% in the EU</td><td>Predominant</td></tr>
<tr><td colspan="2">Government Bonds</td><td>81% in the EU</td><td>Predominant non-cash FC</td><td>Predominant but limited to high quality issuers</td></tr>
<tr><td>High Grade</td><td>Sovereign Supra-national Agency</td><td><5% in the EU</td><td>65%-75% in the EU</td><td rowspan="5"></td></tr>
<tr><td rowspan="4">Credit</td><td>Equity
Investment Grade
Non-Financial Institutions
Investment Grade
Financial Institutions</td><td><5% in the EU</td><td><5% in the EU</td></tr>
<tr><td>Covered Bonds</td><td><10% in the EU</td><td rowspan="3">Little use as FC</td></tr>
<tr><td>RMBS
CMBS</td><td><5% in the EU</td></tr>
<tr><td>ABS
CDO & CLO
Credit Claims</td><td><1% in the EU</td></tr>
</table>

The types of security used as financial collateral in the EU shadow banking sector can vary significantly and the level of margin applied to the transaction depends on, *inter alia*, what type of security is used. Equally important are issue size, market microstructure, size of investor base, complexity, initial term to maturity and the age of the asset. For instance, equities included in market indexes can trade in the tens of thousands every day, reflecting higher price transparency and smaller issue size. Major credit worthy government bonds can be traded on a substantial level many times a day, which reflects high liquidity, strong supply and demand, market-maker support and superior creditworthiness. Senior investment grade corporate bonds, such as those rated BBB or above, tend to be traded in the millions every few days, reflecting

33 R Comotto, "Shadow Banking – Minimum Haircuts on Collateral" (2013) European Parliament Economic and Monetary Affairs 1 at 23. The term "High Grade" and "Investment Grade" relates to securities that are BBB rated or above.

narrower investor bases, tailored structures, smaller issue size and lower credit worthiness.[34]

Within each category of security, there are considerable differences in liquidity. For example, there will be a significant difference in liquidity between government bond markets. The government bond markets of small countries or lower creditworthy governments, such as Greece tend to be much less liquid than those of larger countries, such as the UK or the Netherlands, even if the government bonds are of comparable credit quality. Nevertheless, there is a broad concentration of financial collateral in more liquid assets. The range of financial collateral is wider in collateral transactions markets (repos, securities lending and derivatives), as these are financing markets and all dealer and leveraged investor transactions require financing.[35]

3 The financial collateral directive

The Financial Collateral Directive is an important statute when it comes to categorising financial collateral. Notwithstanding the limited scope of the Financial Collateral Directive,[36] financial collateral under the Financial Collateral Directive can constitute: "cash", "financial instruments" and/or "credit claims".[37] Each of these financial collateral categories will be discussed in turn.

3.1 Cash

In practice, 'cash' is the most sought-after form of financial collateral. It is widely regarded as the safest and most liquid when compared with financial instruments and credit claims. In particular, US dollars are a highly liquid and sought-after source of financial collateral. This is because US dollars are the most frequently used currency in the world, and is also the global reserve currency that is held by nearly every central bank around the globe.[38] How-

34 *Ibid* 1 at 22.
35 Comotto (n 33) 1 at 22-23.
36 The scope of the FCD will be discussed in greater detail in this chapter below, see section 3.4 "Scope of the Financial Collateral Directive".
37 Article 2 (4) (c) FCD. See also, G Yeowart, R Parsons, E Murray and H Patrick, *The Law of Financial Collateral* (2016) 50.
38 Official statistics of December 2016 show that the Euro is the second most traded currency in world, which is followed by the Japanese Yen, GBP Sterling, Australian Dollar, Canadian Dollar and the Swiss Franc. On this see Bank for International Settlements, "Triennial Central Bank Survey" (11 December, 2016 (accessed 20 Janaury, 2021)) 1 at 10, available at: https://www.bis.org/publ/rpfx16fx.pdf.

ever, a point to note, the term 'cash', for the purpose of providing financial collateral is not tangible bank notes and coins, but, intangible cash balances.[39]

Under Article 2 (1) (d) of the Financial Collateral Directive, 'cash' is defined as "money credited to an account in any currency, or similar claims for the repayment of money, such as money market deposits".[40] As a source of financial collateral, the term 'cash' was discussed in *Private Equity Insurance Group SIA v Swedbank AS*, where the Court of Justice of the European Union ("CJEU") held that 'cash', when 'credited to an account', includes monies deposited in accounts used in payment and securities settlement systems as well as monies deposited in a bank account.[41]

For the purpose of providing financial collateral, the term 'cash' can also include various types of claims. For instance, cash can include claims for the repayment of money, such as loans, provided that these loans are indicated in an accounting entry or governed by standard accounting practice and principles. Cash can also include sums due in connection with a close-out netting provision or sums due in relation to a collateral transaction. Cash can also be "money market deposits" as these types of deposits represent a similar claim to that of money because they are deemed easily convertible into cash.[42] It should also be noted that 'cash' cannot include every claim for the repayment of money because, if it did, the express extension of the Financial Collateral Directive to include 'credit claims' would have been unnecessary.[43]

Although cash is the most sought-after form of financial collateral due to its high liquidity, cash is equally finite. In many circumstances the collateral giver will not be in a position to post cash as financial collateral, and fortunately for the collateral giver, not every collateral transaction requires them to do so. An example of this is a repo transaction where financial instruments are generally posted.

39 Article 2 (1) (d) FCD. See also, Yeowart *et al* (n 37) 51.

40 Virtual currencies do not currently fall under the financial collateral umbrella, although this is not an inconceivable idea. This was recently discussed in a lecture in London by Y Mersch, "Virtual or virtueless? The evolution of money in the digital age" (February, 2018) *The European Central Bank*. Additionally, it has also been argued that virtual currencies should be regarded as a medium of exchange, on this see generally, J Perkins and J Enwezor, "The legal aspect of virtual currencies" (November, 2016) *JIBFL* 569. This may be an interesting topic for future research.

41 Case C-156/15 at paragraphs 33-35, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32002L0047. See also, L Hingston, "Possession/control of financial collateral – ECJ takes narrow interpretation (Private Equity Insurance Group SIA v Swedbank AS)" (21 December, 2016) *LexisPSL Restructuring and Insolvency* 1 at 3.

42 Recital 18 and Article 2 (1) (d) FCD. See also, R Dodd, "What Are Money Markets?" (2012) 49 (2) *Finance & Development* 46 at 46-47;

43 Yeowart *et al* (n 37) 51-54. Credit claims will be discussed in this chapter in greater detail below, see section 3.3 "Credit Claims".

3.2 Financial Instruments

Financial instruments are deemed an attractive source of financial collateral because these instruments are generally listed on an official market or exchange and are "negotiable on the capital market".[44] Trading prices are therefore readily available allowing for reliable, accurate and timely mark-to-market pricing. In addition, 'listed' securities are generally liquid in the sense that the asset can be bought and sold without delay and at a reasonable market price.

Financial instruments are specific types of instruments that are explicitly defined in both the Financial Collateral Directive and the Markets in Financial Instruments Directive II ("MiFID II"). Both Directives overlap in their definitions, however MiFID II goes further by introducing derivatives as a type of financial instrument. Under MiFID II, "financial instruments"[45] are defined as:

1. "Transferable securities":[46] which are securities that are "negotiable on the capital market",[47] such as "shares in companies and other securities equivalent to shares in companies",[48] debt instruments including "bonds or other forms of securitised debt"[49] and "any other securities… giving rise to a cash settlement";[50]
2. "Money-market Instruments":[51] Which are classes of instruments dealt with on the money market, namely "treasury bills, certificates of deposit and commercial papers";[52]
3. "Units in collective investment undertakings";[53]
4. Derivative contracts, including the transfer of credit risk, options, forwards, futures and swaps;[54]
5. "Financial contracts for differences";[55] and,
6. "Emissions allowances" complying with the requirements of Directive 2003/87/EC.[56]

44 Article 2 (1) (e) FCD and Article 4 (1) (44) of Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU ("MiFID II").
45 Article 4 (1) (15) and Section C of Annex I MiFID II.
46 Article 4 (1) (15) and Section C of Annex I MiFID II.
47 Article 4 (1) (44) MiFID II.
48 Article 4 (1) (44) (a) MiFID II.
49 Article 4 (1) (44) (b) MiFID II.
50 Article 4 (1) (44) (c) MiFID II.
51 Section C of Annex I MiFID II.
52 Article 4 (1) (17) MiFID II.
53 Section C of Annex I MiFID II.
54 Section C of Annex I MiFID II.
55 Section C of Annex I MiFID II.
56 Section C of Annex I MiFID II.

Under Article 2 (1) (e) of the Financial Collateral Directive, "financial instruments" are defined as company shares or equivalent securities; negotiable capital market debt instruments, such as bonds; and, other securities which give the right to acquire such shares, bonds or other securities by exchange, purchase or which give rise to a cash settlement, such as money market instruments and units in collective investment undertakings.

3.2.1 *The debt and equity dichotomy*

In practice the most sought-after form of financial instrument used as financial collateral within a collateral transaction in the EU shadow banking sector is predominantly in the form of debt instruments, such as government bonds.[57] In contrast to equity securities, for instance company shares, government bonds are deemed to be safer and of higher quality. Take for example a Dutch government bond, which is a debt instrument with a AAA credit rating issued by the Dutch government.[58] There are four reasons why this Dutch government bond is a highly sought-after source of financial collateral.

Firstly, the Dutch Government bond has a AAA rating; this rating reflects the country's minimal credit risk based on various due diligence procedures performed by external credit rating agencies. Secondly, a Dutch government bond is issued by the Dutch government. The risk of the bond defaulting is, therefore, further minimised because the Dutch government bond is underpinned by a 'put' to the safety net. A 'put' to the safety is a "risk absorption capacity external to the shadow banking activity".[59] In other words, there is reliance upon, for example, the lender of last resort in that there is financial intervention by a credible government should a problem occur. One *caveat* – government bonds are not immune to default and the risk of a government bond defaulting is directly attached to the country issuing the debt instrument.[60] Thirdly, the Dutch government bond will be listed on an official market or exchange. Trading prices are therefore generally accurate and readily available. Lastly, depending on the property law right attached to the financial collateral, the Dutch government bond may be used as a further means of

57 Debt instruments can also include corporate bonds and other forms of debt instruments as long as these are tradeable on the capital market.

58 At the time of writing, 24 January 2021, A Dutch government bond has a credit rating of Aaa, see Moody's, Government of Netherlands credit rating, available at: https://www.moodys.com/credit-ratings/Netherlands-Government-of-credit-rating-543005.

59 S Claessens and L Ratnovski, "What Is Shadow Banking?" (2014) *WP/14/25 International Monetary Fund* 1 at 5.

60 J Politi and K Allen, "Italian market turmoil deepens as president picks new premier" (Tuesday 29 May, 2018) *Financial* Times 1 at 1. It is an obvious point – however it is always important to assess the risk of the government bond as it applies to the country issuing the debt. Where there is political, sovereign and economic unrest in any given country, it could potentially lead to problems. Greece, for example, was particularly affected by the European Sovereign Debt Crisis and Italy has mounting debt problems.

trading within the marketplace, which would ultimately enhance both funding and market liquidity.[61]

There is therefore a significant dichotomy between debt and equity. Equity in the form of a company share is highly volatile; it is subject to frequent and unpredictable intraday market price fluctuations, whereas government bonds are generally not subject to extreme intraday fluctuations. While equity is an important source of financial collateral, fluctuations can of course cause problems. If the financial collateral plummets in value, it will subsequently lead to the obligation to post additional financial collateral and higher margin ratios. The domino effect of this volatility may lead to panic runs, which in turn paves the way for fire sales, downward price spirals and ultimately future crises.[62]

3.2.2 Other securities which give rise to cash settlement

The demand for high quality financial collateral often exceeds supply and increasingly, the use of lesser quality forms of financial collateral is often relied upon. As described previously, it is clear that high quality financial collateral, which is both stable and liquid, is the most sought after. However, it is not always possible to post investment grade financial collateral, such as AAA government bonds. Financial collateral in the form of financial instruments can also be "other securities… which give rise to a cash settlement".[63] Despite these securities being less liquid and stable, in most cases it will still satisfy the demands of the collateral taker. According to the European Commission, this form of financial collateral is "all kinds of securities held in fungible form or as bearer securities… whether in book entry form or directly held".[64] These sorts of securities may include securities which are convertible into equity, such as a contingent convertible bond ("CoCo"). A CoCo is essentially a fixed income debt instrument that is convertible into equity if a pre-specified trigger event occurs. The general idea is that as long as there is a market for the financial instruments, and as long as the parties are in agreement about what are deemed 'acceptable', the financial collateral can be used as 'cash equivalent'.[65]

61 Brunnermeier (n 28) 77 at 91-96. See also generally, Brunnermeier and Pedersen (n 30).
62 Wilmot *et al* (n 6) 1 at 1-3.
63 Article 2 (1) (d) FCD.
64 Working Document on Collateral from the Commission to relevant bodies for consultation: First preliminary draft proposal for a Directive, C4/PND (2000), 15 June 2000, 1 at 10. See also, Yeowart *et al* (n 37) 60 (footnote 39).
65 Yeowart *et al* (n 37) 64-65. See also, M Singh, "Collateral Reuse and Balance Sheet Space" (2017) *IMF Working Paper* 1 at 5.

3.3 Credit Claims

Credit claims are a less liquid form of financial collateral. Under Article 2 (1) (o) of the Financial Collateral Directive, "credit claims are pecuniary claims arising out of an agreement whereby a credit institution… grants credit in the form of a loan".[66] As a form of financial collateral, the credit claim category, which can only be granted by a credit institution,[67] was introduced after the Global Financial Crisis due to the decline of the securitisation market. Credit institutions had various financial receivables and business assets on their balance sheets and these assets essentially became stagnant due to the decline of the securitisation market.[68] By extending the scope of the Financial Collateral Directive to credit claims, it has been suggested by the European Commission that credit institutions would be able to provide lending on a more efficient basis and investors would be able to access funds more readily.[69] As a consequence, a level playing field would be created among credit institutions and cross-border use of credit claims as a form of financial collateral would be stimulated.[70] It is interesting to note that whereas bonds only qualify as financial collateral under the Financial Collateral Directive if they are "negotiable" on the capital market, there is no requirement that credit claims should be tradeable (although they often will be).[71]

3.4 Scope of the Financial Collateral Directive

While the categories: "cash", "financial instruments" or "credit claims"[72] are sources of financial collateral and governed by the Financial Collateral Directive, not every collateral transaction will enjoy the protection afforded by the Financial Collateral Directive, due to its limitations in scope. Protection with regard to financial collateral under the Financial Collateral Directive ensures that the financial collateral is backstopped by the European Central Bank

66 Article 2 (1) (o) FCD. See also J Diamant, "An Alternative Approach to the Requirement of Possession or Control under the EU Collateral Directive" (2013) *Presentation at the Society for Legal Scholars Conference;* European Central Bank, "The Use of Credit as Collateral for Eurosystem Credit Operations" (2013) *No. 148 Occassional Paper Series* 1 at 5.

67 Article 4 (1) (1) of Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending regulation (EU) No 648/2012 (OJ L 176) Capital Requirements Regulation ("CRR").

68 This information was received during a meeting with interviewee #2 on Thursday 3 May, 2018 at the offices of Shepherd and Wedderburn Solicitors, Exchange Crescent, Edinburgh, UK.

69 European Commission Green Paper, "Building a Capital Markets Union" (2015) 1 at 23.

70 Yeowart *et al* (n 37) 68.

71 Article 2 (1) (e) FCD. See also, Yeowart *et al* (n 37) 68-71.

72 Article 2 (4) (c) FCD. See also, Yeowart *et al* (n 37) 50.

("ECB"). A backstop functions as a form of insurance and is the act of providing last-resort financial support in the event that something goes wrong. The scope of the Financial Collateral Directive is determined by personal scope and material scope, each will be discussed in turn.

3.4.1 *Personal scope*

In order to be protected under the Financial Collateral Directive, Article 1 (2) of the Financial Collateral Directive holds that the collateral giver *and* the collateral taker must fall into one of the following categories:
a) "public authority";[73]
b) "central bank";[74]
c) "financial institution subject to prudential supervision";[75]
d) "central counterparty, settlement agent or clearing house";[76] or,
e) any other legal person "other than a natural person, including unincorporated firms and partnerships, provided the other party" belongs to the preceding institutions as outlined in (a) – (d) above.[77]

One objective of the Financial Collateral Directive is that the personal scope of the application of the Financial Collateral Directive should also cover entities that are "unincorporated".[78] However, Member States, under their national law, may limit eligibility to the aforementioned institutions by 'opting out' of Article 1 (2) (e) of the Financial Collateral Directive. The 'opt-out' provision under Article 1 (3) of the Financial Collateral Directive, allows Member states to remain more restrictive in scope and application by excluding parties mentioned in Article 1 (2) (e) of the Financial Collateral Directive. There is, therefore, an attraction to conduct business in certain Member States over others. Spain is one such example. Spain has widened the personal scope of the Financial Collateral Directive to cover entities not mentioned in the Financial Collateral Directive, whereas Austria has exercised the full opt-out under Article 1 (3) of the Financial Collateral Directive.[79]

Entities outside the five categories outlined under Article 1 (2) (a) – (e) of the Financial Collateral Directive, that is to say a private repo transaction between two high net worth individuals or a securities lending transaction between two hedge funds (provided neither is prudentially regulated) for example, would not be covered by the Financial Collateral Directive.

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73 Article 1 (2) (a) FCD.
74 Article 1 (2) (b) FCD.
75 Article 1 (2) (c) FCD.
76 Article 1 (2) (d) FCD.
77 Article 1 (2) (e) FCD.
78 Article 1 (2) (e) FCD.
79 Yeowart *et al* (n 37) 42-43. Other Member States who have widened the scope include, Belgium, Italy and Estonia to name a few.

3.4.2 Material scope

The material scope of the Financial Collateral Directive relates to three different categories, namely types of financial collateral, property law rights and possession and control – each will be discussed.

3.4.2.1 Types of financial collateral

As previously described, the types of financial collateral circulating the EU can include "cash", "financial instruments" or "credit claims".[80] The scope of the Financial Collateral Directive does not extend to other forms of collateral that are not considered *financial*, such as commercial property, plant and machinery and residential property.

3.4.2.2 Property law

Most collateral transactions involve the transfer of assets from one party to another party. The entitlement of the parties in relation to how the financial collateral can be used is especially important not only with regard to whether the financial collateral can be used for recovery or tradability reasons, but also in default and potential insolvency situations. The underlying legal mechanisms in relation to the transfer of assets as financial collateral from one party to another party can come in three different forms, which are all catered for in the Financial Collateral Directive (as well as the respective master agreements[81]).

1. Title transfer: the Financial Collateral Directive defines 'title transfer' as a "title transfer financial collateral arrangement… under which a collateral provider transfers full ownership of, or full entitlement to, financial collateral to a collateral taker for the purpose of securing or otherwise covering the performance of relevant financial obligations".[82] This provision of the Financial Collateral Directive ensures that the collateral taker acquires full title to the financial collateral and, as the new owner of the financial collateral, the collateral taker is allowed to utilise it as he sees fit.

   The only obligation the collateral taker has to the collateral giver is to return *equivalent fungible* securities upon maturity.[83] After the financial collateral has changed hands via a title transfer arrangement and has subsequently been reused by the collateral taker, it is not obligatory for the collateral taker to return the exact securities to the collateral giver. A very simplistic example is a € 100 Dutch government bond, with a serial number of 1234. If this Dutch government bond is posted by the collateral

80 For a deeper analysis on these three categories of financial collateral, see above section 3 "The Financial Collateral Directive". See also, Article 2 (4) (c) FCD; Yeowart *et al* (n 37) 50.
81 The respective master agreements will be explored in greater detail under Chapter 5 "Collateral Transactions in Practice".
82 Article 2 (1) (b) FCD.
83 Haentjens and de Gioia-Carabellese (n 5) 231-233.

giver to the collateral taker as financial collateral, it is not necessary for exactly the same Dutch government bond, with serial number 1234, to be returned. It is enough that the returned financial collateral is *equivalent fungible* securities of the same value and type, i.e. a Dutch government bond with serial number 5678 with a value of € 100.[84]
2. Security Interest: the Financial Collateral Directive defines 'security interest' as a "security financial collateral arrangement… under which a… [collateral giver] provides financial collateral by way of a security to or in favour of a… [collateral taker], and where the full or qualified ownership of, or full entitlement to, the financial collateral remains with the… [collateral giver] when the security right is established".[85] Under a traditional security interest structure, the collateral taker is only allowed to dispose of the financial collateral upon the default of the collateral giver.
3. Security Interest with a right of use: to enhance the tradeability of the financial collateral in a traditional security interest structure, the collateral taker can be explicitly granted a 'right of use'.[86] A 'right of use', as defined under the Financial Collateral Directive, is "the right of the collateral taker to use and dispose of financial collateral provided under a security financial collateral arrangement as the owner of it in accordance with the security financial collateral arrangement".[87] A security interest with a 'right of use' in the financial collateral allows the collateral giver to retain full title in the financial collateral. However, as soon as the financial collateral is re-used by the collateral taker, the arrangement transforms into a full title transfer.

Out of the three legal mechanisms outlined above, the most practicable option is title transfer. The predominant reason for entering into a collateral transaction is the performance of another obligation in a completely separate transaction. Therefore, a key purpose of acquiring financial collateral is to transfer ownership to a third party. In order to transfer ownership, the collateral taker clearly must be the owner of the financial collateral, which is done through a title transfer.[88]

3.4.2.3 Possession and control

One of the driving forces behind the Financial Collateral Directive was to tackle the conflict of laws[89] by creating an EU wide framework that harmonised the various legal systems in relation to the provision of financial collateral. In

84 Singh *Financial Plumbing* (n 11) 2.
85 Article 2 (1) (c) FCD.
86 Singh *Financial Plumbing* (n 11) 3. See also, Haentjens and de Gioia-Carabellese (n 5) 229-230.
87 Recital 19 and Article 2 (1) (m) FCD.
88 Haentjens and de Gioia-Carabellese (n 5) 229-230.
89 'Conflict of laws' will be discussed in this chapter below, see section 3.5 "Conflict of Laws".

particular, the Financial Collateral Directive was, amongst other things, designed to facilitate the use of collateral transactions in order to "contribute to the integration and cost efficiency of the financial market as well as to the stability of the financial system" within the EU.[90] The Financial Collateral Directive provides a common regime of minimal formalities for the creation of qualifying collateral transactions enabling the rapid and non-formalistic enforcement of such arrangements, which are free from restrictive provisions of national insolvency proceedings throughout the EU.[91] The Financial Collateral "Directive makes it clear that in order to limit the administrative burden on parties using financial collateral" with a security interest, the only perfection requirement is that of 'possession or control'.[92] Therefore, a collateral arrangement may be classified as a collateral transaction within the Financial Collateral Directive only if the "provided"… "financial collateral is delivered, transferred, held, registered or otherwise designated so as to be in the possession or under the control of the collateral taker".[93]

However, the Financial Collateral Directive does not contain a precise definition of 'possession' or 'control'. It is therefore extremely difficult, if not impossible, to confine the concepts 'possession' or 'control' with sharp definitive boundaries. The main perception is that there can be different forms of control as well as different forms of possession depending on the type of security involved and/or the contractual agreement entered into by the parties. Some commentators argue that possession or control is confined to the idea of 'exclusive and absolute dominion' over the specified securities[94] – yet this leads to the question: how does one have 'exclusive and absolute' dominion over intangible securities? Another argument put forward is that these terms are deliberately 'flexible' to reflect the dynamic nature of financial markets by accommodating the needs of the parties' property law rights in a collateral transaction.[95] Other commentators remain more objective.[96] Yet such arguments, while thought provoking, say nothing conducive about the precise definition of 'possession' or 'control' under the Financial Collateral Directive.

On a more authoritative level, the issue of 'control' under the Financial Collateral Directive has been discussed by Hugh Beale,[97] who draws a distinction with 'negative control' and 'positive control'. Beale describes 'negative

90 Recital 3 FCD.
91 Articles 7 and 8 FCD.
92 Article 2 (2) FCD. See also C Werner, "Are you in possession or control of your clients' financial collateral?" (2013) *Lexology*.
93 Article 2 (2) FCD.
94 E McKendrick, *Goode on Commercial Law* (2009) 689-719. See also, E C Zaccaria, "An inquiry into the meaning of possession and control over financial assets and the effects on third parties" (2017) *Journal of Corporate Law Studies* 217 at 218; G L Gretton, A J M Steven, *Property, Trusts and Succession* (2017) 162.
95 Zaccaria (n 94) 217-246.
96 Yeowart *et al* (n 37) 166-167.
97 Professor of contract and commercial law at the University of Warwick.

control' as a form of control under which the collateral taker can prevent the collateral giver from dealing with the financial collateral. 'Positive control' is where the collateral taker has the practical and legal ability to take or dispose of the financial collateral without any further involvement of the collateral giver. Both forms of control are now part of the UNIDROIT Convention on Substantive Rules for Intermediated Securities.[98] In order to satisfy the requirements under Article 2 (2) of the Financial Collateral Directive, Beale argues that the collateral taker has to at least have 'negative control'.[99]

Beale's view has strong parallels with that of the Opinion of Advocate General Szpunar in the CJEU case of *Private Equity Insurance Group* SIA v Swedbank AS.[100] The Opinion of Advocate General Szpunar referred to the difficulties encountered with the terminology 'possession' and 'control' and noted that the collateral taker must have 'legal' control over the financial collateral for the arrangement to fall within the scope of the Financial Collateral Directive.[101] The Advocate General took the view that the requirement of the financial collateral being 'in the possession' or 'under the control' of the collateral taker for the purposes of the Financial Collateral Directive would become entirely ineffective if it were interpreted as covering a situation where the collateral giver is able to continue to dispose of the financial collateral freely.[102] As a result, the Financial Collateral Directive "meaning of 'provided' must be interpreted to the effect that the provision of financial collateral" requires the collateral taker having the legal right to limit the use of the financial collateral in so far as is necessary to guarantee the relevant obligations.[103] In other words, there has to be "dispossession" in that the collateral giver cannot "freely dispose" of the financial collateral[104] – that is to say that in a collateral transaction with a security interest attached, the collateral giver has to be "prevented from disposing" of the financial collateral.[105]

98 H Beale, M Bridge, L Gullifer and E Lomnicka, *The Law of Security and Title Based Financing* (2012) para 3.37. See also, the UNIDROIT Convention on Substantive Rules for Intermediated Securities, Chapter 19, Part E.3.

99 D Sheehan, *The Principles of Personal Property* Law (2017) 272; see also Yeowart *et al* (n 37) 174-175.

100 Opinion of Advocate General Szpunar, Case C-156/15 Private Equity Insurance Group SIA v Swedbank AS, delivered on 21 July, 2016, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62015CC0156.

101 Ibid at paras 46-47.

102 Ibid at paras 41-51. See also, Article 5 FCD; Diamant (n 66) 1 at 10-12.

103 Ashurst, "Court of Justice of the European Union for the first time decided questions of scope of the Financial Collateral Directive" (24 November, 2016) Securities and Derivatives Briefing Group, available at: https://www.ashurst.com/en/news-and-insights/legal-updates/coj-of-the-eu-financial-collateral-directive/. See also, Opinion of Advocate General Szpunar (n 100) at para 51.

104 Recital 10 FCD. See also, Private Equity Insurance Group SIA v Swedbank AS, Case C-156/15 at paras 40, 43 and 52.

105 Ibid at paragraphs 44-54 and 68.

3.5 Conflict of Laws

Given the global nature of financial markets, most collateral transactions travel across jurisdictions, which mean that securities come in contact with different laws. In particular, financial collateral posted in the form of "book entry securities", which are securities that "consist of financial instruments, title to which is evidenced by entries in a register or account maintained by or on behalf of an intermediary".[106] 'Book entry securities' are indirectly held securities whose ownership is recorded electronically. Because technology is a global phenomenon, one can envisage the financial collateral constantly transiting through numerous jurisdictions, which becomes particularly problematic when determining the precise location of the financial collateral. To illustrate, a prudentially regulated Dutch bank could enter into a repo transaction with a hedge fund in London who then enters into another repo transaction with an investment fund in Malta who enters into another repo transaction with a pension fund in New York and so on and so forth. From a practical perspective it is unclear as to which jurisdiction has legal authority over the financial collateral.

Article 9 of the Financial Collateral Directive seeks to mitigate this conflict by holding that "book entry securities collateral shall be governed by the law of the country in which the relevant account is maintained".[107] The term 'relevant account' relates to "the register or account… which the entries are made by which that book entry securities collateral is provided to the" collateral taker.[108] It is, of course, crucial that parties to the transaction are aware of the applicable law in relation to the financial collateral, as legal certainty is key component within the financial collateral framework. Article 9 of the Financial Collateral Directive overlaps with the so-called Place of Relevant Intermediary Approach ("PRIMA") principle under the Hague Convention. PRIMA is a principle that subjects the financial collateral to the law of a single jurisdiction notwithstanding its transitory nature.[109]

3.6 Shadow Banking and the Financial Collateral Directive

Given that virtually any institution operating in the financial sector can perform shadow banking activities one way or another, the type of financial

106 Articles 2 (1) (g) and 9 (1) FCD.
107 Article 9 (1) FCD.
108 Article 2 (1) (h) FCD. See also, G Spindler, "Fintech, digitalization, and the law applicable to proprietary effects of transactions in securities (tokens): a European perspective" (2019) 24 (4) Uniform Law Review 724-737.
109 See Article 2 and 4 of the Hague Convention of 5 July on the Law Applicable to Certain Rights in Respect of Securities held with an Intermediary, available at: https://assets.hcch.net/docs/3afb8418-7eb7-4a0c-af85-c4f35995bb8a.pdf.

collateral circulating the EU, whether covered by the Financial Collateral Directive or not, generally remains the same. For example, collateral transactions conducted within the shadow banking sector can equally utilise cash, financial instruments and credit claims as sources of financial collateral. The only difference is that certain entities performing specific transactions are not afforded protection under the Financial Collateral Directive. Rather, "privately created" transactions are generally governed by the respective master agreements, which cater for, amongst other things, financial collateral and margin.[110] As long as the financial collateral is mark-to-market, underpinned by the respective master agreement and the parties are in agreement about what constitutes acceptable financial collateral, the financial collateral can generally be used to secure the transaction.[111]

4 Collateral transactions

It is pertinent at this stage to briefly orientate ourselves by exploring the kinds of transactions in which financial collateral is used. Within the EU shadow banking sector, financial collateral is utilised in various collateral transactions, such as repos, securities lending and derivatives transactions.[112] Entities participating in the shadow banking sector tend to concurrently perform many collateral transactions with one another. Because of the size and scale of these transactions, exposure to market risk and credit risk between the parties is constantly fluctuating. Along with the use of margin,[113] liquid financial collateral is therefore essential in managing these exposures.[114]

4.1 Repurchase Agreement

4.1.1 What is a repurchase agreement?

Under Article 3 (9) of the Securities Financing Transactions Regulation ("SFTR"),[115] a repo is defined as a transaction where a party sells an asset

110 Cullen (n 8) 85 at 112.
111 Singh (n 65) 1 at 5.
112 Repos, securities lending and derivatives transactions will only be briefly outlined here. For a deeper discussion on this, please see generally Chapter 5 "Collateral Transactions in Practice".
113 The use of margin will be discussed in greater detail in subsequent Chapter 4 "Margin".
114 Gullifer (n 16) 377 at 382.
115 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").

to another party and commits to repurchase the asset back from that party for a different price upon maturity.

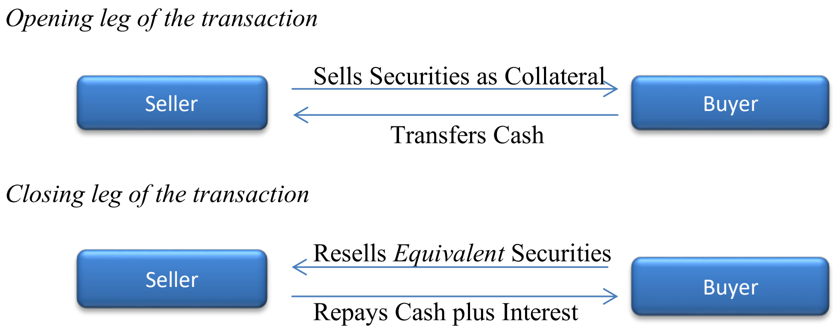

Figure 4: Repo

Figure 4 above demonstrates that in the opening leg of the repo transaction, the seller (collateral giver) sells securities as financial collateral to the buyer (collateral taker); in return, and based on the agreed haircut, the buyer transfers a certain amount of cash to the seller. In the closing leg of the repo transaction, there is a commitment by both the buyer and the seller to repurchase equivalent property.[116] Consequently, the seller repays the cash to the buyer, plus interest; simultaneously, the buyer resells *equivalent* securities back to the seller.

Within the EU, the securities posted as financial collateral at the outset of the repo are sold by means of a true sale; this position can be contrasted with the USA where a repo is classed as a secured loan.[117] A true sale is the legally binding transfer of asset ownership from the seller to the buyer, meaning that the assets are no longer the liability of the seller.[118] However, upon maturity of the repo transaction, the seller has a commitment to buy back *equivalent* financial collateral. Consequently, the buyer has only temporary use and possession of the financial collateral, while the seller has only temporary use and possession of the cash. Therefore, a repo transaction within the EU behaves economically akin to a secured loan, yet the transaction is, in fact, structured legally as a sale and repurchase.

116 Most repos are concluded after a specific period of time. For instance, 'overnight' repos are concluded after one night; 'intra-day' repos are concluded within the same day; Repos can also be 'rolling' in that although there is a fixed maturity date, the contract can specify that this date may be extended by one or both parties; repos can also be classed as 'open' or 'term', and are concluded with or without a fixed maturity date.

117 Haentjens and de Gioia-Carabellese (n 5) 230-233. See also, M Haentjens (ed), Y Diamant, J Siena, R Spence and A Zacaroli, "Financial Collateral: Law & Practice" (2020) 108-109.

118 P Wood, Law and Practice of International Finance (2011) 452-453. In particular, Phillip Wood writes in the context of securitisation, however the concept of 'true sale' remains the same with regard to a repo transaction.

4.2 Securities Lending

4.2.1 What is securities lending?

Under Article 3 (7) of the SFTR, securities lending is defined as "a transaction by which a counterparty transfers securities or commodities subject to a commitment that the borrower will return equivalent securities or commodities on a future date or when requested to do so by the" lender.

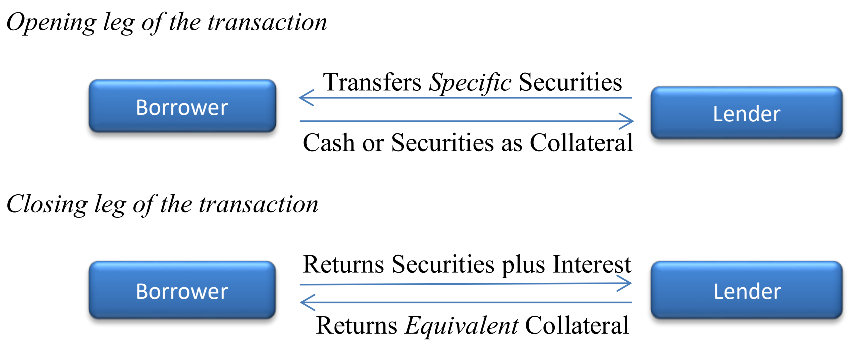

Figure 5: Securities Lending

Figure 5 above demonstrates that in the opening leg of the securities lending transaction, there is a temporary transfer of specific securities by one party, the lender (collateral taker), to another party, the borrower (collateral giver), for a pre-agreed period of time. The lender is not going to enter into this transaction on an unsecured basis, therefore, the borrower is required to provide financial collateral to the lender, plus the agreed upon initial margin. In the closing leg of the securities lending transaction, the borrower returns equivalent securities, plus interest to the lender; simultaneously, the lender returns equivalent financial collateral to the borrower.

Legally, a securities lending transaction is the transfer of specific securities against an irrevocable undertaking to return equivalent securities upon maturity of the transaction. This means that the securities posted as financial collateral, such as government bonds, will be transferred out of the lender's name into that of the borrower's name and then registered back upon maturity of the transaction.[119] The property law right ascribed to the financial collateral, for instance a title transfer or security interest, will dictate what legal right of use the lender and borrower have in the respective property.

119 International Securities Lending Association, "Securities Lending: A Guide for Policymakers" (accessed 17 May, 2020) 1 at 3 (footnote 1), available at: https://www.isla.co.uk/system/files/2017-10/sl_aGuide_for_Policy_makers.pdf.

4.3 Derivatives

4.3.1 What is a derivative?

A derivative is a product that derives its value from an underlying asset class.[120] The derivative itself is a contract between two or more parties based upon the underlying asset and its value is determined by fluctuations in that underlying asset. The asset that underlies the derivative transaction is the benchmark used to calculate the value of the derivative contract.[121] The purpose of entering into a derivative transaction is either to 'hedge' or to 'speculate'. To 'speculate' is the hope of receiving a financial benefit from the variation of the specific underlying asset. To 'hedge' is to seek protection against financial loss or other adverse circumstances.[122]

While a derivatives transaction can refer to a wide range of financial products, such as futures, options and swaps, not all of these products represent a collateral transaction. In the context of collateralised finance, a derivatives transaction, predominantly a 'swap', will only apply if there is a Credit Support Annex attached to the transaction, which is catered for under the International Swaps and Derivatives Association ("ISDA") master agreement.[123] Credit Support Annexes are used in documenting financial collateral/margin posted by the parties that trade on over-the-counter ("OTC") derivative transactions. The main purpose of a Credit Support Annex is, therefore, to set forth and govern the rules in relation to the posting of financial collateral/margin.[124]

Figure 6 below shows that in the opening leg of the transaction, a typical currency swap is a transaction in which the borrower borrows GBP Sterling from, and simultaneously lends Euros to, the lender. Throughout the lifecycle of the transaction, and as a result of the currency fluctuating in price, both the borrower and lender commit themselves to a periodical exchange of interest payments received on the swapped currencies.[125] If such a periodical exchange did not take place, then one party would always be 'in-the-money' and the other would be 'out-of-the-money', which becomes particularly problematic in the event of default. Consequently, the respective currencies are

120 A G Balmer, Regulating Financial Derivatives: Clearing and Central Counterparties (2018) 14.

121 F J Garcimartin and S Sanchez, "Derivatives in a cross-border context: a conflict-of-laws analysis" in M Haentjens (ed), Nederlands Internationaal Privaatrecht: Special Issue on Private international law and finance (2018) 72 at 73.

122 See generally, S M Bartman, "Corporate hedging and speculation with derivatives" (2017) Journal of Corporate Finance.

123 The Credit Support Annex, and the provisions therein, will be explored in greater detail below, see generally Chapter 5 "Collateral Transactions in Practice". See also, Garcimartin and Sanchez (n 121) 72 at 73; Haentjens and de Gioia-Carabellese (n 5) 233-234.

124 J Hull and A White, "Collateral and Credit Issues in Derivatives Pricing" (2014) Journal of Credit Risk 1 at 14-15.

125 Haentjens and de Gioia-Carabellese (n 5) 233-234.

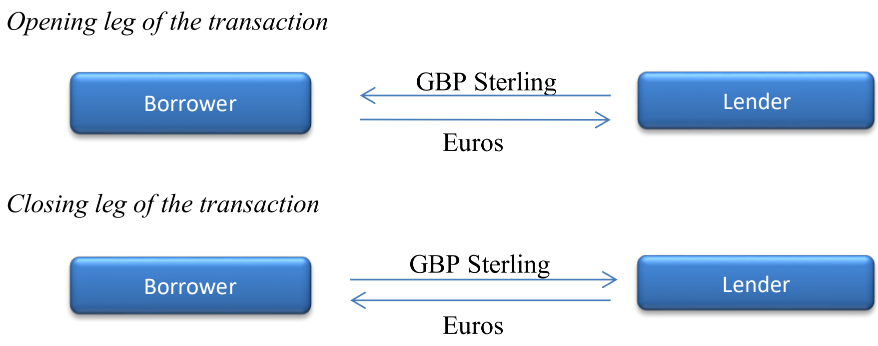

Figure 6: Derivatives

regularly valued mark-to-market for the lifecycle of the transaction where the borrower would pay the lender/lender would pay the borrower depending on the currency fluctuation trajectory. Upon maturity of the transaction, the parties agree that they will repay equivalent principal amounts in the original currency.[126]

OTC derivatives are inherently risky, primarily because the value of the derivative contract is derived from the underlying asset, which can cause the value of the derivative contract to substantially fluctuate. Although there is a 'reciprocal payment obligation', parties often seek financial collateral as a form of credit support in order to mitigate risk. The Credit Support Annex seeks to mitigate this risk through the inherent collateral management process. This management process involves the posting of financial collateral, in the form of initial margin often by both parties, followed by the subsequent application of margin in the form of 'variation margin'.[127]

Property law plays an important role when determining what right the collateral taker has in the posted financial collateral. For example, the ISDA Credit Support Deeds for English law and the New York law Credit Support Annexes, which operate with a pledge/security interest structure can allow financial collateral to be re-used.[128] On the other hand, the English law Credit Support Annex (both the 1995 and 2016 versions) are title transfer agreements where full legal rights are passed from one party to the other party.[129] This means that the collateral taker has a free choice as to how the financial col-

126 Garcimartin and Sanchez (n 121) 72 at 73.
127 For a more in-depth analysis of margin, see below section 4.4 and subsequent Chapter 4 "Margin".
128 Paragraph 1 (b), 1994 ISDA New York Law CSA and Paragraph 1 (b), 2016 New York Law CSA for Variation Margin.
129 Footnote 1 and Paragraphs 5 (a) and (b), 1995 ISDA English Law CSA and footnote 1 and Paragraphs 5 (a) and (b), 2016 English Law CSA for Variation Margin.

lateral will be used – sold, stored, lent out or re-used.[130] In practice, most financial collateral is utilised to meet incoming margin calls; often the financial collateral is reinvested and if it is well managed, profits can be made.[131] Yet it has been noted that in recent years, given the larger volumes of liquid financial collateral currently sought in the marketplace following the Global Financial Crisis, the associated cost of funding collateralised exposures is leading firms to focus more on the optimisation of financial collateral.[132]

4.4 Margin

While 'margin' will be discussed in greater detail in the subsequent chapter, it is worth a brief mention at this juncture. It is common practice for parties involved in a collateral transaction to *ex-ante* implement a margin component in the form of a 'haircut' or 'initial margin'. A haircut or initial margin is the price difference between the market value of the securities posted as financial collateral and the value of the contracted property – often referred to as the "price differential".[133] The purpose of applying a haircut/initial margin is to overcollateralise the transaction thereby hedging risk on any downward price fluctuation of the securities posted as financial collateral. The size of the haircut/initial margin, which is determined by various factors, namely market risk, credit risk of the counterparty and the quality of assets, determines the amount of funding that can be obtained. To simplify this point, the higher the haircut/initial margin, the less funding available, and the lower the haircut/initial margin, the more funding available. In other words, haircuts/initial margins can limit the amount of leverage a market participant can obtain.

'Variation margin' is an *ex-post* control and is a mechanism that refers to the mark-to-market movements in the value of the posted financial collateral. In practice, valuations are often conducted on a daily (or intra-day) basis to determine if there is any uncollateralised exposure. If there is exposure as a result of the financial collateral fluctuating in price, a margin call will be made to cover this exposure. Margin is, therefore, a risk mitigation tool that provides the parties with an important safety net designed to take account of unintended price fluctuations in the financial collateral.[134]

130 Paragraph 7, 1995 ISDA English Law CSA and Paragraphs 7, 2016 English Law CSA for Variation Margin.

131 P C Harding and A J Harding, A Practical Guide to the 2016 ISDA Credit Support Annexes for Variation Margin (2018) 11-27.

132 International Swaps and Derivatives Association, "2013 Best Practices for the OTC Derivatives Collateral Process" (23 October, 2013), available at: https://www.isda.org/a/l0iDE/2013-isda-best-practices-for-the-otc-derivatives-collateral-process-final.pdf.

133 Yeowart et al (n 37) 461-512.

134 Margin is only briefly touched upon in this chapter. For a comprehensive overview of 'margin', see subsequent Chapter 4 "Margin".

4.5 Master Agreements

The legal apparatus governing repos, derivatives and securities lending transactions in the EU shadow banking sector is generally in the form of the so-called industry standard 'master agreements'.[135] Master agreements are standardised documents providing contractual terms and clauses allowing parties to quickly negotiate agreements and transactions. In practice, each type of collateral transaction is governed by a different master agreement. For instance, a securities lending transaction is generally governed by the GMSLA; a repo transaction is generally governed by the GMRA; and, a derivatives transaction is generally governed by the Credit Support Annex under the ISDA master agreement. Parties usually enter into umbrella master agreements to contractually govern their relationship for the lifecycle of the transaction. However, it should be noted that while the aforementioned master agreements are the most widely accepted legal documentation underpinning collateral transactions in the EU shadow banking sector, it should also be noted that the master agreements are not the only option available to parties.[136] It is still possible for parties to rely upon other legal underpinnings such as domestic or specific company documentation or even ad hoc agreements, which may be more suited to the particular transaction.[137]

5 The velocity of financial collateral

The velocity of financial collateral within the EU shadow banking sector refers to the use of the same financial collateral asset several times over. In a typical collateral transaction, market participants pledge, sell, or, more generally transfer an asset they have received from one market participant and transfer it to another market participant. Yet financial collateral does not flow in a vacuum, it requires collateral transactions and balance sheet space to move within the EU shadow banking sector.

135 The master agreements will only be briefly referred to in this chapter. For an extensive overview as to how the master agreements operate in practice, see Chapter 5 "Collateral Transactions in Practice".

136 Other 'master agreement' options available to the parties in the EU include the European Master Agreement, the German DRV and the French FBF. On this see, D Longworth, "The role of margin requirements and haircuts in procyclicality" (March, 2010) CGFS Papers 1 at 5. For the purpose of this study, the pertinent master agreements are the GMRA, the GMSLA and the Credit Support Annex under the ISDA master agreement

137 Haentjens and de Gioia-Carabellese (n 5) 234-235.

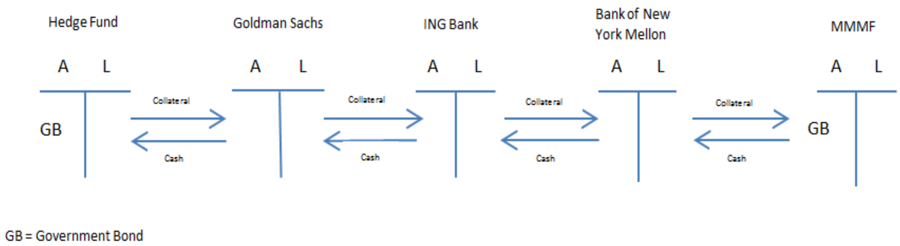

Figure 7: Re-use of Financial Collateral

Figure 7 above visually depicts one of the many examples of a typical intermediation chain and demonstrates how financial collateral can be re-used several times over. This diagram shows multiple repo transactions where the same government bond is re-used as financial collateral. The re-churning of the same asset leads to long chains of intermediation, which harbours both benefits and risk. Along the intermediation chain, a single financial institution can be involved in multiple repos, securities lending or derivatives transactions.

From an economic perspective, the velocity of financial collateral serves many useful functions. The re-use 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. In a repo transaction for example, market participants raise cash to purchase securities, which in turn, are used in other transactions to raise more cash to buy more securities and so on and so forth.[138] The chain of intermediation is a "money multiplier" and in theory, the financial collateral underpinning the collateral transaction may be constantly re-used – mathematically, the cumulative intermediation chain "can be infinite".[139] Another key benefit of financial collateral having velocity is that it mechanically increases the supply of available securities to the marketplace, which can then be used for clearing, settlement and financing purposes. The velocity of financial collateral has indeed become an essential component of modern finance because it not only provides an alternative source of funding, it also facilitates liquid and efficient markets.[140]

However, the velocity of financial collateral also poses significant risk and often comes under the regulatory spotlight from a financial stability perspect-

138 Bank for International Settlements, "Repo Market Functioning" (2017) 59 CGFS Papers 1 at 6, available at: https://www.bis.org/publ/cgfs59.htm.
139 Cullen (n 8) 85 at 94-95.
140 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) Institute for New Economic Thinking.

ive.[141] The long chains of intermediation often lack transparency and therefore heightened risk, particularly in relation to the amplification of contagion. The re-use of the same financial collateral security increases the interconnectedness among market participants thereby contributing to the formation of contagion and potential spill-over effects. As such, the longer the intermediation chain, the more interconnected the parties will become. The re-use of the same financial collateral security can, therefore, create systemic contagion, particularly if an entity within the chain experiences financial distress. Because 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 against the same financial collateral security, which would potentially lead parties within the intermediation chain from being able to reclaim any losses leading to subsequent additional fails.[142] In addition, the intermediation chain can also exacerbate movements in margins. If haircuts/margins rise, the money multiplier as described above works in reverse and causes a deleveraging effect – the cumulative haircuts/margins on re-used financial collateral essentially becomes more sizeable. In periods of market stress, there will be simultaneous demands for the return of securities and the re-use of financial collateral will undermine these demands on a timely basis, incentivising parties to run.[143]

5.1 Two Functions of Financial Collateral

The velocity of financial collateral is important because it highlights two important functions that financial collateral fulfils within collateral transactions in the EU shadow banking sector. Firstly, collateral, whether financial or not and whether liquid or not, fulfils a *recovery* function and plays an important role in case of enforcement/close-out netting. The recovery function serves the purpose of recourse in the event that the collateral giver fails to fulfil its obligations to the collateral taker.[144] The collateral backs the obligation and is the source of payment should default occur. Secondly, financial collateral also serves a *tradability* function. Financial collateral therefore goes further than other forms of collateral precisely because financial collateral is predominantly liquid. Provided that there is a 'title transfer' right or a 'security interest' with a 'right of use' attached to the financial collateral, the tradability function can ensure that financial collateral has 'velocity' in the sense that the financial

141 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.

142 Financial Stability Board, Re-Use: Measures and Metrics (n 141) 1 at 7.

143 Cullen (n 8) 85 at 86. See also, Autorité des Marches Financiers, "The Reuse of Assets: Regulatory and Economic Issues" (9 November, 2016) 1 at 2; M Singh, "Velocity of Pledged Collateral: Analysis and Implications" (2011) IMF Working Paper 1 at 22.

144 Haentjens and de Gioia-Carabellese (n 5) 229-230.

collateral can be further traded and re-used multiple times over. More often than not, financial collateral is not only viewed as a hedging mechanism if the payment liability between the collateral giver and the collateral taker is not met, but also as a tradeable and profitable instrument effected by the liquidity attribute inherent in the financial collateral.[145]

The recovery and tradability functions play an important role in determining what property law right is attached to the financial collateral. For example, if the financial collateral can only be used for recovery reasons, then the holder of the financial collateral cannot further trade with the financial collateral because of the limited security interest entitlement. Yet if the collateral taker is able to further trade with the financial collateral, then there will be a title transfer provision or a security interest with a right of use attached to the financial collateral; it is the *tradability* function that gives velocity to financial collateral.

5.2 The Scarcity of Financial Collateral

The Global Financial Crisis has been a key benchmark for numerous trends within the financial markets and has profoundly affected the supply of, and demand for, financial collateral. Commentators have suggested that post Global Financial Crisis, incoming rules have been a key driver in not only limiting the supply of financial collateral, but paradoxically creating a demand for financial collateral. Jay Cullen refers to it as a "paradox", because despite there being demand for high quality financial collateral, there is equally a compounding of financial collateral through regulatory reforms.[146] Such a paradox has essentially created a scarcity problem.[147] This view has been echoed at EU level, where the European Commission has stated that "the fluidity of collateral throughout the EU is currently restricted, preventing markets from operating efficiently. Since the financial crisis, the demand for collateral has increased, driven by market demand for more secured funding as well as new regulatory requirements, such as"[148] the Basel III reforms,[149] the Capital Requirements Regulation[150] and EMIR.[151]

145 Gullifer (n 16) 377 at 380.
146 Cullen (n 8) 85 at 87-88.
147 Autorité des Marches Financiers (n 143) 1 at 13-14.
148 European Commission Green Paper (n 69) 1 at 23.
149 See generally, Basel Committee on banking Supervision, "High-level summary of Basel III reforms" (December, 2017) available at: https://www.bis.org/bcbs/publ/d424_hlsummary.pdf.
150 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending regulation (EU) No 648/2012 (OJ L 176) Capital Requirements Regulation ("CRR").

The incoming post Global Financial Crisis rules that affect the supply of, and demand for financial collateral, start with the decline of the unsecured money market. In particular, the Global Financial Crisis highlighted that the money markets have led to an increased demand for high quality financial collateral. After the default of Lehman Brothers in September 2008, the demand for financial collateral increased as market participants were required by the market to provide more high-quality liquid financial collateral to secure their loans within the money markets.[152] Moreover, many financial transactions are now secured rather than unsecured and, in OTC markets, EMIR has introduced mandatory central counterparty clearing for many OTC derivative transactions, which also requires financial collateral to secure the transaction.[153] However, not all OTC derivative transactions are subject to mandatory central clearing and, in such a case, there is a market demand for participants in the financial sector to post high quality liquid financial collateral to mitigate risk.[154]

In addition, the 'liquidity coverage ratio' and 'net stable funding ratio' (as both referred to in chapter 2) under the Basel III framework have also given impetus to the scarcity problem. In particular, rules under the liquidity coverage ratio and net stable funding ratio require credit institutions to hold a certain percentage of high-quality liquid securities in reserve as a safety mechanism should problems occur. The securities held in reserve are essentially locked away and thus prevented from being utilised within the broader financial system. As noted by Levels and Capel:

> *"There is now a demand for large quantities of liquid assets – principally government bonds… to be locked away. It's not clear there are enough bonds to go round, and nobody knows how the system will function when it's less well lubricated".*[155]

It has been suggested by numerous commentators that these 'locked away' assets could otherwise be used for financial collateral thus providing an important source of liquidity to the marketplace.[156] Having such assets locked away would provide a further layer of stability to the traditional banking sector, which is the objective of the liquidity coverage ratio and net stable

151 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"). See also, Autorité des Marches Financiers (n 143) 1 at 9-13.

152 Autorité des Marches Financiers (n 143) 1 at 13. See also, levels and Capel (n 10) 29 at 30.

153 Article 4 EMIR.

154 Articles 11 (15) (a) and 46 (3) (a) EMIR. See also, Autorité des Marches Financiers (n 143) 1 at 13.

155 levels and Capel (n 10) 29 at 30. See also, McKinsey & Company, "Basel" IV: What's next for banks" (2017) *Global Risk Practice* 1 at 16-18.

156 Levels and Capel (n 10) 29 at 30. See also, M Ferrari, C Guagliano and J Mazzacurati, "Collateral scarcity premia in euro area repo markets" (October, 2017) *European Systemic Risk Board No 55 Working Paper Series;* Singh (n 65) 1 at 12.

funding ratio, however, on the other hand, it may lead to inefficiencies and potential liquidity problems within the broader financial system.[157]

Given that there is not a never-ending supply of high-quality liquid financial collateral, it has been noted that financial collateral is now 'scarce'. Without liquid financial collateral circulating the financial system, blockages within the financial plumbing may be significant given that a key lubricant for the efficient functioning of the financial markets is, indeed, financial collateral.[158] One way of mitigating the scarcity problem is to give financial collateral 'velocity' in the sense that the same security posted as financial collateral can be re-used several times over. However, as noted previously, the velocity of financial collateral does not come without problems.

5.3 Defining the Market Practice of Collateral 'Velocity'

Under the collateral velocity umbrella, many legal and economic commentators refer to the terms 're-hypothecation', 're-use', 'use', 'title transfer', 'security right' and 'right of use' interchangeably without making any clear distinction between these concepts. As a reader, it is very difficult to decipher the true meaning of such terms given their significance.[159] One can immediately relate to Louise Gullifer's comment that one of the most "complicated and intractable" areas of academic discussion relates to issues surrounding the law and economics of financial collateral.[160]

One of the reasons why these different yet equivocal terms have become conflated is because the language used in relation to the velocity of financial

157 See generally, Ferrari *et al* (n 156). See also, Singh (n 65) 1 at 12; levels and Capel (n 10) 29 at 30.

158 See generally Singh *Financial Plumbing* (n 11).

159 Singh *Financial Plumbing* (n 11) 2-3. See also, Basel Committee on Banking Supervision and Board of the International Organization of Securities Commission, "Margin requirements for non-centrally cleared derivatives" (March, 2015) *Bank for International Settlements* 1 at 19; Autorité des Marches Financiers (n 143) 1 at 3; Recital 35 and Article 20 (1) of 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; Recital 49 and Articles 15 (4), 23 (1) (a) and (5) (a), 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"); T Keijser, "Financial collateral arrangements in the European Union: current state and the way forward" (2017) *22 Unif. L. Rev.* 258 at 275-284.

160 L Gullifer, "Compulsory Central Clearing of OTC Derivatives: The Changing Face of the Provision of Collateral" in L Gullifer and S Vogenauer (eds), *English and European Perspectives on Contract and Commercial Law: Essays in Honour of Hugh Beale* (2014) 379 at 379-380. See also, Keijser (n 159) 258 at 275.

collateral can relate to literature regarding either law or economics. Given that there are numerous touch points where financial collateral is used and re-used, arguably adds to the confusion – for instance:[161]
1. The AIFMD uses the terms "use" and "re-use";[162]
2. The Geneva Securities Convention refer to the terms "use" and "right of use";[163]
3. EMIR contains provisions on "re-use"[164] and "right of use";[165]
4. The FCD utilises the terms "title transfer",[166] "security interest"[167] and "right of use";[168]
5. The SFTR[169] and the UCITS Directive both opt for the term "re-use";[170]
6. MiFID II refers to the term "use";[171] and,
7. The Financial Stability Board ("FSB"), International Monetary Fund and several other economic commentators explicitly refer to the terms "rehypothecation" and "re-use".[172]

In an effort to streamline this complicated area, it may be beneficial to unpack and categorise the relevant terms in order to provide clarity, notwithstanding that the above terms can have alternative meanings depending on the context. For the purpose of this section however, the economic language will be explored particularly in relation to the respective property law right.[173]

On an economic analysis, the functional economic equivalent to 'title transfer' and 'security interest' with a 'right of use' are the market practices of 'collateral re-use' and 're-hypothecation'. Both terms are often used

161 Keijser (n 159) 258 at 275-282.
162 Recital 49 and Articles 15 (4), 23 (1) (a) and (5) (a) AIFMD.
163 Article 34 (1) UNIDROIT Convention on Substantive Rules for Intermediated Securities.
164 Article 52 (1) EMIR.
165 Articles 39 (8) and 53 (2) EMIR.
166 Article 2 (1) (b) FCD.
167 Article 2 (1) (c) FCD.
168 Recital 19 and Article 2 (1) (m) FCD.
169 Under Recitals 23-25 SFTR, some reflections are noted to try and ensure consistency with terminology: "In order to promote international consistency of terminology, the use of the term 'reuse' in this Regulation is in line with the FSB Policy Framework. This should not, however, lead to inconsistency within the Union *acquis* and, in particular, should be without prejudice to the meaning of the term 'reuse' employed in Directives 2009/65/EC (UCITS) and Directive 2011/61/EU (AIFMD)".
170 Recital 19 and Article 22 (7) of Directive 2014/91/EU 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 depository functions, remuneration policies and sanctions.
171 Article 16 (9) MiFID II.
172 Singh *Financial Plumbing* (n 11) 15-34. See also generally, Financial Stability Board, Potential financial stability issues (n 141); S Claessens, L Ratnovski and M Singh, "Shadow Banking: Economics and Policy" (4 December, 2012) *IMF Staff Discussion Note* 1 at 14-17.
173 The legal analysis is described in this chapter above, see section 3.4.2 "*Material scope*".

interchangeably, however, each term has a very specific and slightly different meaning.[174] Each will be discussed in turn.

1. Collateral re-use: according to the FSB, collateral re-use occurs "when a market participant, such as a bank, receives securities as collateral in one transaction, and subsequently sells… or transfers this collateral, in a second transaction".[175] The re-use of financial collateral means that the collateral taker has a property law right to re-use the financial collateral in its own name and the practical effect is economically equivalent to title transfer. For example, in a typical collateral transaction with re-use rights, the financial collateral posted by the collateral giver to the collateral taker can be further traded in a completely separate transaction with a third party. Therefore, collateral re-use encompasses full ownership of the financial collateral and is an inherent characteristic of a title transfer arrangement because ownership changes as the financial collateral is re-used.

   It should also be noted that the SFTR plays an important role with regard to the re-use of financial collateral. The starting point is that the SFTR follows the same definition as the FSB in relation to collateral re-use: "the term 'reuse' in this Regulation is in line with the FSB Policy Framework".[176] Within the SFTR framework, there are certain conditions that must be met before the financial collateral can be re-used. For instance, the collateral giver must be informed by the collateral taker in writing on the risks and consequences of allowing re-use either under a security collateral arrangement or a title transfer collateral arrangement.[177] In addition, the collateral giver must "grant its prior express consent, as evidenced by a signature, in writing or in a legally equivalent" agreement.[178]
2. Re-hypothecation: the FSB defines the term 're-hypothecation' as "any use of a client asset by a financial intermediary, including use in a sale, pledge, transfer, investment or performance of transactions".[179] Re-hypothecation rights are only activated if there is agreement between the parties that the financial collateral has a 'security interest' with a 'right of use'. Under a re-hypothecation agreement, the collateral taker has a security interest in the financial collateral and will enjoy rights of re-hypothecation only if a 'right of use' is explicit under the respective master agreement.[180]

174 Singh *Financial Plumbing* (n 11) 2.
175 Financial Stability Board, Re-Use: Measures and Metrics" (n 141) 1 at 3. See also, Autorité des Marches Financiers (n 143) 1 at 9-14.
176 Recital 25 SFTR.
177 Article 15 (1) (a) (i) (ii) SFTR.
178 However, as will be discussed in Chapter 7, it is not entirely clear why a market participant has to give consent to re-use the financial collateral when ownership rights pass in a title transfer arrangement. See also, Article 15 (1) (b) SFTR; Autorité des Marches Financiers (n 143) 1 at 7-14.
179 Financial Stability Board, Potential financial stability issues (n 141) 1 at 3. See also, Autorité des Marches Financiers (n 143) 1 at 7-13.
180 Wilmot *et al* (n 6) 1 at 5. See also, Singh *Financial Plumbing* (n 11) 2-3.

6 CONCLUSION

To conclude, the primary function of collateral, in all forms, is to hedge default risk. Financial collateral goes further as it also facilitates liquid and efficient markets because it is an instrument that can be, subject to certain conditions, re-used multiple times over. Financial collateral is therefore a liquid and tradeable instrument used in collateral transactions that lubricates the plumbing of the EU shadow banking sector – it has money like equivalence and as such, has become one of the main building blocks upon which collateral transactions in the shadow banking sector are constructed.

Financial collateral is utilised by entities operating in the shadow banking sector through various collateral transactions, such as repos, securities lending and derivatives transactions. The performance of these transactions are crucial to efficient markets and providing the economy with an alternative source of funding to traditional banking channels. Financial collateral, as categorised by the Financial Collateral Directive, can come in the form of 'cash', 'financial instruments' and/or 'credit claims'. Cash is arguably the most widely sought-after form of financial collateral; however, it is equally finite. Therefore, government bonds are often used in collateral transactions because this form of debt instrument is underpinned by the country issuing the debt. However, financial collateral is not solely restricted to the Financial Collateral Directive given that the Financial Collateral Directive is limited in scope. Within a collateral transaction, financial collateral can essentially be any asset as long as it is mark-to-market, underpinned by the respective master agreement and provided there is consensus between the parties, then the financial collateral can be used as cash equivalent.

The velocity of financial collateral refers to the same security being re-used several times over. This velocity can act as a 'money multiplier', and coupled with the inherent tradability function, gives financial collateral money like equivalence. However, financial collateral can only have velocity if specific property law rights are attached, such as title transfer or a security interest with a right of use. Yet the increasing use of financial collateral has led to a scarcity problem. Commentators suggest that regulation, which requires assets to be stockpiled away, has indeed increased the scarcity of highly liquid securities. Velocity arguably attempts to mitigate this scarcity problem, but this does not come without risk.