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## Collateral transactions and shadow banking

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## 2 | Shadow banking<sup>1</sup>

### 1 INTRODUCTION

As the saying goes, “if it looks like a dog, barks like a dog and walks like a dog, then it is a dog”.<sup>2</sup> Yet an institution that acts like a bank and carries out the functions of a bank, may not be a bank, but instead, a shadow bank. According to Gary Gorton and Andrew Metrick, the shadow banking sector “performs *much* the same functions as traditional banking, but the names of the players are different and the regulatory structure is light... *to non-existent*”.<sup>3</sup>

Since the 1970’s the rise of the shadow banking sector has been rapid; it is a resilient sector that continues to grow and even after the 2007/2008 Global Financial Crisis, it now accounts for a significant part of the financial system.<sup>4</sup> Such impressive growth undoubtedly highlights the strength of the shadow banking sector and the consequent benefits it can bring to the economy as a whole. Significantly, the net credit growth of the economy since the Global Financial Crisis has come from the shadow banking sector rather than traditional banking channels.<sup>5</sup> However, the shadow banking sector also poses

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1 The chapter contains and builds upon the following work previously published by the author: K Parchimowicz and R Spence, “Basel IV Postponed: A Chance to Regulate Shadow Banking?” (2020) 13 (2) *Erasmus Law Review*. 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](http://financial-stability.org/wp-content/uploads/2019/11/2019_FSC-WS_PAPER_Spence_Vulnerabilities-of-debt-in-the-shadow-banking-sector.pdf).

2 L E Kodres, “What is Shadow Banking?” (2013) 50 (2) *Finance & Development* 42 at 42.

3 G Gorton and A Metrick, “Regulating the Shadow Banking System” (2010) *Brookings Paper on Economic Activity* 261 at 261-262 (*emphasis added*).

4 Financial Stability Board, “Global Shadow Banking Monitoring Report 2016” (10 May, 2017). See also, S L Schwarcz, “Shadow Banking and Regulation in China and Other Developing Countries” (2016) *Duke Law School Public Law & Legal Theory Series* 1 at 1-3; Z Pozsar, T Adrian, A Ashcraft and H Boesky, “Shadow Banking” (2013) *Federal Reserve Bank of New York Economic Policy Review* 1 at 13; C Lagarde, “The Challenge Facing the Global Economy: New Momentum to Overcome a new Mediocre” (2 October, 2014) *International Monetary Fund Speech at Georgetown University*.

5 R Davies, “The Moonshine of our Times: The Global Rise of Shadow Banking” (2015) *The International Economy* 70 at 71. See also, S Pearlstein quoting Federal Reserve Chair Jerome H Powell, “The shadow banks are back with another big bad credit bubble” (31 May, 2019) *Washington Post*; See generally, S Gebauer and F Mazelis, “Macroprudential regulation and

many risks, and given that it is not as stringently regulated as the traditional banking sector, it could become a serious cause of systemic concern. One only has to look to the Global Financial Crisis to discover the damaging role that the shadow banking sector played. As such, the importance of the shadow banking sector to the economy as a whole cannot be overemphasised.

The structure of this chapter, which is in three parts, can be summarised as follows. The first part of this chapter will attempt to define shadow banking. Due to the complex and arguably “pejorative” nature of shadow banking, there is now widespread controversy about what shadow banking is, and, as a consequence, how it should be defined.<sup>6</sup> Whilst the term ‘shadow banking’ is widely used, any attempt at a precise definition remains “shadowy” and “controversial”.<sup>7</sup> In order to try and achieve an appropriate definition of ‘shadow banking’, it is first important to understand how the shadow banking sector operates in practice. Not only will this provide a useful roadmap for the rest of this thesis, but it will become clear that a reason as to why shadow banking has been so difficult to effectively define may be because the shadow banking sector encompasses a varied and largely unrelated set of entities, activities and transactions. This part of the chapter will therefore explore the various definitional responses, consisting of both the broad and narrow views in relation to trying to find an appropriate definition.

The second part of this chapter will discuss the evolution of the shadow banking sector. This will be approached by explaining the distinction between the traditional banking sector and the shadow banking sector. The International Monetary Fund categorises banking by distinguishing between *core* and *non-core* liabilities. *Core* liabilities encompass traditional banking and includes funding from public depositors; whereas *non-core* liabilities include all remaining funding sources, namely market funding that lie outwith the *core* definition.<sup>8</sup> It is therefore possible to categorise the traditional banking sector as falling under the *core* liability pillar and the shadow banking sector coming under the *non-core* liability pillar. Such a distinction is important because, for numerous reasons, the traditional banking sector has been the catalyst for the rise of the shadow banking sector.

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leakage to the shadow banking sector” (May, 2020) 2406 ECB Working Paper Series, available at: <https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2406~af673f115a.en.pdf>.

6 J S Taub, “What We Don’t Talk About When We Talk About Banking” in M H Wolfson and G A Epstein (eds), *The Handbook of the Political Economy of Financial Crises* (2013) 447 at 451.

7 Financial Stability Board, “Shadow Banking: Scoping the Issues” (12 April, 2011) 1 at 2, available at: [http://www.fsb.org/wp-content/uploads/r\\_110412a.pdf](http://www.fsb.org/wp-content/uploads/r_110412a.pdf). See also, The Economist, “A Non-Bank by Any Other Name” (10 May, 2014), available at: <http://www.economist.com/news/special-report/21601623-shadow-banks-are-easier-define-what-they-are-not-what-they-are-non-bank>.

8 A Harutyunyan, A Massara, G Ugavio, G Amidzic and R Walton, “Shedding Light on Shadow Banking” (2015) *International Monetary Fund* 1 at 4-5.

The third and final part of this chapter will discuss the Global Financial Crisis and the need for regulation. Not only did the crisis expose significant fault lines within the financial system, but it also highlighted negative externalities. A negative externality occurs when an event like the Global Financial Crisis imposes costs on innocent third parties, such as society at large, for which these parties are not adequately compensated.<sup>9</sup> Because the shadow banking sector was at the very epicentre of the crisis, and the fact that the shadow banking sector remains outside prudential regulation, is indeed problematic. The concern is that without adequate regulation, the adverse effects that the shadow banking sector has had on the economy as a whole could easily re-appear should another crisis ensue.

## 2 DEFINING SHADOW BANKING

### 2.1 The Origins of Shadow Banking

In 2007, at the Annual Economic Policy Symposium of the Kansas City Federal Reserve in Jackson Hole, Wyoming, American economist Paul McCulley coined the term ‘shadow banking’ to describe a system that posed significant risk to financial stability because it was untouched by regulation, has lain hidden for years and operates on a subterranean level.<sup>10</sup> Yet despite ‘shadow banking’ being a relatively new term in the financial lexicon, the concept is not – the origins arguably tracing back to nineteenth century England when Walter Bagehot wrote *Lombard Street: A Description of the Money Market*.<sup>11</sup> Bagehot observed that London banks operated in parallel with financial firms known as ‘bill brokers’, who performed much the same functions as banks, but were not banks. Bagehot noted that bill brokers were “a special sort of banker who allow daily interest on deposits, and who for most of their money give security” as collateral to hedge risk.<sup>12</sup> In modern day terms, Bagehot’s definition of ‘bill brokers’, who performed the activity of converting bills into money, is very similar to what is known today as shadow banking.<sup>13</sup>

Walter Bagehot is not the only commentator to recognise the importance of the shadow banking sector over the decades, however. There have been

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9 J Armour, D Awrey, P Davies, L Enriques, J N Gordon, C Mayer and J Payne, *Principles of Financial Regulation* (2016) 57.

10 P A McCulley, “Teton Reflections” (2007) 2 *PIMCO Global Central Bank Focus*.

11 W Bagehot, *Lombard Street: A Description of the Money Market* (1873).

12 *Ibid* at 28.

13 For example, collateral transactions (namely, repurchase agreements, securities lending and derivatives), which will be discussed in greater detail in subsequent chapters. See also, M Ricks, “Regulating Money Creation after the Crisis” (2011) *Harvard Law School* 75 at 87-88; A M Paces and H Nabilou, “The Law and Economics of Shadow Banking” (2017) *ECCI Working Paper Series in Law* 1 at 5.

a whole host of other examples,<sup>14</sup> one of which is described by Friedrich Hayek, who, in 1931, observed that:

*"There can be no doubt that besides the regular types of circulating medium, such as coin, bank notes and bank deposits, which are generally recognised to be money or currency, and the quantity of which is regulated by some central authority... there also exists other forms of media of exchange... without being subject to any central control".<sup>15</sup>*

## 2.2 The Characteristics of Shadow Banking

The shadow banking sector functions within the legal perimeter, yet outside the confines of prudential bank regulation. Unlike the traditional banking sector, the shadow banking sector is not a single identifiable system, but a constantly evolving sector comprising a largely unrelated set of entities, activities and transactions. In particular, the shadow banking sector decomposes the process of credit intermediation into a sequence of discreet operations, which are pursued by very different types of financial market actors, who interact and rely upon the wholesale funding market.<sup>16</sup> In doing so, the shadow banking sector participates in the activity of credit intermediation by redistributing risk through credit, maturity and liquidity transformation, raising systemic risks, especially if combined with high leverage. Credit intermediation is indeed a defining characteristic of the shadow banking sector, and can be elucidated as follows:<sup>17</sup>

- *Leverage*: As opposed to using equity, leverage involves investing utilising borrowed funds;
- *Transferring credit risk*: The purpose of transferring risk is to pass it from one party who does not want the risk, to another party who is willing, for a fee, to take on the burden of risk;

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14 In 1993, the activity of what is known today as shadow banking was referred to as the "parallel banking system", see generally J W D'Árista and T Schlesinger, "The Parallel Banking System" *Economic Policy Institute Briefing Paper* (1993); 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 1-2.

15 F A Hayek, *Prices and Production* (1931) 113-114. See also, J Sweeney, "When Collateral is King" (2013) *Credit Suisse* 1 at 2-4, available at: [http://www.bankofengland.co.uk/research/Documents/ccbs/Workshop2013/presentation\\_sweeney.pdf](http://www.bankofengland.co.uk/research/Documents/ccbs/Workshop2013/presentation_sweeney.pdf).

16 S Ghosh, I Gonzalez del Mazo and I Otter-Robe, "Chasing the Shadows: How Significant is Shadow Banking in Emerging Markets?" (2012) 88 *The World Bank* 1. See also, R Spence "The Shadow Banking Conundrum" (2017) *Leiden Law Blog*, available at: <https://leidenlawblog.nl/articles/the-shadow-banking-conundrum>.

17 European Banking Authority, "EBA issues final Guidelines on institutions exposures to shadow banking entities and recommends approach to limiting risks" (15 December, 2015), available at: <https://www.eba.europa.eu/-/eba-issues-final-guidelines-on-institutions-exposures-to-shadow-banking-entities-and-recommends-approach-to-limiting-risks>.

- *Maturity transformation*: Involves borrowing funds for short periods of time and investing or lending for longer periods of time; and,
- *Liquidity transformation*: The term 'liquidity' represents the ease with which an asset can be turned into cash. Liquidity transformation relates to assets, such as cash, which is used to invest in less liquid assets, such as, shares or bonds.

Participants of the shadow banking sector include a wide range of bank and non-bank financial intermediaries conducting various activities who are not subject to prudential banking regulation. Players typically include, but are not limited to, money market mutual funds, hedge funds, prudentially regulated banks, investment firms/banks and special purpose vehicles to name a few.<sup>18</sup> The transactions through which these entities carry out their activities are generally repos, securities lending and/or derivatives transactions.<sup>19</sup>

Figure 2 below gives an illustration of the distinguishing features of the shadow banking sector and seeks to depict one of the many examples as to how this sector operates in practice.<sup>20</sup>

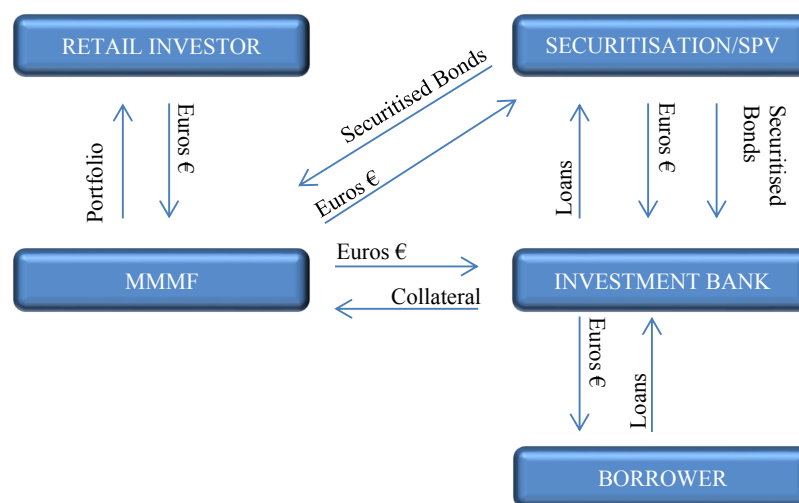


Figure 2: Shadow Banking Sector

Figure 2 above illustrates that a retail investor has chosen to invest outwith the traditional banking sector. In this example, the retail investor, such as a

<sup>18</sup> This list is not finite; in fact, virtually any entity operating in the financial system can conduct shadow banking in one way or another.

<sup>19</sup> These transactions will be discussed in greater detail in subsequent Chapters 3 and 5.

<sup>20</sup> Gorton and Metrick (n 3) at 264.

high net worth individual, whose investment exceeds the European Deposit Guarantee Scheme threshold of € 100,000,<sup>21</sup> has decided to invest in a money market mutual fund in return for shares in an investment portfolio. A money market mutual fund is a fund that invests in debt securities characterised by their minimal credit risk and short maturities. Now that the money market mutual fund has the new cash investment, it will then sell the money to, for instance, an investment bank. In return for the cash from the money market mutual fund, the investment bank will post collateral to hedge default risk. The collateral, in the form of marketable securities, is priced using a mark-to-market valuation and a certain percentage is discounted from this price, which is intended to hedge the risk on the collateral. The discounted percentage is referred to as the 'haircut' or 'initial margin' and is designed to provide a further layer of security against market price fluctuations.<sup>22</sup>

Given the size of transactions typically involved in the shadow banking sector, which will very quickly exceed the levels protected under the European Deposit Guarantee Scheme, the money market mutual fund will require assurance that they will be able to recoup the principal sum should the investment bank not be able to return the cash upon maturity. Collateral and the use of margin are these assurances and act as the functional equivalent to the European Deposit Guarantee Scheme found in the traditional banking sector. The transaction carried out between the money market mutual fund and investment bank is called a repo.<sup>23</sup> A repo is a contract where upon maturity, the principal amount is returned, with interest, whilst simultaneously returning equivalent collateral. In the EU, a repo is structured legally as a sale and repurchase but in practice behaves economically as a loan and repayment.<sup>24</sup>

However, the shadow banking sector is rarely as straightforward as suggested in the example above. For instance, it is often the case that the investment bank will not have enough collateral to complete the transaction with the money market mutual fund. In such a situation, the investment bank can,

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21 Recitals 21 and 23 and Article 6 (1) and (2), Directive 2014/49/EU of the European Parliament and the Council of 16 April 2014 on Deposit Guarantee Schemes ("DGSD"). Under the newly formed European Banking Union, the third pillar, titled the European Deposit Insurance Scheme ("EDIS"), is not yet operational. However, EDIS will take over from the current European Deposit Guarantee Scheme. On this, see Commissioner Lord Hill at the Press Conference on the EDIS Proposal at the European Parliament on 24 November, 2015 in Strasbourg, available at: [http://europa.eu/rapid/press-release\\_SPEECH-15-6154\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-15-6154_en.htm).

22 M Haentjens and P de Gioia-Carabellese, *European Banking and Financial Law* (2020) 236-238.

23 It must also be noted that money market mutual funds also invest in commercial paper, which is not collateralised.

24 By contrast, in the United States of America a repo transaction does not transfer legal title to the collateral, so title transfer is backstopped by the contingent pledging of collateral but with the pledge exempted from certain US Bankruptcy Code provisions that would normally apply to pledges. On this see, International Capital Market Association, "Frequently Asked Questions on Repo" (January, 2019) 1 at 17-18, available at: <https://www.icmagroup.org/assets/documents/Regulatory/Repo/Repo-FAQs-January-2019.pdf>. See also Haentjens and de Gioia-Carabellese (n 22) 231.

for example, generate on-balance sheet loans. They can get these loans on their balance sheet by taking all the Euros that it has received from the money market mutual fund and hand them over to borrowers as loans. What the investment bank will then do is sell and transfer their claims under the loan agreements to a 'special purpose vehicle' in a securitisation. The reason that the investment bank does this is that the securitisation can create, from the raw material of the loans, forms of asset-backed securities that can then be turned into bonds, which can subsequently be used as collateral for the money market mutual fund. In addition, the money market mutual fund may also be direct purchasers of this collateral, where they buy the bonds from the securitisation vehicle and in return, give cash over. That cash would then get recycled back through the investment bank in the same way as described above.

Through creative thinking, the investment bank that previously did not have enough collateral to complete the transaction is now able to finance all of its activity. This is done through multiple steps and these steps are necessary because no entity providing such a sum will want to complete such a transaction on an unsecured basis.

Entities operating in the shadow banking sector are not only closely linked to one another; they are also heavily interconnected with entities operating within the traditional banking sector.<sup>25</sup> There are indeed several channels that feed the interconnections between the shadow banking sector and the traditional banking sector, namely:<sup>26</sup>

- Traditional banks may be part of the shadow banking sector intermediation chain;
- Traditional banks can obtain funding through money market mutual funds or other entities and transactions that are part of the shadow banking sector; and,
- Traditional banks can provide financial support to the shadow banking sector through the provision of funds or contingent credit lines.

Many shadow banking activities involve a vast network of financial instruments, such as collateral transactions, which at some stage may have originated or been held by a traditional sector bank.<sup>27</sup> Commentators have therefore gone as far to state that shadow banks are effectively a subsidiary of their

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25 H Hannoun, "Financial Deepening Without Financial Excesses" (21 March, 2008) *Bank for International Settlements Speech at the 43<sup>rd</sup> SEACEN Governors' Conference, Jakarta* 1 at 8, available at: <http://www.bis.org/speeches/sp080403.pdf>.

26 E Jeffers and C Baicu, "The Interconnections Between the Shadow Banking System and the Regular Banking System: Evidence from the Euro Area" (2013) 2013/07 *CITYPERC Working Paper Series* 1 at 4.

27 D Luttrell, H Rosenblum and J Thies, "Understanding the Risks Inherent in Shadow Banking: A Primer and Practical Lessons Learned" (2012) *Federal Reserve Bank of Dallas Staff Papers* 1 at 6.



traditional parent bank.<sup>28</sup> While a key difference between the shadow banking sector and the traditional banking sector is that traditional sector banks are subject to prudential regulation and the shadow banking sector is not, it is still often very difficult to draw a clear line between traditional banking sector and shadow banking sector activities.<sup>29</sup>

*“Due to the interconnectedness of financial institutions’ balance sheets through a web of counterparty exposure and difficult to value securities, market participants can quickly lose confidence because of their inability to manage and measure risk appropriately.”<sup>30</sup>*

Such interconnectedness creates a channel for contagion and therefore systemic risk within the entire banking system. Difficulties within the shadow banking sector can, therefore, propagate within the traditional sector and vice versa, thereby affecting the real economy.<sup>31</sup>

### 2.3 Appropriateness of the Term

The fact that the shadow banking sector now accounts for a significant part of the financial system makes one wonder whether the term ‘shadow banking’ is “pejorative”?<sup>32</sup> Indeed, the term automatically implies a sector of dubious legality containing somewhat “clandestine” and “nefarious” connotations.<sup>33</sup> Arguably, however, this explanation does capture the activities that played a large part in precipitating and exacerbating the Global Financial Crisis, such as excessive self-interest, corporate greed, poor governance and regulatory

28 P Tucker, “Shadow Banking: Thoughts for a Possible Policy Agenda” (27 April, 2012) *Bank of England Speech* 1 at 2, available at: <http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2012/speech566.pdf>. See also, J Lee, “Shadow Banking in China: Boon or Threat?” (2016) *Financier Worldwide* 1 at 5, available at: <http://www.financierworldwide.com/shadow-banking-in-china-boon-or-threat/#.V5fYmpOAOko>; M L Fein, “The Shadow Banking Charade” (15 February, 2013) 1 at 8, available at: <https://www.sec.gov/comments/s7-04-09/s70409-95.pdf> – where Melanie Fein argues that commercial banks have now become the largest shadow banks.

29 Luttrell *et al* (n 27) at 6.

30 Luttrell *et al* (n 27) at 15.

31 N Doyle, L Hermans, P Molitor and C Weistroffer, “Shadow Banking in the Euro Area: Risks and Vulnerabilities in the Investment Fund Sector” (2016) 174 *European Central Bank Occasional Paper* 1 at 3, available at: <https://www.ecb.europa.eu/pub/pdf/scpops/ecbop174.en.pdf?2cc4d889706adbc918c06de4e5df144>.

32 M Singh, “The Economics of Shadow Banking” (2013) *Reserve Bank of Australia Conference Volume* 5 at 22 (footnote 29). See also, Spence (n 16).

33 J Macey, “It’s All Shadow Banking, Actually” (2011 – 2012) 31 *Rev. Banking & Fin. L* 593 at 593. See also, E Lee, “Shadow Banking System in China after the Global Financial Crisis – Why Shadow Banks can Distort the Capital Market Order” (2015) 3 *Peking University Law Journal* 361 at 362-363.

arbitrage<sup>34</sup> – this is potentially a reason as to why the shadow banking sector now has such an ignominious reputation.<sup>35</sup>

Yet the shadow banking sector is not all related to systemic risk. There are many elements of the sector that pose little systemic threat. As such, commentators have argued that it may be beneficial to disaggregate the various elements that fall under the ambit of the shadow banking sector by assessing the risks and benefits they present.<sup>36</sup> It is arguably incorrect and technically imprecise to categorise the safe and beneficial aspects under the negative term ‘shadow banking’. In an attempt to facilitate this disaggregation, more synonymous and neutral phrases, such as, “parallel banking”,<sup>37</sup> the “market-based credit system”,<sup>38</sup> “non-bank financial intermediation”<sup>39</sup> and “near-bank entities”<sup>40</sup> have all been coined in an attempt to replace the original term. An interesting comparison can be drawn with India, who uses the term: “Non-Banking Financial Company”, which has been within the regulatory architecture of the Reserve Bank of India since 1963.<sup>41</sup> Nevertheless, despite the valiant efforts, the term ‘shadow banking’ continues to be used in most jurisdictions and by many commentators, potentially to highlight that a problem exists and the urgent need to address it.<sup>42</sup>

The term ‘shadow banking’ is, therefore, both an unfortunate use of words and a stroke of genius. Unfortunate, because the term is wrongly ascribed to many safe and beneficial elements of the financial system. Genius, because the very phrase ‘shadow banking’ invokes something hidden, furtive even;

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34 The Global Financial Crisis will be discussed in greater detail below, see section

35 E McBride and S Pignal, “Shadow and Substance” (10 May, 2014) *The Economist*, available at: [http://www.economist.com/sites/default/files/20140510\\_international\\_banking.pdf](http://www.economist.com/sites/default/files/20140510_international_banking.pdf).

36 D K Tarullo, “Thinking Critically about Nonbank Financial Intermediation” (17 November, 2015) *Speech given at the Brookings Institution in Washington D.C.*, available at: <https://www.federalreserve.gov/newsevents/speech/tarullo20151117a.htm>.

37 T Geithner, “Reducing Systemic Risk in a Dynamic Financial System” (9 June, 2008) *Federal Reserve Bank of New York*. See also, D’Árista and Schlesinger (n 14) at 7.

38 P Mehrling, *The New Lombard Street: How the Fed Became the Dealer of Last Resort* (2011) 113. See also, 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) 1 at 2-4.

39 Financial Stability Board, “Global Monitoring Report on Non-Bank Financial Intermediation 2019” (19 January, 2020), available at: <https://www.fsb.org/wp-content/uploads/P190120.pdf>.

40 R H Huang, “Shadow Banking and its Regulation: The Case of China”, in R Buckley, E Avgouleas and D Arner (eds) *Reconceptualising Global Finance and its Regulation* (2016) Chapter 17 generally.

41 Non-banking finance companies are said to include: Insurance companies, pension funds and public financial institutions. See, R Gandhi, “Danger Posed by Shadow Banking Systems to the Global Financial System – The Indian Case” (21 August, 2014) *International Conference on Governance & Development: Views from G20 Countries* 1 at 4-5, available at: <http://www.bis.org/review/r140827b.pdf>.

42 Huang (n 40) at 340.

a sort of film noir backdrop in contrast to the well-lit setting of the insured depository banking institution.<sup>43</sup>

## 2.4 The Definition Problem

‘Shadow banking’ is often used as a catch-all term to refer to a number of divergent entities, activities and transactions. The amorphous nature of the term ‘shadow banking’ has arguably become an obstacle to providing a clear and commonly agreed definition. There are many different objects wrapped up in this term, each manifesting different issues requiring different definitional responses.<sup>44</sup> The current debate is centred around two approaches to defining shadow banking, namely the broad approach, which covers entities and activities, and the narrow approach, which identifies transactions – each will be discussed in turn.

### 2.4.1 A broad definition

American economist Paul McCulley, who as noted above coined the term ‘shadow banking’, defined shadow banking as “the whole alphabet soup of levered up non-banking investment conduits, vehicles and structures”.<sup>45</sup> However, one could argue that McCulley’s definition does very little in defining shadow banking. Instead, it merely describes the world of structured finance, which creates and utilises these forms of vehicles, structures and conduits.<sup>46</sup> Since McCulley’s attempt at defining shadow banking, there have been many other definitional responses, some of which are outlined in the *Broad Definition Matrix* below.

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43 A Nesvetailova, “The Evolution of Nowhere Banking” (2014) *Risk & Regulation* 6 at 6-7.

44 S L Schwarcz, “Regulating Shadow Banking” (2013) 31 *The Review of Banking & Financial Law* 619 at 642 (footnote 104).

45 McCulley (n 10). See also, Schwarcz (n 44) at 620; J S Alworth and G Arachi, *Taxation and the Financial Crisis* (2012) 192.

46 Schwarcz (n 44) at 620.

Table 1: Broad Definition Matrix:

AUTHOR	DEFINITION
Bank of England (2010)	"Instruments, structures, firms, or markets which, alone or in combination, replicate, to a greater or lesser degree, the core features of commercial banks: monetary or liquidity services, maturity mismatch, and leverage". <sup>47</sup>
Financial Stability Board (2011)	"Credit intermediation involving entities and activities outside the regular banking system". <sup>48</sup>
European Central Bank (2012)	"Activities related to credit intermediation, liquidity, and maturity transformation taking place outside the regulated banking system". <sup>49</sup>
Federal Reserve (2013)	"Shadow banking activities consist of credit, maturity, and liquidity transformation that take place without direct and explicit access to public sources of liquidity or credit backstops". <sup>50</sup>
Deutsche Bundesbank (2014)	"All entities and activities that are involved in credit intermediation outside the regular commercial banking system". <sup>51</sup>

Every definition outlined in *Table 1* above adopts a broad and all-encompassing approach. For several reasons, trying to define shadow banking in such a way is arguably a fruitless endeavour. Firstly, the scope of these definitions are too wide – the purpose of defining shadow banking in this way appears to be more suitable for surveillance and monitoring, rather than to provide an adequate workable definition. Secondly, these definitions are not the most enlightening, and raise more questions than they answer. Questions, such as, who are the entities and what are the activities and transactions that comprise the shadow banking sector?<sup>52</sup> Thirdly, financial innovation and regulatory change across multiple jurisdictions ensures that the nature of the shadow banking sector is fluid and constantly evolving.<sup>53</sup> It is therefore submitted

47 P Tucker, "Shadow Banking, Financing Markets and Financial Stability" (21 January, 2010) *Bank of England News Release*.

48 Financial Stability Board, "Shadow Banking: Strengthening Oversight and Regulation" (27 October, 2011) 1 at 1.

49 K Bakk-Simon, S Borgioli, C Giron, H Hempell, A Maddaloni, F Recine and S Rosati, "Shadow Banking in the Euro Area: An Overview" (April, 2012) 133 *ECB Occasional Paper Series* 1 at 5.

50 Pozsar *et al* (n 4) at 1.

51 Deutsche Bundesbank, "The shadow banking system in the euro area: overview and monetary policy implications" (March, 2014) *Monthly Report* 15 at 17.

52 V Lemma, *The Shadow Banking System: Creating Transparency in the Financial Markets* (2016) 18. See also, E Lee, "The Shadow Banking System – Why it Will Hamper the Effectiveness of Basel III" (2015) 008 *University of Hong Kong Faculty of Law Research Paper* 1 at 13.

53 Financial Stability Board (n 4) at 2.

that trying to define shadow banking using this broad approach will always be a challenge. Identifying and summarising a complete set of characteristics that can apply to past, present and future shadow banking entities, activities and transactions may prove to be too difficult a task.

#### 2.4.2 A narrow definition

Instead of adopting a broad and all-encompassing definition, a better approach may be to construct a definition in relation to the purpose for which shadow banking is used. For example, the purpose of this thesis will be to focus on collateral transactions and particularly the role of collateral and margin within the EU shadow banking sector by exploring shadow banking as a market-based finance system that has its roots in the money markets. The money market is a market where transactions such as repos, securities lending and derivative contracts facilitate collateralised finance; it is a market where long-term capital market assets are funded with short-term money market liabilities. According to Perry Mehrling and others, one-way of describing collateral transactions in the shadow banking sector is: “money market funding of capital market lending”.<sup>54</sup> The *Narrow Definition Matrix* below illustrates two possible responses to a workable definition of shadow banking.

Table 2: *Narrow Definition Matrix*:

AUTHOR	DEFINITION
Daniela Gabor and Jakob Vestergaard (2016)	“Repo liabilities supported by tradable collateral”. <sup>55</sup>
Alessio Paces and Hossein Nabilou (2016)	“Leveraging on collateral to support liquidity promises”. <sup>56</sup>

The aforementioned definitions can be described as ‘functional’. A functional approach is able to unpack the economic purposes of the transactions used within the shadow banking sector. Such an approach is beneficial because it is intended to capture the complex practices through which money is created within the modern financial system.<sup>57</sup> Exploring the shadow banking sector in this way, that is, through the lens of the transactions with which the shadow banking sector functions, requires a “money view”.<sup>58</sup> The money view

<sup>54</sup> Mehrling *et al* (n 38) at 2.

<sup>55</sup> D Gabor and J Vestergaard, “Towards a theory of shadow money” (2016) *Institute for New Economic Thinking Working Paper* 1 at 1.

<sup>56</sup> Paces and Nabilou (n 13) at 11.

<sup>57</sup> Gabor and Vestergaard (n 55) 1 at 2-5.

<sup>58</sup> P Mehrling, “Essential hybridity: A money view of FX” (2013) 41 (2) *Journal of Comparative Economics*.

captures a distinctive element of the shadow banking sector: it is a market-based finance system where debt relationships are organised via tradable securities.<sup>59</sup>

Both definitions in *Table 2* above refer to collateral, and it is precisely the presence of collateral that gives the shadow banking sector its distinctive character. Collateral comes in the form of marketable financial assets and depending upon the liquidity of the collateral, implies the promise of cash immediacy without making much of a loss. Collateral can therefore be described as a mechanism that is designed to hedge default risk. It is a safety net implying that, should the borrower default, the collateral can be liquidated to make good on the promise. Collateral is the underpinning feature that makes such promises credible. As such, collateral is widely recognised as having “money”,<sup>60</sup> “cash”<sup>61</sup> and “quasi-money”<sup>62</sup> like equivalence. However, the implied liquidity of collateral, and the fact that it can be considered to be as safe as money, makes the contracts backed by the collateral, such as repos, securities lending and derivatives, subject to run<sup>63</sup> – which was a fundamental issue during the Global Financial Crisis and continues to be an issue during the current Covid-19 pandemic.<sup>64</sup>

### 3 THE RISE OF SHADOW BANKING

#### 3.1 Introduction

How then has the shadow banking sector risen to prominence? There are arguably four inter-related steps of reasoning. Firstly, changes in prudential regulation underpinning the traditional banking sector, such as the evolution of the Basel Accords. Secondly, as a result of new incoming prudential regulation, there has arguably been a subsequent drop in profitability in the traditional banking sector. Thirdly, this drop-in profitability has proved to be a

59 Chapter 6 “The Role of Debt in the Shadow Banking Sector” explores debt relationships in greater detail. See also generally, Gabor and Vestergaard (n 55).

60 G Yeowart, R Parsons, E Murray and H Patrick, *Yeowart and Parsons on the Law of Financial Collateral* (2016) 155.

61 M Singh, *Collateral Reuse and Balance Sheet Space* (2017) 5.

62 E Perotti, “The roots of shadow banking” (December, 2013) 69 *Policy Insight Centre for Economic Policy Research* 1.

63 Paces and Nabilou (n 13) at 5.

64 At the time of writing 15 January, 2021. Issues in relation to the Global Financial Crisis and Covid-19 will be discussed in greater detail below. See also generally, A Schrimpf, H S Shin and V Sushko, “Leverage and margin spirals in fixed income markets during the covid-19 crisis” (2 April, 2020) 2 *BIS Bulletin*. See also, OECD, “The impact of the coronavirus (COVID-19) crisis on development finance” (24 June, 2020), available at: [https://read.oecd-ilibrary.org/view/?ref=134\\_134569-xn1go1i113&title=The-impact-of-the-coronavirus-\(COVID-19\)-crisis-on-development-finance](https://read.oecd-ilibrary.org/view/?ref=134_134569-xn1go1i113&title=The-impact-of-the-coronavirus-(COVID-19)-crisis-on-development-finance).

real challenge and market participants have therefore exploited regulatory arbitrage and found new ways to conduct business outside the prudentially regulated perimeter. Lastly, because market participants have found ways to avoid the costly and burdensome prudential regulation, financial innovation has flourished, resulting in an increased demand for novel and adaptable financial products offering an above market yield. These factors have all been key facilitators of the rise of the shadow banking sector and as such, each will be discussed in turn.

### 3.2 Prudential Regulation

Before discussing the evolution of the Basel Accords, it is first important to note that in the EU, in order to reach the status of a 'bank' operating in the traditional banking sector, and carry out the prudentially "regulated activity of accepting deposits... from the public", the "credit institution" must meet various regulatory requirements to gain a banking licence.<sup>65</sup> By contrast, to perform shadow banking is a much simpler and cheaper process because there is no requirement of holding such a licence. This is because the shadow banking sector does not have public depositors who require protection in the form of prudential regulation, but instead, have investors who themselves take on the burden of risk.<sup>66</sup>

#### 3.2.1 Evolution of the Basel Accords

The evolution of the various Basel Accords has been noted to have inadvertently fuelled the growth of the EU shadow banking sector.<sup>67</sup> According to the Basel Committee on Banking Supervision, the aim of the Basel Accords is to:

*"Strengthen global capital and liquidity rules with a goal of promoting a more resilient banking sector. The objective... is to improve the banking sector's ability to absorb shocks arising from financial and economic stress... thus reducing the risk of spill-over from the financial sector to the real economy".<sup>68</sup>*

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<sup>65</sup> Article 4 (1) (1) of the Capital Requirements 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) ("CRR").

<sup>66</sup> Kodres (n 2) at 42.

<sup>67</sup> B Baur and P Wackerbeck, 'Into the Shadows: How Regulation Fuels the Growth of the Shadow Banking Sector and how Banks Need to React' (19 June, 2013) *European Financial Review*, available at: <http://www.europeanfinancialreview.com/?p=1065>.

<sup>68</sup> Basel Committee on Banking Supervision, "Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems" (2010), available at: <http://www.bis.org/publ/bcbs189.pdf>.

However, it has been argued that Basel I and II were major drivers that led to the Global Financial Crisis.<sup>69</sup> In particular, the proliferation of off-balance sheet exposures and inadequate growth of banks' capital, which were facilitated by the shadow banking sector, undermined Basel II's risk weighted capital regulation regime. Moreover, after the Global Financial Crisis, Basel III came into effect which significantly amended Basel II and was aimed at preventing another crisis by reducing financial and economic stress and minimising the aftershock effects in the economy.<sup>70</sup>

### 3.2.1.1 *Basel III*

Under Basel III, there are three specific requirements imposed on banks that can be argued to have given rise to shadow banking. Firstly, in the EU there is a capital adequacy regime holding that traditional sector banks must maintain a set minimum capital level of 8%.<sup>71</sup> This means that banks operating in the traditional banking sector are required to hold a minimum ratio of capital to risk-weighted assets. By holding a percentage of deposits on the balance sheet, the ultimate aim is to ensure the stability of the financial system by keeping the traditional banking sector solvent.

In order to calculate the capital a bank needs to hold against its assets, the Capital Requirements Regulation describes how to weigh a bank's assets relative to risk. This phenomenon is the so-called 'risk weighted assets'. Assets that are safe and highly liquid, such as cash or gold are disregarded from the risk weighted asset regime; other assets that carry a higher risk, such as loans to other institutions are attributed a higher risk weight. The riskier assets the bank holds, the more capital it has to maintain. Capital comes in two forms: *going concern* and *gone concern*, each will be discussed in turn.

- *Going concern* capital is the type of capital that has a loss absorbing capacity so that a bank can continue its activities and remain solvent. This type of capital is referred to as Tier 1 capital. Under Article 25 of the Capital Requirements Regulation, Tier 1 capital consists of both Common Equity Tier 1 ("CET 1") capital and Additional Tier 1 ("AT 1") capital. CET 1 can be capital instruments, share premium accounts, retained earnings and other reserves. AT 1 capital is not defined in the Capital Requirements Regulation but must comply with Article 52 (1) of the Capital Requirements Regulation. For example, certain subordinated loans, hybrids and convertibles.

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69 Basel II adopted several of the Basel I requirements. See also, F Cannata and M Quagliariello, "The Role of Basel II in the Subprime Financial Crisis: Guilty or Not Guilty?" (2009) 1 at 15, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1330417](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1330417).

70 See generally, Basel Committee on Banking Supervision (n 68).

71 Article 92 (1) (c) CRR.



- *Gone concern* capital helps ensure that depositors and senior creditors can be repaid, should the bank fail. This type of capital is called Tier 2 capital and is defined under Article 71 of the Capital Requirements Regulation. Tier 2 capital consists of capital instruments, subordinated loans and share premium accounts.

The minimum 8% capital requirement regime is composed of 6% Tier 1 capital, namely 4.5% of CET 1 and 1.5% of AT 1; and, 2% is composed of Tier 2 capital.<sup>72</sup>

Secondly, an underlying feature of the Global Financial Crisis was the build-up of excessive leverage in the traditional banking sector. In many cases, banks built up excessive leverage while maintaining strong risk-based capital ratios. Basel III seeks to restrict this by encouraging banks to take initiatives to reduce their balance sheets by placing a limit on the size of activities a bank can develop compared to its own capital. To achieve this, a minimum leverage ratio has been developed. The “leverage ratio is calculated by dividing a bank’s CET 1 capital by the bank’s average total consolidated assets. Banks have been set a target of maintaining a leverage ratio in excess of 3% under Basel III”.<sup>73</sup>

The third requirement Basel III imposes on the traditional banking sector is the introduction of liquidity ratios. The first is the ‘liquidity coverage ratio’. The objective of the liquidity coverage ratio is to promote the short-term resilience of the liquidity risk profile of banks. It does this by ensuring that banks have an adequate stock of unencumbered high-quality liquid assets that can be converted immediately to meet their liquidity needs for a 30-calendar day liquidity stress scenario.<sup>74</sup> The second is the ‘net stable funding ratio’. The net stable funding ratio requires banks to maintain a stable funding profile in relation to the composition of their assets and off-balance sheet activities. A sustainable funding structure is intended to reduce the likelihood that disruptions to a bank’s regular funding sources will erode its liquidity position in a way that would increase the risk of failure and potentially lead to broader systemic stress.<sup>75</sup>

<sup>72</sup> Haentjens and de Gioia-Carabellese (n 22) 130-134.

<sup>73</sup> Basel Committee on Banking Supervision, “Basel III leverage ratio framework and disclosure requirements” (January, 2014) *Bank for International Settlements*, available at: <http://www.bis.org/publ/bcbs270.pdf>. See also, Curtis, Mallet-Prevost, Colt and Mosie LLP, “Basel III and Their Application to Banks in Oman” (2014) *Oman Law Blog*, available at: <https://omanlawblog.curtis.com/2014/08/basel-iii-principles-and-their.html>.

<sup>74</sup> *Ibid.* See also, 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.

<sup>75</sup> Basel Committee on Banking Supervision, “Basel III: The Net Stable Funding Ratio” (October, 2014) *Bank for International Settlements*, available at: <http://www.bis.org/bcbs/publ/d295.pdf>. See also Curtis *et al.* (n 73).

### 3.2.1.2 Basel IV

The most recent Basel Accord, Basel IV, is complementary to Basel III in that Basel IV was introduced to repair the omissions of Basel III. By doing so, Basel IV “now completes the global reform of the regulatory framework which began following the onset of the Global Financial Crisis”.<sup>76</sup> It also constitutes the most recent global regulatory initiative, the consequences of which can be argued to contribute to the rise of the EU shadow banking sector.

Under Basel III, the arguably most important requirement is that of capital adequacy, which as described above, is correlated to risk weighted assets. However, the calculation of risk weighted assets had never been comprehensively regulated in any of the previous Basel Accords.<sup>77</sup> Banks could either apply the ‘standardised approach’ based on the risk weights determined by supervisors or recognised credit rating agencies, or use the ‘internal ratings-based model’, which allows banks themselves to establish their own criteria for risk-weighting. This choice was left to the banks’ discretion. In practice, this means that banks could have a direct influence on the final level of the required regulatory capital. It seems hard to find a better incentive for gaming such a calculation process.<sup>78</sup> *The Economist* called the ‘internal ratings-based model’ resulting capital – ‘do-it-yourself capital’.<sup>79</sup> The significant variation in risk weighted assets across banks with very similar portfolios only proved that nickname to be right.<sup>80</sup> Basel IV aims to limit the use of the ‘internal ratings-based model’ approach and instead force market participants to rely more heavily on the ‘standardised model’ constructed by supervisors. By “restoring credibility in the calculation of risk weighted assets and improving comparability of banks” capital ratios, Basel IV seeks to finalise the suite of Basel Accords.<sup>81</sup>

However necessary these reforms sound, the final shape of the Basel Accords is far from perfect. Neither “restored credibility” nor “facilitated

76 Mario Draghi quoted in C Binham, M Arnold and C Jones ‘New Basel rules on capital hit European banks’ *Financial Times* (7 December, 2017), available at: <https://www.ft.com/content/ec3fb98e-db67-11e7-a039-c64b1c09b482>.

77 Basel I praised the standardised approach, but then it changed and in both Basel II and III regulators left some discretion regarding the choice of either standardised or internal approach. As a result, banks were able to decide how to calculate risk weighted assets, and therefore indirectly, how much capital to hold.

78 For an in-depth analysis of how and why risk weighted asset calculations vary see V Le Leslei and S Avramova, “Revisiting Risk-Weighted Assets: Why Do RWAs Differ Across Countries and What Can Be Done About It?” (2012) 12/90 *IMF Working Paper*, available at: <https://www.imf.org/external/pubs/ft/wp/2012/wp1290.pdf>.

79 *The Economist*, “DIY Capital” (8 December, 2012), available at: <https://www.economist.com/news/finance-and-economics/21567958-edifice-modern-bank-regulation-comes-under-scrutiny-diy-capital>.

80 Rima Turk-Ariss, ‘Heterogeneity of Bank Risk Weights in the EU: Evidence by Asset Class and Country of Counterparty Exposure’ (2017) 17/137 *IMF Working Paper*.

81 Basel Committee on Banking Supervision, ‘Finalising Basel III IN BRIEF’ (2017), available at: <https://www.bis.org/bcbs/publ/d424inbrief.pdf>.

comparability”<sup>82</sup> that regulators aim for are entirely worth the price that the EU banks will have to pay to comply with the new requirements. Most importantly, the negative consequences to be expected in connection with the implementation of Basel IV, such as that related to profitability, could result in a further exodus into the less regulated and more profitable shadow banking sector.<sup>83</sup>

### 3.2.1.3 Some observations

The purpose of prudential regulation is to subject the traditional banking sector to certain restrictions and requirements while maintaining the integrity of the financial system with the hope of preventing or limiting future crises. Financial stability is therefore better moderated and the risk to depositors and the government is arguably minimised.<sup>84</sup> Importantly, the introduction of the Bank Recovery and Resolution Directive (“BRRD”),<sup>85</sup> the Single Resolution Mechanism,<sup>86</sup> safety nets, namely the European Deposit Guarantee Scheme and emergency backstops, such as the European Stability Mechanism<sup>87</sup> and the lender of last resort are now in place to facilitate financial stability in the traditional banking sector.

In particular, underpinning banks operating in the traditional banking sector is the lender of last resort. In the case of the EU, the lender of last resort is the National Central Bank in the specific Member State.<sup>88</sup> The National Central Bank, amongst other things, acts as an emergency backstop by provid-

82 See generally, Basel Committee on Banking Supervision, ‘High-level summary of Basel III reforms’ (2017), available at: [https://www.bis.org/bcbs/publ/d424\\_hlsummary.pdf](https://www.bis.org/bcbs/publ/d424_hlsummary.pdf).

83 K Parchimowicz and R Spence, “Basel IV Postponed: A Chance to Regulate Shadow Banking?” (2020) 13 (2) *Erasmus Law Review* 1 at 9-12.

84 M Han, *Central Bank Regulation and the Financial Crisis: A Comparative Analysis* (2015) 32.

85 Bank Recovery and Resolution Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council (“BRRD”). The BRRD introduces the ‘bail-in’ mechanism whereby the banks’ shareholders and creditors are exposed to risk, rather than the taxpayer. The BRRD is also in place to deal with the comprehensive and effective arrangements of failing banks at a national level along with tackling cross-border banking failures.

86 The Single Resolution Mechanism ensures an orderly resolution of failing banks with minimal costs to taxpayers and the real economy. See also, European Commission, “AMC Blueprint: Second Progress Report on the Reduction of Non-Performing Loans in Europe” (2018) *Commission Staff Working Document* {COM (2018) 133 final}, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018SC0072>.

87 The European Stability Mechanism has a lending capacity of €500 billion and is in place to provide financial assistance to Euro area countries who experience severe financial problems.

88 In the Eurozone it is the European Central Bank. Other examples include the Bank of England in the United Kingdom or the DNB in the Netherlands.

ing emergency liquidity assistance should something go wrong.<sup>89</sup> Strict prudential rules and regulations are therefore necessary to circumvent government and taxpayer exposure to unnecessary risk.<sup>90</sup> The shadow banking sector, on the other hand, has no *explicit* backstop and is therefore not subject to stringent and costly rules and regulations.

However, it should be noted that two important events of 2019/2020 do suggest that there may indeed be an *implied* backstop in the shadow banking sector.<sup>91</sup> Firstly, on 15 September 2019, the repo market experienced a liquidity shortage. The United States Federal Reserve stepped in and provided a liquidity backstop by injecting in excess of \$75 billion to provide market participants with much needed cash.<sup>92</sup> More recently, on 16 March 2020, Rana Foroohar noted that as a result of the Covid-19 pandemic, “central banks are backstopping the financial system with its repo operations, as banks exchange government bonds for cash” – this also includes the EU shadow banking sector.<sup>93</sup> While the general consensus is that the EU shadow banking sector has no *explicit* access to lender of last resort facilities, on these recent views, it could be inferred that there is actually some form of last resort facility, albeit *implied*.

Because the shadow banking sector is not subject to prudential regulation, one reason why the sector has flourished is because it has the ability to circumvent such regulatory constraints.<sup>94</sup> Regulation, such as those implemented by the Basel Accords, are both expensive and burdensome for the traditional banking sector. Credit institutions have to continually alter their business models to comply with incoming rules and regulations, which ultimately impedes profitability. Regulators are essentially forcing credit institutions to disclose information and hold minimum capital reserves. This is arguably something that they may otherwise be reluctant to do. The shadow banking sector in particular has therefore proved to be a popular route for various entities – it is a sector that is more profitable precisely because it is subject to less stringent rules.

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89 P Praet, “The ECB and its role as lender of last resort during the crisis” (10 February, 2016) *European Central Bank Speech at the Committee on Capital Markets regulation Conference, Washington DC*. See also, European Central Bank, “Agreement on emergency liquidity assistance” (17 May, 2017), available at: <https://www.ecb.europa.eu/mopo/ela/html/index.en.html>.

90 M McLeay, A Radia and R Thomas, “Money Creation in the Modern Economy” (2014) *Q1 Bank of England Quarterly Bulletin* 1 at 2-9. See also, P J Wallinson, “Why Do We Regulate Banks?” (2005) *Banking & Finance* 14 at 15-16.

91 At the time of writing 1 January, 2021.

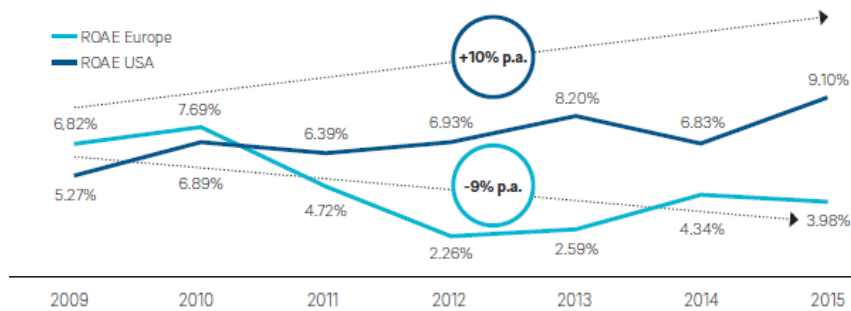
92 The Economist, “Repo-market ructions were a reminder of the financial crisis” (26 September, 2019); see also, G Tett, “The repo markets mystery reminds us that we are flying blind” (19 September, 2019) *Financial Times*, available at: <https://www.ft.com/content/35d66294-dadc-11e9-8f9b-77216ebe1f17>.

93 R Foroohar, “How the virus became a credit run” (16 March, 2020) *Financial Times* 1 at 17.

94 Lee (n 52) 1 at 13.

### 3.3 Profitability

A concomitant reason as to why the shadow banking sector has risen to prominence relates to profitability. While it is not disputed that the tightening of prudential regulation strengthens the resilience of the traditional banking sector, the flipside is that it does so by limiting the profitability of the traditional banking sector. The upward trajectory of forcing the traditional banking sector to strengthen capital and liquidity has the paradoxical effect of negative trajectories for banks' profitability in the EU. A study by Roland Berger depicted in *Figure 3* below demonstrates that profitability of EU banks, as compared to banks in the United States of America ("USA"), has decreased by 9% between 2009-2015. This drop-in profitability poses a real challenge for European banks considering the low interest rates, economic growth and significantly, regulatory pressure and the associated costs.<sup>95</sup>



*Figure 3: Opposite Trajectories: Profitability of EU/USA Banks*  
Source: Roland Berger<sup>96</sup>

While there is currently no empirical evidence for a direct causal relationship between regulatory pressure and profitability, along with many other factors that have contributed to a decrease in profitability, such as the Eurozone crisis, this drop-in profitability does imply that regulatory pressure and the associated costs pose a real challenge for EU banks.<sup>97</sup> Sinking profitability in the tradi-

<sup>95</sup> This information was obtained from interviewee #1 during an interview at the London School of Economics in London (24 January, 2018). See also, T Quesnel, M Pfeiffer and D Johner, 'Implications of ongoing "Basel IV" debates' *Roland Berger* (2017) 1 at 4. See also, S Schneider, G Schrock, S Koch and R Schneider, "Basel "IV": What's next for banks?" (2017) *Global Risk Practice*; L Amorello, "Beyond the Horizon of Banking Regulation: What to Expect From Basel IV" (2016) 58 *Harvard International Law Journal* 21 at 37.

<sup>96</sup> Quesnel *et al* (n 95) 1 at 4.

<sup>97</sup> L Amorello (n 95) 21 at 37.

tional banking sector does constitute a significant incentive for market participants to migrate activities to the less regulated and more profitable shadow banking sector.<sup>98</sup>

### 3.4 Regulatory Arbitrage

The third inter-related aspect regarding the rise of the EU shadow banking sector is regulatory arbitrage. Because the traditional banking sector is arguably in a 'regulatory straightjacket', consequently impeding profitability, it is unsurprising that there is incentive for market participants to circumvent the rules by exploiting regulatory arbitrage and migrate activities to the less regulated shadow banking sector.<sup>99</sup> Regulatory arbitrage can be defined as: the restructuring of financial activities to circumvent burdensome regulation. The central issue is that as regulation within the traditional banking sector tightens, by default the shadow banking sector will continuously gain traction.

*"Ironically 'nostalgia' for a simpler financial system centred on deposit taking banks actually produces regulation that drives more activity into shadow banking".<sup>100</sup>*

Regulation has therefore not only generally induced the rise of the shadow banking sector through regulatory arbitrage, but also the more stringent leverage framework and liquidity requirements under Basel III can be said to stimulate the traditional banking sector to either "increase leverage or circumvent their regulatory capital or liquidity requirements through" transactions conducted within the shadow banking sector.<sup>101</sup> This argument becomes more persuasive when it is observed that it takes roughly:

*"two hours to assemble a team of finance geeks and lawyers to devise a product or transaction that will bypass any new rule or regulation coming our way".<sup>102</sup>*

<sup>98</sup> R Davies (n 5) 70 at 70-72.

<sup>99</sup> G Buchak, G Matvos, T Pskorski and A Seru, "Fintech, regulatory arbitrage, and the rise of shadow banks" (2018) 130 (3) *Journal of Financial Economics* 453. See also, D Nuoy (Chair of the Supervisory Board of the ECB) "Gaming the rules or ruling the game? – How to deal with regulatory arbitrage" (15 September, 2017), available at: <https://www.banking-supervision.europa.eu/press/speeches/date/2017/html/ssm.sp170915.en.html>.

<sup>100</sup> 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 10.

<sup>101</sup> S Wei, *Shadow Banking in China: Risk, Regulation and Policy* (2016) 35. See also, J C Coates IV, "Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications" (2015) 124 *Yale Law Journal* 882 at 970 (footnote 324).

<sup>102</sup> Nesvetailova (n 43) 1 at 6-7. See also, R Spence, "Bridging the Gaps in EU Financial Regulation: A shadow banking perspective" (2018) *Leiden Law Blog*, available at: <https://leidenlawblog.nl/articles/bridging-the-gaps-in-eu-financial-regulation-a-shadow-banking-perspective>.

According to Charles Goodhart, the migration of activities to the less regulated shadow banking sector not only ensures that the expensive and burdensome regulation is mitigated, but it also adds weight as to why so many people firmly believe that regulation of the traditional banking sector is self-defeating, because there will always be a way to circumvent the rules.<sup>103</sup> The reason regulation of the traditional banking sector is self-defeating is due to the so-called ‘boundary problem’. The boundary problem holds that as one level of the traditional banking sector becomes regulated, or starts the process of regulation, there is incentive for financial market actors to scramble over the boundary into the less stringently regulated shadow banking sector to conduct business. Due to a continual drive to maximise profits, the boundary problem then becomes perpetual because as regulation imposes new costs and burdens, it will consequently facilitate regulatory arbitrage.<sup>104</sup>

Additionally, not only is there an economic significance correlated with regulatory arbitrage, there is also geographical significance. For example, low-tax or no-tax jurisdictions are regularly exploited to take advantage of: tax, regulatory, legal and administrative features inherent in those jurisdictions.<sup>105</sup> As such, the shadow banking sector has a global reach because activities span across geographical jurisdictions, which results in cross border implications.<sup>106</sup> Different regulatory and legal frameworks across various jurisdictions potentially provide a safe haven for the shadow banking sector to arbitrage the rules because of the difficulty in monitoring or curbing the activities that spread across the globe.<sup>107</sup>

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103 C Goodhart, “The Emerging New Architecture of Financial Regulation” (2011) *Centre for Financial Studies Working Paper* 1 at 25. See also, C Goodhart, *The Central Bank and the Financial System* (1995) 337; P Drysdale, *Reform and Recovery in East Asia* (2003) 40; L Baxter, “Baxter Discusses Financial Regulation in Europe, Asia” (12 October, 2012) *Duke Law News*, available at: <https://law.duke.edu/news/baxter-discusses-financial-regulation-europe-asia/>; A G Haldane, “Constraining Discretion in Bank Regulation” (9 April, 2013) *Bank of England* 1 at 14.

104 C Goodhart, *Too Important to Fail – Too Important to Ignore* (Parliament Publications, House of Commons 2010) 11.

105 For example, the Cayman Islands, Jersey, Ireland, Luxembourg and the Netherlands. On this see J Deacon, *Global Securitisation and CDOs* (Wiley 2004) 46.

106 R Gandhi (n 41) 1 at 4-5. See also, P R. Wood, *Project Finance, Securitisation and Subordinated Debt* (2007) 6-014-6-017.

107 The issues surrounding regulatory arbitrage outlined above were corroborated from interviewee #1 during an interview at the London School of Economics in London (24 January, 2018). See also, E Lee, ‘Shadow Banking System in China After the Global Financial Crisis’ (2015) 024 *University of Hong Kong Faculty of Law Research Paper* 1 at 1-2, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2631343](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2631343).

### 3.5 Financial Innovation

*“Shadow banking products are far from being unutilised; their novelty and adaptability to financial institutions’ needs are part of the reason why shadow banking has grown popular, at an unprecedented speed and to a gargantuan size”.*<sup>108</sup>

The final line of reasoning in relation to the rise of the shadow banking sector is financial innovation. While many commentators view regulatory arbitrage as a negative, regulatory arbitrage can also be viewed positively as it facilitates financial innovation by creating new ways to conduct business. The shadow banking sector is a case in point given that there is now a genuine economic demand for services conducted in that sector.

Prior to the Global Financial Crisis, securitisation and collateralised debt obligations were the innovative, novel and adaptable products. Now, amongst other things, collateral transactions, namely repos, securities lending and specific derivatives transactions are mixed into the fold.<sup>109</sup> These activities are all short-term collateralised transactions that constitute part of the secured segment of the money-markets. Collateral transactions are critical to the efficient performance of the shadow banking sector because they provide an alternative and cheaper source of funding to that offered by the traditional banking sector. As such, many entities, activities and transactions operating in the shadow banking sector now have valid and valuable economic and financial market functions.

Concomitantly, competition from independent financial services providers has arguably allowed the shadow banking sector to flourish. For instance, specialised credit providers often have superior knowledge in a specific area and economies of scale, which is made possible by specialising in distinct credit intermediation activities – this specialisation opens the possibility for potential gains.<sup>110</sup> Consequently, the shadow banking sector comprises specialists who have exploited niche markets that have long been neglected by the traditional banking sector. As such, because of this niche speciality, namely specialised lending *vis-à-vis* collateral transactions, the shadow banking sector has a far superior market edge.<sup>111</sup> The shadow banking sector is indeed a hotbed for innovation. It is unstifled by prudential rules and the growth of the shadow

<sup>108</sup> Lee (n 107) 1 at 13.

<sup>109</sup> S Claessens, L Ratnovski and M Singh, “Shadow Banking: Economics and Policy” (4 December, 2012) *IMF Staff Discussion Note* 1 at 14-17.

<sup>110</sup> M Stanley, “The Paradox of Shadow Banking” (2015) *Roosevelt Institute*, available at: [http://rooseveltinstitute.org/wp-content/uploads/2015/11/Stanley\\_Shadow\\_Banking.pdf](http://rooseveltinstitute.org/wp-content/uploads/2015/11/Stanley_Shadow_Banking.pdf).

<sup>111</sup> M Marriage, “Intermediate Capital Group Dismisses shadow-bank label” (9 August, 2015) *Financial Times*, available at: <https://next.ft.com/content/6cd44506-3c28-11e5-bbd1-b37bc06f590c>. See also, P Jenkins and S Fleming, “Into the Shadows: Taking Another Path” (16 June, 2014) *Financial Times*, available at: <https://next.ft.com/content/8016fca4-e106-11e3-875f-00144feabdc0>; Stanley (n 110).



banking sector may be understood as one consequence of evolving legal and regulatory structures stemming from the traditional banking sector.<sup>112</sup>

#### 4 THE GLOBAL FINANCIAL CRISIS

The Global Financial Crisis was the result of a combination of factors and the shadow banking sector was at the very epicentre.<sup>113</sup> It is said that regulators failed to govern the financial system by “falling asleep at the wheel” and neglected to exercise proper supervision and oversight of financial institutions.<sup>114</sup> Excessive leverage was embedded off-balance sheet and there was severe liquidity and maturity mismatches during the Global Financial Crisis. Lehman Brothers in particular misled investors about their true position by utilising the shadow banking sector as an “accounting gimmick” through the so-called ‘Repo 105’ transactions.<sup>115</sup>

##### 4.1 Lehman Brothers

At the heart of the Lehman Brothers bankruptcy, the Valukas Report unearthed the fact that Lehman Brothers engaged in “actionable balance sheet manipulation” by way of Repo 105.<sup>116</sup> Repo 105 transactions were used by Lehman

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112 M Singh, *Collateral and financial Plumbing* (2016) 35-39.

113 H L Wilensky, *American Political Economy in Global Perspective* (2012) 142. See also, Davies (n 4) at 70; B Moro and V A Beker, *Modern Financial Crises: Argentina, United States and Europe* (2015) 65.

114 Paul Krugman has argued that the lack of controls during the GFC amount to “malign neglect” – see P Krugman, *The Return of Depression Economics and the Crisis of 2008* (2009) 162-163.

115 C Hines, J Kreuze and S Langsam, “An analysis of Lehman Brothers bankruptcy and Repo 105 transactions” (2011) 26 (1) *AJB* 40. See also, report of A R Valukas, *In re Lehman Brothers Holdings INC., et al.*, (11 March, 2010) United States Bankruptcy Court Southern District of New York 1 at 743.

116 Chapter 11 Case No. 08-13555 (JMP) *In re Lehman Brothers Holdings INC., et al.*, Report of Anton R Valukas, Examiner (11 March, 2010) Volume 1 at 3 and 18 (footnotes 63 and 64). See also, Haentjens and de Gioia-Carabellese (n 22) 244; J Baer and H Sender, “Valukas report finds few heroes” (12 March, 2010), available at: <https://www.ft.com/content/09d2f184-2d6d-11df-a262-00144feabdc0>. It should also be noted that while this section refers to “Repo 105”, Lehman Brothers also engaged in “Repo 108”. Lehman Brothers treated both Repo 105 and Repo 108 transactions identically under the same internal accounting policy and according to Anton Valukas, both transactions shared the “same anatomy”. They differed only in that Repo 105 predominantly utilised fixed income securities with an overcollateralisation of 5% while Repo 108 transactions predominantly used equity securities with an overcollateralisation of 8%. In addition, the respective 5% and 8% ‘haircuts’ were necessary for Lehman Brothers to account for the Repo 105 transaction as a ‘sale’ under US Financial Accounting Standards No.140 (“SFAS 140”). On this, see Chapter 11 Case No. 08-13555 (JMP) *In re Lehman Brothers Holdings INC., et al.*, Report of Anton R Valukas,

Brothers to temporarily remove securities inventory from its balance sheet, usually for a period of seven to ten days, in order to create a materially misleading picture – for financial reporting purposes – of the firm’s financial condition. Lehman Brothers did, indeed, regularly increase its use of Repo 105 transactions in the days prior to reporting periods as a way to reduce its “publicly reported net leverage and net balance sheet”.<sup>117</sup> In particular, during the first and second quarters of 2008 it managed to sell approximately USD \$50bn worth of assets from the firm’s balance sheet.<sup>118</sup> Lehman Brothers used the cash raised from Repo 105 to pay down other liabilities, thereby reducing both the total liabilities and total assets reported on its balance sheet while also lowering its leverage ratio.<sup>119</sup>

The fact that repo transactions subject to New York law are often treated as a pledge, meaning that Lehman Brothers would be unable to remove assets from its balance sheet, makes one wonder: how did New York based Lehman Brothers manage to manipulate its balance sheet? The solution was to ‘recharacterise’ the Repo 105 transaction from a ‘pledge’ to a ‘true sale’. However, it could not do this in the USA because no USA law firm would provide a positive legal opinion permitting the true sale accounting treatment under New York law. Yet under English law, repo transactions are classed as a ‘true sale’ and provided that the “two parties intend to exchange assets for cash, and then later the party receiving the assets decides to hand back equivalent assets (such as securities of the same series and nominal value) rather than the very assets that were originally delivered”, then the transaction can be categorised as a true sale (under English law) and in conformity with USA accounting standards.<sup>120</sup>

As such, Lehman Brothers conducted its Repo 105 programme under the aegis of a legal opinion from Linklaters in London and approved by Lehman

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Examiner (March 11, 2010) Volume 3 at 732 (footnote 2847) and 755 (footnote 2922). See also, P C Harding and C A Johnson, *A Practical Guide to Using Repo Master Agreements* (2017) 5.

117 Chapter 11 Case No. 08-13555 (JMP) In re *Lehman Brothers Holdings INC., et al.*, Report of Anton R Valukas, Examiner (March 11, 2010) Volume 3 at 732-733 and 746.

118 In the first quarter of 2008, Lehman Brothers managed to reduce its balance sheet by USD 49.1bn and USD 50.38bn in the second quarter of 2008. On this see, Chapter 11 Case No. 08-13555 (JMP) In re *Lehman Brothers Holdings INC., et al.*, Report of Anton R Valukas, Examiner (March 11, 2010) Volume 3 at 739.

119 Chapter 11 Case No. 08-13555 (JMP) In re *Lehman Brothers Holdings INC., et al.*, Report of Anton R Valukas, Examiner (March 11, 2010) Volume 3 at 733.

120 US Financial Accounting Standards No. 140.98 as per Chapter 11 Case No. 08-13555 (JMP) In re *Lehman Brothers Holdings INC., et al.*, Report of Anton R Valukas, Examiner (March 11, 2010) Volume 3 at 755 and 793. See also, M J Merced and J Werdigier, “The Origins of Lehman’s ‘Repo 105’” (March 12, 2010) *The New York Times*; P C Harding and C A Johnson, *A Practical Guide to Using Repo Master Agreements* (2017) 5.

Brothers' independent auditor Ernst & Young.<sup>121</sup> Accordingly, if USA based Lehman Brothers entities wished to engage in a Repo 105 transaction, they transferred their securities to Lehman Brothers International Europe in London, in order for Lehman Brothers International Europe to conduct the transaction on their behalf. This meant that Repo 105 transactions could be treated as outright sales under English law, thus allowing assets to drop off their balance sheet before the quarter end financial reporting statements were due.<sup>122</sup> Repo 105 transactions were entered into between Lehman Brothers International Europe and "other financial institutions" in exchange for "substantial fees" – once the quarter end financial statements were published, the transaction would be immediately unwound to be repeated at the end of the next quarter and so on.<sup>123</sup>

Yet financial markets are inherently unpredictable and given its precarious financial position, Lehman Brothers did encounter several problems, which resulted in its collapse. According to Gary Gorton, Lehman Brothers was ultimately allowed to fail because it "did not have the collateral to justify a loan from the Fed of sufficient size to save them".<sup>124</sup> The fact that Lehman Brothers filed for bankruptcy shortly after the Repo 105 saga, demonstrated that a significantly important financial institution was being allowed to fail by the government, despite other equally troubled and significant institutions being deemed 'too big to fail'.<sup>125</sup> It was the abuse and manipulation of Repo 105 transactions and the like that led the financial system into broader systemic threat and ultimately a full blown Global Financial Crisis, which undermined investor confidence leading to consequent panic runs and taxpayer bailouts of costs exceeding € 1.5tn in the EU alone.<sup>126</sup>

## 4.2 Beyond Lehman Brothers

The Global Financial Crisis, which started as a monetary and interbank market liquidity seizure, quickly morphed into a global economic catastrophe, argued

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121 Chapter 11 Case No. 08-13555 (JMP) In re *Lehman Brothers Holdings INC., et al.*, Report of Anton R Valukas, Examiner (March 11, 2010) Volume 3 at 764. See also, J Baer and H Sender, "Valukas report finds few heroes" (12 March, 2010), available at: <https://www.ft.com/content/09d2f184-2d6d-11df-a262-00144feabdc0>.

122 Harding and Johnson (n 116) 5.

123 C Hill and R W Painter, "Of the Confidential Fee as a Response to Lawyers" (2011) 1 *AM.U.Bus.L.Rev.* 42 at 48.

124 G Gorton, *Misunderstanding Financial Crises: Why We Don't See Them Coming* (2012) 148.

125 For example, Bear Stearns, The Royal Bank of Scotland, Barclays Bank, Merrill Lynch to name but a few.

126 B S Bernanke, "Causes of the Recent Financial and Economic Crisis" (2 September, 2010) *Board of Governors of the Federal Reserve System*, available at: <https://www.federalreserve.gov/newsevents/testimony/bernanke20100902a.htm>.

to be the worst since the Great Depression.<sup>127</sup> According to the International Monetary Fund, rapid growth in the supply of credit coupled with sustained asset prices led to an accumulation of risk within the financial markets.<sup>128</sup> A low interest rate environment underpinned by loosely accommodating monetary policies not only ensured that credit was relatively cheap; it also encouraged a search for yield that led investors to continually invest in riskier investments.<sup>129</sup>

The shadow banking sector in particular facilitated and satisfied investor demand by creating and developing instruments, such as collateralised debt obligations, which were supposed to offer high yields in a low-risk environment.<sup>130</sup> Instead, however, collateralised debt obligations that were backed by sub-prime mortgages turned out to be toxic securities that contributed and amplified the Global Financial Crisis.<sup>131</sup>

*“Non-bank financial institutions, most notably hedge funds but also pension and mutual funds and insurance companies... had causal primacy in the financial crisis. It was primarily these institutions that forced the accelerated rate of production of CDOs to a scale of sufficient proportions as to be able to cause the money markets to go into cardiac arrest”.*<sup>132</sup>

Investors, regulators, banks and credit ratings agencies misjudged the aggregate risks residing in the shadow banking sector’s securitised products.<sup>133</sup> Specifically, the credit rating agencies’ mispricing of risk gave rise to many investors entering into unrestrained risk taking.<sup>134</sup> The systemic importance of the rapid increase in correlation between the prices of different securitised products and prices on underlying collateral assets were not internalised by market parti-

127 P Lysandrou and A Nesvetailova, “The Shadow Banking System and the Financial Crisis” (2015) *Financialisation, Economy, Society and Sustainable Development Working Paper* 1 at 3. See also, Y Nersisyan and L Randall-Wray, “The Global Financial Crisis and The Shift to Shadow Banking” (2010) 587 *The Levy Economics Institute Working Paper* 1 at 3.

128 O Blanchard, J Caruana and R Moghadam, “Initial Lessons of the Crisis” (6 February, 2009) *International Monetary Fund*, available at: <https://www.imf.org/external/np/pp/eng/2009/020609.pdf>.

129 The Economist, “Six Years of Low Interest Rates in Search of Some Growth” (6 April, 2013), available at: <http://www.economist.com/news/briefing/21575773-central-banks-have-cushioned-developed-worlds-economy-difficult-period-they-have-yet>.

130 E P Stringham, *Private Governance: Creating Order in Economic and Social Life* (2015) 170-172.

131 D O Beltran, L Cordell and C P Thomas, “Asymmetric Information and the Death of ABS CDOs” (2013) 1075 *The Federal Reserve Board International Finance Discussion Papers*, available at: <https://www.federalreserve.gov/pubs/ifdp/2013/1075/ifdp1075.htm>.

132 Lysandrou and Nesvetailova (n 127) at 3.

133 Pozsar *et al* (n 4) at 3.

134 Technical Committee of the International Organization of Securities Commissions, “Mitigating Systemic Risk: A Role for Securities Regulators” (2011) 1 at 19, available at: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD347.pdf>.

cipants. This resulted in a low probability, negative tail event<sup>135</sup> in the shadow banking sector as housing prices fell across the USA and beyond.<sup>136</sup>

Models deployed by credit rating agencies relied on information and assumptions correlated to the underlying loan pools and their contractual elements.<sup>137</sup> Loan defaults, which were argued to have a low correlation, proved to be incorrect, especially in the case of subprime loans.<sup>138</sup> As a result, investors quickly realised that statistical models failed to predict the delinquency and default rates that materialised, which in turn ensured loss of confidence in the credit ratings system. Indeed, the complex features of the various structured financial instruments coupled with the opaque nature of the shadow banking sector created significant uncertainty within the financial system as investors were uncertain of the true value of their investments.<sup>139</sup>

Consequently, debt instruments that appeared safe in the past were instead fraught with both liquidity and price risk. Liquidity evaporated not only in markets related to subprime housing loans, but also in completely unrelated markets, such as asset-backed commercial paper markets, money market funds, repo markets, derivatives and securities lending. Such an outcome triggered a panic run as funding quickly became scarce, the price of collateral assets decreased, consequently leading to increased and unsustainable margin calls, which consequently had adverse effects on the real economy.<sup>140</sup>

### 4.3 The Need for Regulation

Financial regulation is in place to govern one of the most important systems in the economy – the financial system.<sup>141</sup> The primary purpose of financial regulation is not only to preserve financial stability and mitigate systemic risk,

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<sup>135</sup> A tail risk event identifies a class of investment outcomes that occur with very low probabilities but are accompanied by negative and very large losses, should or indeed when they materialise. See generally, N Barberis, “The Psychology of Tail Events: Progress and Challenges” (2013) 103 (3) *American Economic Review* 611 at 611-616. See also, A Greenspan, *The Map and the Territory: Risk, Human Nature, and the Future of Forecasting* (2013).

<sup>136</sup> Claessens *et al* (n 109) 1 at 13.

<sup>137</sup> J Coval, J Jurek and E Stafford, “Re-Examining the Role of Rating Agencies: Lessons from Structured Finance” (2008) 1 at 5. See also, I Hardie and D MacKenzie, “The Lemon-Squeezing Problem: Analytical and Computational Limitations in CDO Evaluation” (2014) *The University of Edinburgh* 1 at 6.

<sup>138</sup> R Dodd and P Mills, “Outbreak: U.S. Subprime Contagion” (2008) 45 (2) *International Monetary Fund Finance and Development*.

<sup>139</sup> O Canuto and S Ghosh, *Dealing with the Challenges of Macro Financial Linkages in Emerging Markets* (2013) 83. See also, G Tett and P J Davie, “Out of the Shadows” (17 December, 2007) *Financial Times*, available at: [http://www.ft.com/cms/s/0/7abee0b0-ac41-11dc-82f0-0000779fd2ac.html?ft\\_site=falcon&desktop=true#axzz4Dr7SrtVE](http://www.ft.com/cms/s/0/7abee0b0-ac41-11dc-82f0-0000779fd2ac.html?ft_site=falcon&desktop=true#axzz4Dr7SrtVE).

<sup>140</sup> See generally D Sanches, “Shadow Banking and the Crisis of 2007-08” (2014) Q2 *Federal Reserve Bank of Philadelphia Business Review* 7 at 7-13.

<sup>141</sup> Armour *et al* (n 9) 3.

but also to prevent market failures.<sup>142</sup> Financial regulation is therefore in place to determine the legal and regulatory framework best suited to maintaining the stability and efficiency of the financial system.<sup>143</sup>

Yet financial regulation itself is also susceptible to failure. The Global Financial Crisis, which exposed fundamental (and unidentified) weaknesses in the financial system, is a case in point. The Global Financial Crisis illustrated that when asset prices fall, margin levels increase and highly leveraged financial institutions are forced to deleverage, causing market participants to “rush to the exits” in advance of other credit providers motivated to do exactly the same thing.<sup>144</sup> US economist Paul Krugman has argued that because the “shadow banking sector expanded to rival or even surpass conventional banking in importance... Politicians and government officials should have realised that they were re-creating the kind of financial vulnerability that... [makes financial crises] possible – and they should have responded by extending regulations and the financial safety net to cover these new” shadow banking activities.<sup>145</sup> Unsurprisingly, a failure of financial regulation, which was largely outmanoeuvred by financial markets and institutions, is widely cited as “the core of what happened to cause” and proliferate the crisis.<sup>146</sup>

#### 4.3.1 Systemic risk and financial stability

*“Whenever credit, maturity transformation and leverage are supplied by entities not regulated as banks and without access to lender of last resort facilities, everyone is entitled to be concerned about risks in relation to financial stability”.*<sup>147</sup>

The mitigation of systemic risk and the preservation of financial stability are key concerns for the financial system – becoming increasingly important as a result of the Global Financial Crisis. Financial stability can be “defined as the ability of the financial system to facilitate economic processes, manage risk, and absorb shocks” and is therefore tantamount to preserving the bene-

<sup>142</sup> Systemic risk, financial stability and market failures will be explored in greater detail below.

<sup>143</sup> Armour *et al* (n 9) 51.

<sup>144</sup> H McVea, “Targeting hedge funds and ‘repo runs’”, in I H Y Chiu and I G MacNeil, *Research Handbook on Shadow Banking Legal and Regulatory Aspects* (2018) 177 at 195.

<sup>145</sup> Krugman (n 114) 162-163.

<sup>146</sup> Armour *et al* (n 9) 3.

<sup>147</sup> J Benjamin, G Morton and M Raffan, “The future of securities financing” (2013) 7 Law and Financial Markets Review 4 at 4. However, while there is no explicit “access to lender of last resort facilities” in the shadow banking sector, two important developments should be considered as outlined above in section 3.2.1.3. While the general consensus is that the shadow banking sector has no access to lender of last resort facilities, on the views outlined above, it could be implied that there is, actually, some form of last resort facility, albeit implied.

ficial aspects of that system.<sup>148</sup> Systemic risk, on the other hand, can be defined as an event “whose impact and transmission effects are wide and deep enough to severely impair, with high probability, the allocation of resources and risks throughout the financial system” and economy as a whole.<sup>149</sup>

#### 4.3.2 Market failures

Financial regulation is not just about preserving financial stability and mitigating systemic risk, it is also in place to correct market failures. Economists describe a market failure as: “the failure of markets to achieve economically efficient outcomes with which they are generally associated”.<sup>150</sup> For example, a market failure occurs when market participants act in what they believe to be rational self-interest without taking into consideration the wider implications of their actions. As a result, their actions may produce a less than optimal or economically inefficient outcome that adversely affects the broader financial system and economy as a whole.<sup>151</sup> There are several forms of market failures but for the purpose of this study, negative externalities will be discussed.<sup>152</sup>

##### 4.3.2.1 Negative externalities

From an economics perspective, the procyclical nature of margin in a collateral transaction results in a market failure in the form of a negative externality.<sup>153</sup> A negative externality occurs when an economic event, such as the Global Financial Crisis, imposes a negative effect on an unrelated third party. In other words, a negative externality occurs when the social costs exceed the private costs.<sup>154</sup> For instance, the losses associated with a run on the shadow banking sector rarely “lie where they fall”.<sup>155</sup> In good times when market participants loosen credit terms and set *ex-ante* margin levels, more often than not they do not take into account the expansionary impact of their actions on the broader economy. Similarly, as the cycle turns, market participants do not take into account the *ex-post* contractionary impact of abruptly tightening credit

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148 D Heremans and A Paces, “Regulation of banking and financial markets” in *Regulation and Economics* (2012) R J Van Den Bergh and A M Paces (eds) 558 at 571. See also, A G Balmer, *Regulating Financial Derivatives: Clearing and Central Counterparties* (2018) 5.

149 Group of Ten, “Report on Consolidation in the Financial Sector” (January, 2001) 1 at 125-127, available at: <https://www.bis.org/publ/gten05.pdf>. See also, A G Balmer, *Regulating Financial Derivatives: Clearing and Central Counterparties* (2018) 6-7.

150 Armour *et al* (n 9) 51-52.

151 *Ibid.*

152 Other forms of market failure include: imperfect competition, public goods and biases in individual decision making.

153 The term ‘procyclicality’ will be discussed in greater detail in subsequent chapters. See also generally, D Longworth, “Warding Off Financial Market Failure: How to Avoid Squeezed Margins and Bad Haircuts” (2010) 135 *C.D. Howe Institute Backgrounder* 1.

154 Armour *et al* (n 9) 57-59.

155 McVea (n 144) 177 at 181.

terms and rising margins on the broader economy.<sup>156</sup> In essence, the collective actions of what is reasonable behaviour at the market participant level allow for the materialisation of bad outcomes for the financial system and economy as a whole.<sup>157</sup>

A tangible example of a negative externality is the cost imposed on society, such as unemployment, poverty, social welfare and potential death. The impact of those losses associated with a run on the shadow banking sector are rarely internalised by market participants as the social consequences can be (and often are) devastating.<sup>158</sup> While everyone is affected by a crisis in one way or another, the adverse social consequences can (and do) transform the lives of many families and individuals beyond imagination. Financial crises, therefore, tend to come at a great cost to society at large.<sup>159</sup>

*"The woman was from Patmos. Her husband had lost his job and came back to the island to be with their two children and find work. After he failed and she fell ill with cancer, they ran out of money. The bank seized their house; they could not afford the electricity bill. She was ashamed... she needed help".<sup>160</sup>*

## 5 CONCLUSION

To conclude, the EU shadow banking sector "operates within the legal perimeter, yet outside the confines of prudential" regulation.<sup>161</sup> In this regard, the shadow banking sector remains subject to less stringent regulation. Thrown into the shadow banking 'bucket' are a number of divergent entities, activities and transactions. Such a broad outlook, coupled with the 'pejorative' shadow banking title, makes it very difficult to effectively define shadow banking. Despite various attempts to replace the original title, the term 'shadow banking', which is now arguably ingrained into the financial system, continues to be used. In terms of defining shadow banking, a broad approach is inadequate;

<sup>156</sup> Longworth (n 153) 1 at 4-5.

<sup>157</sup> Committee on the Global Financial System, "The role of margin requirements and haircuts in procyclicality" (2010) 36 CGFS Papers 1 at 11.

<sup>158</sup> McVea (n 144) 177 at 181.

<sup>159</sup> I Otker-Robe and A M Podpiera, "The Social Impact of Financial Crises: Evidence from the Global Financial Crisis" (2013) 6703 Policy Research Working Paper.

<sup>160</sup> The Economist, "The euro and Greece – Postcard from the edge" (11 August, 2012), available at: <http://www.economist.com/node/21560312>. Another example is stated in Otker-Robe and Podpiera (n 159) 1 at 3 where it is noted that: "When financial institutions fail to manage the risks they retain, they can create severe financial crises with devastating social and economic effects, especially for the world's most vulnerable people. Crises can hit hard the weakest members of society, particularly the poor, elderly, young, and women, who are not well-equipped to cope with the consequences of rising prices, eroding savings and asset values, loss of jobs, and reduction in public services, such as social welfare, health care, and education".

<sup>161</sup> Spence (n 16).



while useful for monitoring and surveillance purposes, it is not suitable for a workable definition. Instead, a narrow definition that is constructed in relation to the purpose for which shadow banking is used, particularly via collateral transactions, is far more appropriate.

Shadow banking is a sector that is functionally equivalent to the traditional banking sector. The shadow banking sector has therefore risen in prominence and there are numerous reasons for this. In particular, the shadow banking sector has risen in parallel to the traditional banking sector primarily due to the introduction of strict prudential regulation, such as rules under the Basel Accords. Incoming prudential rules have arguably caused the profitability of the traditional banking sector to be negatively impacted, which has resulted in the exploitation of regulatory arbitrage thereby facilitating financial innovation.

At the epicentre of the Global Financial Crisis lay collateral transactions conducted in the shadow banking sector, which exposed catastrophic consequences – not only economically, but also socially. It is a crisis that has affected many people in one way or another. Given the central role collateral transactions played in the crisis, it is important to ensure that these events do not re-appear, albeit under a different guise. This argument becomes particularly acute when collateral and margin, which are central components of collateral transactions within the shadow banking sector, have become key drivers for financial instability in recent times. There are therefore concerns that without regulatory intervention, collateral (and the reciprocal ‘margin’) could be central to the next financial crisis, if, or indeed when, it arrives.<sup>162</sup>

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<sup>162</sup> European Systemic Risk Board, “Liquidity risks arising from margin calls” (June 2020) 1 at 2-4, available at: [https://www.esrb.europa.eu/pub/pdf/reports/esrb.report200608\\_on\\_Liquidity\\_risks\\_arising\\_from\\_margin\\_calls\\_3~08542993cf.en.pdf](https://www.esrb.europa.eu/pub/pdf/reports/esrb.report200608_on_Liquidity_risks_arising_from_margin_calls_3~08542993cf.en.pdf). See also, Bank for International Settlements, “Containment Measures: Policy Interventions” (June, 2020) *Annual Economic Report* 1 at 44, available at: <https://www.bis.org/publ/arpdf/ar2020e.pdf>.