

1. Introduction

To ask today's regulators to save us from tomorrow's crisis using yesterday's toolbox is to ask a border collie to catch a Frisbee by first applying Newton's Law of Gravity.¹ (Andrew G Haldane)

The current regulatory direction, which is prevalent in every aspect of financial regulation, is a push towards a more stringent and overreaching regulation. Regulators no longer direct their powers to certain institutions or solely to national interests by limiting their powers to one specific area of financial regulation or even just one country. The current regulation is pushing the regulatory boundaries of countries by promoting very strong extraterritorial application to a protectionist level by also regulating market access and third countries, while continuously regulating new areas that were not previously regulated. Yet why is this necessary? Every new regulation which is drafted finds its origin in a financial crisis or some other scandal. Most of the new regulation finds its origin in the 2007/2008 financial crisis. Despite the fact that 10 years have passed, we still are not seeing the 'lessons of the crisis' being implemented effectively around the world. Derivatives were blamed for the crisis, yet the implementation of the regulation to harness the derivatives market is still ongoing and new regulation continues to be drafted. Is this our way of appeasing tax-payers, by telling them that, with the right regulation, they will be entirely protected from the private markets, from the banks; by telling them that their savings are safe, that they can invest without any risks, and that their tax money will never have to be used again to bail out a failing financial institution or service provider?

The author is unable to cover all the regulatory topics that have been rewritten and introduced since the financial crisis. As such, the focus lies on one specific topic: the revolution in the derivatives market by mandating clearing for over-the-counter derivatives. Based on the analysis of the objectives of international organisations and ongoing regulatory implementation of new rules, the reader will be provided with an in

¹ Andrew G Haldane and Vasileios Madouros, 'The Dog and the Frisbee' (Federal Reserve Bank of Kansas City's 366th Economic Policy Symposium 'The Changing Policy Landscape', Jackson Hole WY, 31 August 2012), 152.

depth analysis of this new regulation. The book will show whether these new rules have had an impact on the derivatives market, and if so, what it is. The final decision regarding whether or not the regulation has achieved its objective of stopping tax contributions from preventing adverse effects on systemic risk is left up to the reader.

To most people, derivatives are an obscure financial instrument that they neither understand nor wish to understand because economists and Wall Street bankers have made them appear more complicated than they are. At the very least, derivatives are known as the cause of the financial crisis of 2007–2009 that brought Wall Street to its knees while simultaneously filling the pockets of a select few. Newspaper articles and the Hollywood blockbuster film, *The Big Short* – starring photogenic A-listers and based on Michael Lewis’s book – continuously reaffirm the message: derivatives are bad! Yet can something that has been around for centuries, representing a multi-trillion-dollar industry, be solely bad?

Derivatives, simplified, are a bet. They are agreements made between two parties stating that one will pay the other a certain amount of money depending on the outcome of a future event. Since common sense teaches us that there is ever only one winner to a bet, derivatives have become the source of great controversy over the last 30 years owing to their social and economic impact.

In 2002, Warren Buffett called derivatives ‘financial weapons of mass destruction’,² and he was proven right in this regard. Derivatives permit risk to be shifted around the market with the objective of reducing systemic risk. Considering the market, prices may rise or fall depending on external factors beyond the reach of the individual, such as food shortages caused by drought or floods. To protect against sudden price increases, derivatives can be used to fix a future price, thus shielding oneself from such price increases. Here, the derivative contract – once again simplified as a bet – takes on an insurance form and reduces the risk for the buyer. Betting not only protects against risk; somewhat counterintuitively, it is more beneficial to attempt to earn a profit by predicting future prices and entering into a speculative bet. The speculative element of derivatives is what makes them a threat to financial stability and social welfare, as speculation does not protect risk-averse

² Berkshire Hathaway, ‘2002 Annual Report Berkshire Hathaway Inc.’ (2003), 15.

market participants from future risks, but instead creates risks to which they would not have otherwise been exposed.³

As long as derivatives are used to hedge an existing risk, they contribute to social welfare by reducing risk. When used to speculate, risks which previously did not exist are created for individuals and the financial system, thereby decreasing social welfare and financial stability. At the end of a bet, wealth is exchanged and one party is determined to be wrong and loses money. Financial risk is determined by the exchange of wealth. Considering that the global size of the derivatives market reached USD 670 trillion in 2008, its potential financial risk to the overall economy becomes apparent.⁴ The global distribution and usage of derivatives by financial firms⁵ and governments, hedging risks from borrowed assets, make derivatives systemically relevant, as any disturbance resulting from or through the actions of any actor in this market can lead to instability in the market and therefore undermine its financial stability.⁶

The past eight years have witnessed the most significant public policy debates surrounding the regulation of this financial tool as regulators and international standard-setters have attempted to harness and tame derivatives. However, their regulation is not new and this study will show that derivatives once before were regulated in the United States. This was in 1993. Earlier regulation had banned purely speculative derivatives trades, particularly off-exchange trading in the bilateral markets (so-called over-the-counter, or OTC derivatives), so why is re-regulating a certain market area so important and controversial? The reason is 'mandatory clearing' of certain derivatives contracts. Mandatory clearing requires a private organisation, the central counterparty (CCP), to take on public policy objectives and guarantee each derivative contract it clears. Considering that in 2008 the global OTC derivatives market had a notional value of USD 670 trillion, the core question becomes which private organisation – or government – could guarantee such a risk position?

³ Lynn A Stout, 'Legal Origin of the 2008 Financial Crisis' (2011) 1 *Harvard Business Law Review* 1, 9–10.

⁴ *Ibid* 24.

⁵ Such as hedge funds, pension funds, mutual funds, investment banks and proprietary trading divisions run by commercial banks and insurance companies. See Lynn A Stout, 'Legal Origin of the 2008 Financial Crisis' (2011) 1 *Harvard Business Law Review* 1, 25.

⁶ Garry J Schinasi, 'Defining Financial Stability' (October 2004) IMF Working Paper 04, 6; Lynn A Stout, 'Legal Origin of the 2008 Financial Crisis' (2011) 1 *Harvard Business Law Review* 1, 25.

This question motivated the writing of this book. The study will cover the following topics. First, the author will identify what derivatives are and what they are used for. Then, central clearing is analysed from a modern and contemporary view, considering which tools CCPs were given to manage their risk exposure and ability to deal with a default, if they need to guarantee a derivatives contract. After establishing the significance of derivatives and clearing, the study then moves on to the legal regulation thereof. Beginning with an historic view of how derivatives were originally regulated, their deregulation – and the effects thereof – are traced. Subsequently, the post-crisis response by international standard setters is summarised. Based on an understanding of the global incentives and pressures, a comparative analysis of the regulations proposed in response to the crisis in the European Union and the United States is undertaken.

This ambitious regulatory project, pursued with great frenzy at first, has turned into what can only be described as an unsuccessful launch. While the United States created an extensive regulatory framework for derivatives in 2010, the European Union has yet to enact legislation to comply with half of the G20 commitments intended as part of the derivatives reform. Additionally, the United States and the European Union, representing the two most influential derivatives marketplaces, have each proven themselves incapable of reaching an agreement on the other's regulation, thus leading to a fragmented market and a politically motivated turf war.

The critical regulatory analysis shows that CCPs ultimately are becoming too important to fail owing to mandatory clearing. Thus, the reform as currently pursued is the result of a misconception of CCPs' abilities to eliminate systemic risk. This finding is followed by a novel suggestion to deal with the CCPs' exposure to derivatives risk: the creation of a global CCP bail-out fund. Such a global CCP bail-out fund, together with stringent risk-management practices for CCPs, can restrict government involvement (particularly taxpayer funds), which was one of the core reasons for mandatory clearing's introduction in the first place. Such a novel approach gives today's regulators new tools to address tomorrow's crises, instead of the current approach of turning two blind eyes to the super-systemic monster that CCPs have become and simply praying that they will manage tomorrow's risks using the same tools that failed yesterday.

Because counterparties over-expanded their risk for profits in the years leading up to the financial crisis of 2007–2009, regulatory reform became necessary. The complexity of derivatives and the cross-jurisdictional interconnectedness of derivatives markets have complicated the reform

process, which is why new regulation is only recently being phased in across jurisdictions. This ongoing process of legislation and application makes this book very topical and lets the author contribute to the ongoing debate in an area which surprisingly few authors have contributed to, regarding how CCPs should be regulated to achieve the policy objectives of financial stability.

1.1 FINANCIAL STABILITY

Financial stability is defined as ‘a condition in which the financial system – intermediaries, markets and market infrastructures – can withstand shocks without major disruption in financial intermediation and in the general supply of financial services’.⁷ If financial stability is disrupted by shocks, then financial infrastructures and the financial system can also be disrupted. The actions of private actors using derivatives led to disturbances in the financial infrastructure, culminating in the global financial crisis of 2007–2009, which eroded household wealth by USD 11 trillion.⁸ US taxpayers were required to bail out the American insurance company AIG for USD 180 billion, in addition to the USD 700 billion required for the Troubled Asset Relief Program and other short-term credit extended to banks and hedge funds in excess of USD 3.3 trillion in order to prevent the financial system from collapsing after the financial institutions refused to lend to each other.⁹ To prevent this from happening again, regulatory reforms were drawn up. Yet despite these, the fundamental question remains as to whether derivatives have truly been reformed from ‘financial weapons of mass destruction’ into decorative confetti of the financial system, posing little risk to financial stability.¹⁰

Because derivatives are at a crossroads between finance, economics, mathematics, computer science and law, tackling this topic is highly complex. This book is limited to a legal analysis of the problem but

⁷ See European Central Bank, ‘Financial Stability and Macroprudential Policy’ (3 September 2017) <<https://www.ecb.europa.eu/ecb/tasks/stability/html/index.en.html>> accessed 3 September 2017.

⁸ The Financial Crisis Inquiry Commission, ‘The Financial Crisis Inquiry Report’ (January 2011), xv.

⁹ Lynn A Stout, ‘Legal Origin of the 2008 Financial Crisis’ (2011) 1 Harvard Business Law Review 1, 2–3 and 28–9.

¹⁰ See John Dizard, ‘The next Financial Crisis: I Told You so, and It Wasn’t My Fault’, *Financial Times* (London, 1 May 2015) <<http://www.ft.com/intl/cms/s/0/b40fb70e-ffa-11e4-bb88-00144feab7de.html#axzz3zfv1zo5c>> accessed 3 September 2017. Dizard claims that CCPs will be the next AIG.

includes elements taken from finance and economics where it is necessary to improve topical understanding. In general, most authors focus on one specific problem of either derivatives or clearing regulation, which is why there is a gap in the literature considering the topic holistically. It is in this regard that this book sets itself apart from previous literature. The objective is to take the reader on a journey beginning with why derivatives are relevant to financial stability and ending with the measures that should be undertaken in order to ensure that they enhance financial stability, instead of posing a new risk thereto.

1.2 SYSTEMIC RISK AND MACRO-PRUDENTIAL POLICY

Systemic risk and macro-prudential both lack uniform definitions in financial market regulation.¹¹ The financial system relies upon a stable and sound functioning of the financial markets. Therefore, containing risk, which could cause system-wide disruptions, is necessary. The latest financial crisis displayed the effects of the absence of a holistic approach to financial regulation and supervision, presenting the need to link the individual supervision of banks with a broader oversight of the financial system.¹² A narrow consideration of individual institutions is referred to as micro-prudential oversight, while the broader, more holistic oversight of the financial system is macro-prudential oversight.¹³

A destabilisation of one or more institutions can spill over or cause contagion to other institutions and ultimately affect the financial system as a whole by causing systemic risk. The financial system is particularly at risk from becoming systemic because of the interconnected nature of interbank lending, derivatives and the payment and settlement system. The speed with which financial institutions trade with one another increases the chances of risk spreading from poorly monitored counterparty credit risk and liquidity shortages. A sudden default or liquidity shortage in a large bank could immediately affect all other institutions dealing with it.¹⁴ A second risk factor is the usage of debt instead of

¹¹ See Eilís Ferran and Kern Alexander, 'Can Soft Law Bodies Be Effective? Soft Systemic Risk Oversight Bodies and the Special Case of the European Systemic Risk Board' (June 2011) 36, 26–7 with further references.

¹² *Ibid* 3.

¹³ *Ibid*.

¹⁴ James Bullard, Christopher J Neely and David C Wheelock, 'Systemic Risk and the Financial Crisis: A Primer' (2009) 91 Federal Reserve of St Louis

equity to attain profits. This is referred to as leveraging. In good times, this permits large profits at little cost, but it increases exposure during a financial downturn, as was proven in the latest financial crisis.¹⁵ Lastly, financial firms tend to finance long-term illiquid positions with short-term debt. Such a maturity mismatch can be particularly detrimental in times of financial downturn if short-term debt is suddenly removed, e.g. by depositors withdrawing their deposits, effectively removing liquidity and potentially forcing the financial firm into bankruptcy.¹⁶

Loss of liquidity, bankruptcy and government intervention cause other financial market participants to lose confidence in individual firms. Thus, the interconnectedness of the financial market exacerbates contagion. Such sudden market shifts affecting the financial system as a whole are referred to as systemic risk. The Group of Ten defined systemic risk as follows:

Systemic financial risk is the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have significant adverse effects on the real economy. Systemic risk events can be sudden and unexpected, or the likelihood of their occurrence can build up through time in the absence of appropriate policy responses. The adverse real economic effects from systemic problems are generally seen as arising from disruptions to the payment system, to credit flows, and from the destruction of asset values. Two related assumptions underlie this definition. First, economic shocks may become systemic because of the existence of negative externalities associated with severe disruptions in the financial system. If there were no spillover effects, or negative externalities, there would be, arguably, no role for public policy. [...] Second, systemic financial events must be very likely to induce undesirable real effects, such as substantial reductions in output and employment, in the absence of appropriate policy responses. In this definition, a financial disruption that does not have a high probability of causing a significant disruption of real economic activity is not a systemic risk event.¹⁷

Review 403, 408–9; Lynn A Stout, ‘Legal Origin of the 2008 Financial Crisis’ (2011) 1 *Harvard Business Law Review* 1, 2–3.

¹⁵ James Bullard, Christopher J Neely and David C Wheelock, ‘Systemic Risk and the Financial Crisis: A Primer’ (2009) 91 *Federal Reserve of St Louis Review* 403, 409.

¹⁶ This happened to Bear Stearns in March of 2008 and Merrill Lynch in September 2008. See James Bullard, Christopher J Neely and David C Wheelock, ‘Systemic Risk and the Financial Crisis: A Primer’ (2009) 91 *Federal Reserve of St Louis Review* 403, 409; Lynn A Stout, ‘Legal Origin of the 2008 Financial Crisis’ (2011) 1 *Harvard Business Law Review* 1, 26.

¹⁷ G10, ‘Consolidation in the Financial Sector’ (January 2001), 126.

To counterbalance and pre-empt the negative externalities of systemic risk, macro-prudential policies are particularly important. Macro-prudential policy considers the financial system as a whole by adopting policies aimed at preventing risk build-up before it causes harm and containing it before it can spread to other institutions where it can cause systemic risk.¹⁸

In the regulatory and public debate following the financial crisis of 2007–2009, the focus shifted away from a micro-prudential to a macro-prudential approach. While the micro-prudential approach regulates at the firm level to remove risk, believing that this will reduce the overall market risk exposure, macro-prudential regulation considers the larger picture of the overall financial system to reduce market risk exposure in general.¹⁹ Such a macro-prudential application of rules directly affects how strongly individual firms are targeted by the regulation, as the rules have a tighter or more lenient effect depending on how systemically relevant the firm is.²⁰ The objective of macro-prudential regulation is to pre-emptively control risks and potential downfalls after an economic boom period, acting counter-cyclically.²¹ Therefore, the regulation to reduce systemic risk should primarily be aimed at making markets counter-cyclical by eliminating spill-over.²² Systemic risk itself is generally caused by asset bubbles caused by financial liberalisation or innovation and by the inability to properly assess how strongly an actor impacts macro-economic stability.²³ Ultimately, micro-prudential rules need to be combined with macro-prudential systemic governance to ensure the implementation of risk-management practices at the firm level and the coordination of global governance rules.²⁴ This combination of

¹⁸ European Central Bank, ‘Macroprudential Policy Strategy’ (3 September 2017) <<https://www.ecb.europa.eu/ecb/tasks/stability/strategy/html/index.en.html>> accessed 3 September 2017.

¹⁹ Kern Alexander and Steven L Schwarcz, ‘The Macroprudential Quandary: Unsystematic Efforts to Reform Financial Regulation’ in Ross P Buckley, Emiliios Avgouleas and Douglas Arner (eds), *Reconceptualising Global Finance and its Regulation* (Cambridge University Press 2016), 127.

²⁰ Ibid 128; Markus Brunnermeier and others, ‘The Fundamental Principles of Financial Regulation’ (June 2009) 11, xviii.

²¹ Ibid 11, xviii–xix.

²² Ibid 31–2.

²³ Ibid 3–4.

²⁴ Kern Alexander and Steven L Schwarcz, ‘The Macroprudential Quandary: Unsystematic Efforts to Reform Financial Regulation’ in Ross P Buckley, Emiliios Avgouleas and Douglas Arner (eds), *Reconceptualising Global Finance and its Regulation* (Cambridge University Press 2016), 129.

micro-prudential and macro-prudential rules can be found in the new regulation of OTC derivatives and central clearing. On the micro-prudential side, the regulation includes rules for the individual CCP, while on the macro-prudential side, the overall risk-management practices for CCP access, reporting and clearing are discussed.

To quote Tucker:

The macro-prudential policymaker will aim to have the financial system build resilience during a pronounced and stability-threatening boom. That will potentially dampen the boom itself, but crucially it will leave the financial system better equipped to weather the bust without collapsing. Thus, the amplitude of the credit cycle would be dampened, with deep recessions somewhat less likely. Like monetary policy, the macro-prudential policymaker acts counter-cyclically. And in both endeavours the central bank (or regulator) is explicitly seeking to act – is under a statutory duty to act – in the wider public interest, in the interests of the system as a whole.²⁵

The OTC derivatives market was implicated as a major source of systemic risk after the financial crisis.²⁶ Consequently, the necessity to tame OTC derivatives and mandate central clearing became one of the prevalent solutions to prevent a future financial crisis. Central counterparties were deemed as a panacea solution to mitigate risk in a way that can effectively prevent contagion in the derivatives market between counterparties. The intention is to institutionalise risk management through clearing, thereby reforming the derivatives market and preventing misjudgements of risk between counterparties. This new light shone on CCPs has caused heavy market reliance upon their proper functioning and trustworthiness. It could be argued that there is an over-reliance upon CCPs. Regulation aims to force derivatives users out of the direct counterparty-to-counterparty market (the OTC market) and into regulated exchanges by making them use a CCP to clear their contracts. Since clearing by a CCP was not generally used in OTC transactions in the pre-crisis era, the reliance upon CCPs to guarantee the functioning of risk calculations and financial stability is a recent development stemming from the regulatory reform. This new reliance on the ability of CCPs to calculate risk and mitigate it accordingly using the tools provided to them

²⁵ Paul Tucker, 'Are Clearing Houses the New Central Banks?' (Over-the-counter Derivatives Symposium, Chicago, 11 April 2014), 7.

²⁶ Rena S Miller and Kathleen Ann Ruane, 'Dodd-Frank Wall Street Reform and Consumer Protection Act: Title VII, Derivatives' (November 2012), Congressional Research Service R41298, ii.

from the regulators merits an in-depth analysis of both the purpose of a CCP and the tools allocated to it to achieve the regulatory objectives.

1.3 STRUCTURE

As regulators have instituted CCPs to tame the OTC derivatives of the last crisis, it is logical to ask whether this is indeed the expedient way or if it will culminate in another financial crisis. These questions, analysed from a macro-prudential perspective, will follow the reader from the introduction to the conclusion.

The macro-prudential perspective allows this book to engage in a legal policy debate with systemic risk management as its core topic. The discussion on how current regulatory reforms impact systemic risk will be directed particularly with regard to OTC derivatives. These derivatives are a phenomenon of the past 40 years and were not traditionally subject to the clearing mandate. Therefore, the focus is narrowed on the clearing of OTC derivatives by means of a CCP.

Chapter 2 of this book explains the basic nature of derivative contracts as a tool to manage risk. This tool can be used both to protect against existing risks by hedging and to generate new risks by speculating. Depending on how frequently derivatives are used in a similar context, they can become more or less standardised. Standardisation influences how they are traded, with standardised derivatives traded on exchanges and bespoke contracts traded bilaterally OTC. To complete the introduction to derivatives, the four core types of derivatives are then introduced. Finally, the involvement of credit derivatives, particularly CDS and the financial meltdown of AIG, are discussed.

Chapter 3 describes and defines clearing, particularly in light of the new importance clearing takes on in the post-crisis financial system. Clearing traditionally was only required for exchange-traded derivatives, but the regulatory reform has mandated clearing for OTC derivatives as well. The impact of clearing is demonstrated using the case of the default of Lehman Brothers Special Financing Inc. in 2008 and the ability of the central counterparty LCH.Clearnet to successfully wind down the USD 9 trillion exposure among its members. The case of Lehman Brothers shows the importance of solid risk-management practices for CCPs. How LCH.Clearnet managed to contain the outstanding positions is pertinent to systemic risk management. This chapter also gives an overview of the historical development of clearing and CCPs.

Chapter 4 first looks at the pre-crisis regulation of OTC derivatives in the European Union and the United States. While the financial innovation

of OTC derivatives certainly played a role in increasing risk stemming from derivatives, evidence will be provided to show that it was the complete deregulation of the OTC derivatives market, particularly by the Commodities Futures Modernization Act in 2000, which permitted the OTC market to reach a volume of USD 670 trillion. Following the crisis, international standard-setting bodies began promoting a harmonised global framework to reform the financial system, promote macro-prudential policy objectives and reduce systemic risk. A selection of such standards will be presented here. The global reform movement has made CCPs of systemic importance to financial stability. The default of a CCP would be felt by all conjoined financial institutions, making them systemically relevant and too big to fail.

Subsequently, Chapter 5 comparatively analyses the implementation of the derivatives reform in the European Union and the United States. The analysis keeps the objective of harmonising global reforms in mind, by providing insight into how the jurisdictions differ in their implementation, where they converge and how this affects collateral demands and financial stability. Considering CCPs as systemically important institutions and too interconnected to fail, it is striking that the regulations have not taken the potential default of a CCP into consideration. This omission makes the intent of the clearing mandate to prevent a future bail-out (as seen with AIG) dubious and raises the question of whether the systemic risk has been increased – instead of mitigated – by the reform.

The regulators have recognised that the reforms have all but been completed and have identified many areas for improvement. Chapter 6 looks at the intended reforms in the EU, based on the draft proposal for a recovery and resolution regime for CCPs, as well as a redraft of EMIR to close gaps and reduce the regulatory burden for certain counterparties, and information mismatches from trade reporting. This chapter also considers the implications from President Trump's executive order to assess financial market regulation in the United States and the European Union's reaction to the impending departure of Britain from the Union.

Chapter 7 analyses the impact of the reform on financial stability. The bilateral trading of OTC derivatives exposed its counterparties to counterparty default risk. While netting and novation decrease counterparty credit risk exposure in the financial market, they create new risks for the CCP who must guarantee each contract. To counterbalance these risks, the CCP collects collateral and sustains a default fund. Yet it will be shown that the CCP faces difficulties in pricing the risk from the OTC derivatives, as reliable data from previous transactions are missing, while the large banks as counterparties profit from excellent models and

experience in assessing exposure to their counterparties. This is particularly increased with new products such as credit default swaps mandated for clearing. CCPs have been turned into organisations that concentrate within, making them systemically relevant and prone to adverse selection and moral hazard, and ultimately too big to fail. However, regulation has failed to address this dilemma. The chapter closes with an original contribution to the discussion – the author proposes creating a CCP insurance fund. The objective of such a fund is to provide liquidity to insolvent systemically important CCPs while increasing the CCPs' own risk management, decreasing moral hazard and ensuring that the costs are supported by those who profit from clearing.

Chapter 8 concludes by combining and examining the lessons from the crisis and regulatory reform. It reaffirms the core findings and suggested amendments to ensure that the objectives of the reform are met and to reignite the discourse surrounding an improved financial market stability.