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Reforming OTC Markets: The Politics and Economics of Technical Fixes

Glenn Morgan*

Abstract

The paper focuses on financial transactions, addressing over-the-counter (OTC) trading of derivatives, which many analyses of the recent financial crisis argue produced significant problems. This area of financial activity grew massively from the 1990s, facilitated by legal developments in both the US and the UK that ruled out any state regulation of the market whilst at the same time affirming that the contracts made in the area were fully legally enforceable in US and UK law. At the same time, the private association, the International Swaps and Derivatives Association (ISDA), developed the Model Contract and international private soft law agreements that were generally respected by national legal systems and provided an agreed framework for OTC contracts. The paper explores how this lack of public regulation was legitimated, and the interests which lay behind this legitimation process. It then considers how the financial crisis and the role of OTC derivatives forced a re-opening of the issue of how these markets should be regulated. The paper explores the interplay between what may be described as technical fixes to regulatory problems, on the one hand, and the efforts of private and public actors to defend their interests by shaping the new markets in particular ways, on the other.

Keywords: regulation, over-the-counter derivatives, financial crisis.

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1. INTRODUCTION

Financial markets have been highly innovative over the last two decades. The number of new products and variations on products which have been launched over this period has been immense.[1] Newly invented products such as credit default swaps (CDS) and collateralised debt obligations (CDOs) went from zero transactions to transactions that were calculated to place billions of dollars at risk, all within the space of a few years. The speed of diffusion of these products across actors, institutions and countries was dramatic and illustrated a basic problem in law and regulation. As the actors themselves were aware, if all such products had to be subject to regulatory approval or, even worse, had to be explicitly allowed for in law, the speed of innovation would slow to a crawl. This would have a variety of disadvantages to the originators of such products, e.g., nobody would be able to accrue first-mover advantage and rapidly establishing scale and reputation for these new products would be more difficult. These requirements for long regulatory approval processes ruled out civil law countries as potential sites for such markets as these systems generally embodied a presumption that unless something was specifically allowed by the code, it would be challengeable under the law. Civil law countries have therefore been generally unfavourable to financial innovation and financial risk. This has been reflected not just in law but in regulatory systems which restrict certain types of financial activity. It seems likely therefore that financial innovation is only going to flourish in common law systems, which are generally more permissive in approach. To state the obvious, therefore, financial innovation is more likely to occur in New York and London than elsewhere, a fact reflected in the dominance of these two centres in the global financial system that has been constructed in the last 30 years.

However, this is not to propose a new application of the 'law and finance' approach developed by La Porta, et al.,[2] in their effort to explain different systems of corporate governance on the basis of the difference between common law and civil law countries. Rather, we can think of this difference as providing a framework of possibilities for financial innovation but not in itself explaining how such innovation comes about and, more importantly for this discussion, how such innovations are governed and regulated even in common law settings. In other words, we still have to explain how these potentialities are realised and for this purpose it is necessary to incorporate politics and power. At least since the New Deal, it has been recognised that financial innovation is not an unalloyed benefit to society and this understanding goes across common law countries as much as

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[1] E. Engelen, I. Erturk, J. Froud, A. Leaver and K. Williams, 'Reconceptualizing Financial Innovation: Frame, Conjuncture and Bricolage', 39 *Economy and Societ*y (2010) p. 33.

[2] R. La Porta, F. Lopez-de-Silanes, A. Shleifer and R. Vishny, 'Law and Finance', 106 *Journal of Political Economy* (1998) p. 1113.

across civil law countries. On the contrary, during the heyday of the Bretton Woods system, fixed exchange rates, controls on flows of capital, varying levels of state management of fiscal and monetary matters and legal prohibitions on certain forms of activity and organisation all inhibited financial innovation in order to reduce the possibility of volatility, turmoil and financial booms and busts. The collapse of this system as described in numerous accounts of the rise of neo-liberalism[3] and the gradual establishment of deregulated financial markets particularly in the US and the UK changed this situation. However, this broader change still required activities at a more micro level in terms of particular markets, products and firms if the potential was to be realised. At this level, it is possible to see actors in conflict, expressing different perspectives, embodying different interests and, most of all, engaging in strategies and tactics in order to pursue their interests. Law, contestation and power reveal themselves in these instances. The space for financial innovation still has to be made and imposed against different actors and different potentialities.

We should perceive these processes as happening unevenly across different financial markets, not as an imminent outcome of inevitable trends. We have to contextualise them carefully in a moving scenario of international regimes, national politics and the global political economy, and to understand that in this changing landscape, powers wax and wane depending both on circumstances and on the strategy and tactics pursued by actors. In this respect, the financial crisis gives us a useful opportunity to examine the limits of hegemony, i.e., the degree to which the taken-for-granted structures in particular sectors of the financial market can be revealed as the outcome of distinctive forms of power and politics. The financial crisis shows starkly who benefits and who loses from a particular structure and then reveals to us how public and private actors struggle to build a new order in a new context.

This paper therefore focuses on a specific sector of the financial markets: that concerned with over-the counter (OTC) credit default swaps (CDS). What makes this a particularly interesting object of study is that in the run-up to the financial crisis, OTC CDS grew to a huge extent and were integrally involved with the overall expansion of CDOs, sub-prime mortgages and the subsequent balance sheet difficulties encountered by many financial institutions. Early analyses of the collapse of 2008 identified CDS products and in particular the way in which they were traded in OTC markets as a fundamental cause of the crash. How these markets operated became subject to more detailed scrutiny, and what emerged was a complex interplay of politicians, regulators, financial institutions and intermediaries struggling to shape and reshape law and regulation by using various resources, theories and technologies.

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[3] G.A. Krippner, *Capitalizing on Crisis: The Political Origins of the Rise of Finance* (Cambridge, Mass., Harvard University Press 2011).

The paper is in three sections. In the first section, the struggle over the legality of OTC derivatives is discussed, and it is shown that in spite of resistance, the combined power of industry insiders and supportive federal officials led the US to legitimate these products in a way that was particularly advantageous to those trading them. In the second section, the products themselves are discussed in more detail to show how and why they were capable of producing the sorts of profits that further augmented the legitimacy of the market and the power of the institutions which were trading them. In the third section, the impact of the financial crisis on this market is discussed and in particular how issues of law and regulation surfaced again. This shows how, in spite of the massive delegitimation resulting from the crisis, private actors have still been able to limit the degree of legal and regulatory constraint to which they have been subject. In the concluding section, the argument for highlighting the interaction of law, contestation and politics, particularly in the financial markets, is considered.

2. OVER-THE-COUNTER DERIVATIVES AND THE GROWTH OF CREDIT DEFAULT SWAPS

From the early 1980s, an alternative way of trading derivatives emerged to challenge regulated exchanges such as the Chicago Board of Trade and the Chicago Mercantile Exchange, the existence of which went back over a century. Regulated exchanges were, as their name suggests, regulated by national regulators, and in the US by the Commodity and Futures Trade Commission (CFTC). They traded in standard contracts and the exchange itself mediated between contracting parties. Members deposited margin calls so that in the event of a crisis with one member, liquidity was not entirely lost. Individual members might become insolvent but the exchange ensured that this did not spread to other members.

Over-the-counter trading grew as an alternative to exchange trading and in quantitative terms soon outstripped it. For example, measured by amounts outstanding in US dollars, the OTC derivatives market in June 2009 was worth approximately $604 trillion compared to around $72 trillion outstanding on organised exchanges (Bank for International Settlements, 2009a[4] and 2009b[5]). Why did this occur? This is a complex question which requires much further research. However, there are two elements that are relevant. The first is the nature of OTC contracts and in particular their flexibility and profitability. The second element is the nature of regulation of these contracts – or more precisely the lack of regulation.

In relation to OTC contracts themselves, as invented in the 1980s, they were bilateral, between two parties who determined the nature of the product traded and

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[4] Bank for International Settlements, *BIS Quarterly Review June 2009* (Basel, BIS 2009a).

[5] Bank for International Settlements, *OTC Derivatives Market Activity in the Second Half of 2008* (Basel, BIS 2009b).

the price for the product. A theme which is continuously emphasised by proponents of OTC trading is its flexibility. This refers to a number of features of the relationship between buyer and seller. Whilst there is some standardisation of the contract underpinning the trades coming from ISDA's model agreement and subsequent amendments,[6] the actual content of the trade is determined by the two parties to the contract. This means that there are no fixed terms to contracts and no fixed units: parties to the contract make deals for as short or as long as they want, as big or as small as they want. They can create whatever sort of underlying assets they wish – a crucial point when in the period from 2001 collateralised debt obligations (CDOs) based on packages of asset-backed securities (particularly those associated with sub-prime mortgages) were being developed in investment banks at a rapid rate. These CDOs were highly diverse not just in that they were ultimately dependent on many individual loans with their own distinctive characteristics, but also in the way these were placed into tranches and further rebundled into CDOs.[7] Central to the construction of these deals was the development of CDS, which in theory offered a way for the purchasers of CDOs to offset any credit risk associated with their purchase by buying a form of protection. The flexibility of the OTC market to tailor CDS contracts to the exact specifications required by the producers of the CDOs was crucial to underpinning the huge growth of this market in the period 2001-2007.

Key to this was the regulatory position of OTC markets, which developed in the 1990s up to the financial crash. In the US, the OTC derivatives market had developed during the 1980s and 1990s in a state of legal uncertainty about the enforceability of the contracts through the courts. Stout argues that this was because 'American common law has long refused to enforce off-exchange contracts of sale not intended to be settled by delivery of the good or service in question'.[8] In the US, such contracts were therefore seen as a form of gambling. By contrast, she argues that the Financial Services Act of 1986 in the UK eliminated 'the old rule against difference contracts … making all financial derivatives, whether used for speculation, legally enforceable'.[9] This left US derivatives traders at a potential competitive disadvantage compared to those based in the UK and in the period up to 1998 debate grew in the US about how to resolve this situation. OTC traders in the US were keen to regularise the situation and make OTC derivatives legally enforceable rather than occupying a shadowland of uncertainty. Although this uncertainty did not stop the market growing, it occasionally revealed itself when

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[6] G. Morgan, 'Market Formation and Governance in International Financial Markets: The Case of OTC Derivatives', 61 *Human Relations* (2008) p. 637.

[7] D. MacKenzie and Y. Millo, 'Constructing a Market, Performing Theory: The Historical Sociology of a Financial Derivatives Exchange', 109 *American Journal of Sociology* (2003) p. 107.

[8] L.A. Stout, 'Why the Law Hates Speculators: Regulation and Private Ordering in the Market for OTC Derivatives', 48 *Duke Law Journal* (1999) p. 701.

[9] L.A. Stout, 'Why We Need Derivatives Regulation', *New York Times*, 7 October 2009.

organisations outside the financial sector (most notably Gibson Greetings, Proctor & Gamble and Orange County) lost large amounts of money on OTC derivatives trading and then went to the US courts filing lawsuits challenging the enforceability of these agreements.[10]

By 1998, it was clear that there was going to be some sort of clearing up of the legal position of OTC markets with Brooksley Born, head of the CFTC, proposing an end to OTC, and OTC traders themselves supporting the legal enforceability of the contracts. According to an article in the New York Times,[11] Born's efforts in 1997-98 to institute regulation over OTC derivatives were fiercely opposed by key figures such as Alan Greenspan at the Fed, Robert Rubin and Larry Summers in the Clinton Treasury Department and Arthur Levitt at the SEC, who in turn were strongly supported in their opposition by the industry. Born's original proposal to include the banning of OTC markets in a new law was rejected and she left the CFTC in 1999. A report from the President's Working Group on Financial Markets (consisting of Summers, Greenspan, Levitt and Rainer) was published in November 1999.[12] This report argued in favour of clearing up the legal position of OTC derivatives in the US system and, further, of legally taking them out of the purview of any of the US regulators, particularly the CFTC; both of these recommendations were followed in the Commodity Futures Modernisation Act (CFMA) 2000. Stout states that

> the CFMA not only declared financial derivatives exempt from CFTC or SEC oversight, it also declared all financial derivatives legally enforceable. The CFMA thus eliminated in one fell swoop, a legal constraint on derivatives speculation that dated back not just decades, but centuries. It was this change in the law – not some flash of genius on Wall Street – that created today's $600 trillion financial derivatives market.[13]

Glass also describes this Act as a 'famous victory' for swap dealers who 'have historically opposed increased regulation of OTC derivatives'.[14] Tett states that CFMA specifically

> stressed that 'swaps' were not futures or securities and thus could not be controlled by the CFTC or SEC or any other single regulators. 'Congress nailed the door shut in 2000 [on unified regulation], with the passage of the

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[10] Stout, *supra* n. 8, at p. 779.

[11] P.S. Goodman, 'The Reckoning: Taking a Hard New Look at a Greenspan Legacy', *New York Times*, 9 October 2008.

[12] *Over-the-Counter Derivatives Markets and the Commodity Exchange Act*, Report of the President's Working Group on Financial Markets (Washington, DC. 1999).

[13] Stout, *supra* n. 9.

[14] A.W. Glass, 'The Regulatory Drive Towards Central Counterparty Clearing of OTC Derivatives and the Necessary Limits on This', 4 *Capital Markets Law Journal* (2009) p. S79.

> Commodities Futures Modernization Act' observed ISDA lobbyist Mark Brickell. The derivatives sector was jubilant.[15]

Born's arguments for banning OTC derivatives centred around two issues. The first issue continued the old critique identified by Stout and others that these contracts were essentially a form of gambling. As Mackenzie and Millo show in their discussion of exchange-traded derivatives, it was possible to launch an alternative interpretation in which the contracts were more 'scientific' in nature due to the way in which pricing now reflected a developed theory of finance.[16] However, this argument only worked in the eyes of Born, et al., so long as the products were traded on a regulated exchange, where in effect the gambling element could be monitored and controlled. Absent that environment and the consequence was a return to pure gambling. Furthermore, Born identified the systemic risks which were emerging as OTC contracts grew in scale and scope; they were encouraging more and more speculation and the degree to which they were being used to hedge against specific risks was reducing compared to the degree to which they had become useful instruments for speculation. Because there was no central register, it was impossible to determine where risks were being held; the argument that this system was spreading risk was judged to be wishful thinking that did not correspond to the increased amount of trading between the large financial institutions (see Born 2001 for a cautious overview of those years).[17]

Born's arguments were crushed under the weight of professional and practitioner opinion that the OTC derivatives were making the market more efficient. The President's Working Group on Financial Markets consisted of academic economists and central bankers who supported the process of deregulation in financial markets. For them, OTC derivatives explained to a degree how potentially catastrophic collapses in particular regions or sectors (such as the Asian financial crisis of 1997-8) had been contained. Because institutions had bought and sold derivatives in order to hedge risks, the impact of collapses was diffused. This argument was reinforced in the light of the dot.com crash and the collapses of Enron and other large US companies at the turn of the millennium.

3. MARKETS, PRODUCTS AND POWER

It is important to identify the effects of this process in terms of politics and power. Effectively what occurred was that the largest institutions in the financial sector

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[15] G. Tett, *Fool's Gold* (London, Little, Brown 2009), at p. 87.

[16] MacKenzie and Millo, *supra* n. 7.

[17] B. Born, 'International Regulatory Responses to Derivatives Crises: The Role of the U.S. Commodity Futures Trading Commission', 21 *Northwestern Journal of International Law & Business* (2001) p. 607.

became hugely more profitable (and more risky) as a result of their ability to trade these sorts of products without regulatory oversight. The degree of profitability of the financial sector in the golden years between 2002 and 2007 created a coalition consisting of insiders to the industry, supporters of free markets inside the economic profession and the regulatory bodies and governments content with the tax take from these rich institutions and individuals. The cognitive and normative narratives of the advantages of free markets went along with powerful isomorphic forces as expressed by Citicorp Chief Executive Chuck Prince, who said in July 2007: 'When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing'. Alongside this, there was a more prosaic instrumental narrative – everybody, from the consumer using debt instruments such as mortgages and credit cards to fund current consumption, through to industries and nations which depended on this expanding consumption in the US, through to the banks intermediating between savers and borrowers on a global scale and generating huge earnings for themselves, their shareholders and their traders, appeared to be enjoying the benefits of this deregulation, even if it was clear that certain people were benefiting more than others. Neither governments nor the main financial institutions were willing to heed the warnings of isolated individuals betting against the market[18] or, more importantly, the worries of institutions such as the Basel Committee about the degree of leverage and risk in the financial system. The period saw a massively powerful reinforcement of the view that deregulation had been correct policy as huge profits flowed around the financial system. Yet this was an artefact both of the lack of regulation per se and in particular of the way in which the 'free market' enabled the accumulation, under specific conditions, of vast 'risk free' profits.

These dynamics worked themselves out in a variety of ways across different parts of the financial markets. This paper focuses particularly on OTC credit default swaps. At their peak in December 2007, credit default swaps constituted almost 10% of the total notional amounts outstanding on OTC derivatives. Credit default swaps were 'invented' very recently. Tett[19] describes how in 1994 JP Morgan bankers first put together the concept of a contract which would protect a lender against the default of any loans which it had made. Over the following few years, they worked through some of the technical details of such a product, first selling it in late 1997.[20] The first separate entry for CDS contracts in the BIS quarterly reports on the OTC derivatives market occurred in 2005 and it stated that notional amounts outstanding on these contracts were approximately $10 trillion by mid-

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18 M. Lewis, *The Big Short: Inside the Doomsday Machine* (London, Allen Lane 2010).

19 Tett, *supra* n. 15, ch. 1.

20 M. Phillips, 'The Monster That Ate Wall Street: How "Credit Default Swaps" – An Insurance Against Bad Loans – Turned from a Smart Bet into a Killer', *Newsweek*, 27 September 2008.

2005. By December 2007, the notional amount outstanding on OTC credit default swaps was around $58 trillion, an almost 6-fold increase in the space of just over two years.[21]

From the perspective taken in this paper, it is important to understand how this market worked and where power, profitability and risk lay. OTC CDS deals depended on a supply side in which there had been initial high levels of investment in expertise, model building, calculating systems, back office and IT support. Because of the complexity and scale of these investments, only the largest financial institutions were capable of being 'producers', particularly of the more exotic OTC derivatives. It was they who built the products and proceeded to market and sell them to other financial institutions. However, once they had made such investments, the marginal costs of selling more contracts was practically zero in 'production' terms. There was no 'production' limit to the market; the only limit was how many such contracts the markets could absorb at the prices which the producers wanted to charge.

These large financial institutions, aided by inter-dealer brokers, brought together potential counterparties to OTC CDS contracts. Broadly conceived, one of the counterparties would be willing to take on the risk of default on a particular bond in return for a steady flow of income; the other party would be willing to pay a regular fee in return for the possibility of being repaid in full if the bond defaulted. The main purchasers of risk in the early part of this period included AIG (Financial Products division) and the monolines, though the 'producers' were willing to hold one end of the trade themselves on their own books if it looked profitable. As the crisis began to unfold in 2007-8, the investment banks, in fact, found themselves holding more of the risk than originally envisaged. The other counterparties to the contract, i.e., those seeking to hedge their risks on bonds (or, as increasingly happened, speculating on the collapse of bonds) included hedge funds, middle-range banks, insurers, institutional investors and corporate treasurers. Where the large financial institutions intermediated directly between the two counterparties by negotiating two separate back-to-back contracts, they aimed to squeeze the payments to the risk taker as low as possible and push the payment obligations of the risk seller as high as possible. Because the markets were not transparent and prices were not visible across the trading community and, more particularly, amongst the ultimate buyers and sellers of the contracts, there was higher information asymmetry than might normally be expected in wholesale financial markets. In particular, the intermediating financial institutions had the highest chance of collecting the most relevant information on particular buyers and sellers, on spreads being offered and accepted, on the specifics of risk in contracts, and of adjusting their spreads and their willingness to hold risk themselves. Towards the

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[21] Bank for International Settlements, *New Developments in Clearing and Settlement Arrangements for OTC Derivatives* (Basel, BIS 2007).

end of the boom period, this led some banks, most notably Goldman Sachs, to significantly readjust their market position in OTC CDS as they began to perceive the fragility of the boom and the likelihood of the coming crisis.

Traders in these financial institutions became so powerful since it was their job to find the buyers and the sellers, to make the market, and, in this way, to create profits (and their own bonuses) through a combination of fee income and spread differentials on contracts that had varying durations. In theory, if not in practice, the systems were in place to process as many deals as the traders could push through. OTC CDS markets were therefore strongly driven by the supply side organising the market, creating the products and drawing in other actors.

Having a strong and powerful sell side does not, however, guarantee an equally extensive buy side in the market. As already described, what was crucial for OTC CDS was that the buy side was not restricted to hedging. Under English and US law, there was no requirement for Company A to have an actual 'insurable interest' in the bonds issued by Company B, i.e., it did not have to own any of the bonds. Clearly, from the point of view of a holder of bonds, to be able to hedge the credit risk was potentially useful depending on the spread. But this was a relatively limited market. The fact that it was not necessary to hold the bond to take out a CDS contract on it was crucial to extending the market dramatically. That this was successfully achieved is reflected in the fact that the total amount of CDS contracts outstanding far outweighed the total amount of bonds issued and the value at risk in the original assets. Zabel, for example, calculated that the 'corporate bond, municipal bond and structured investment vehicles market totaled less than $25 trillion' and therefore $20 trillion of the total $45 trillion notional value of CDS contracts in 2007 were speculative 'bets' on the possibility of a credit event of a specific credit asset not owned by either party to the CDS contract.[22] Stout comes up with different figures which state the issue even more dramatically in that 'by the end of that year [2008], the notional value of the CDS market had reached $67 trillion. At the same time the total market value of all the underlying bonds issued by US companies outstanding was only $15 trillion'.[23]

This reflects the fact that the demand side of the CDS market was not simply a way of hedging risks that had been taken on as a result of a credit deal. It was also a way of speculating on price movements in the markets in terms of both the value of the underlying asset and the changing spreads of the CDS contract. Using CDS for speculation involved taking a short position on the asset in the belief that the odds on a form of credit default were not being estimated properly by the holders of the risk. Subsequent to the crisis, the identity of some of the individuals, hedge funds and traders within financial institutions who took on these bets, against the market

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[22] R. Zabel, 'Credit Default Swaps: From Protection to Speculation' (2008), available at: <http://www.rkmc.com/Credit-Default-Swaps-From-Protection-To-Speculation.htm>.

[23] Stout, *supra* n. 9.

as a whole, have become identified, e.g., most notably John Paulson.[24] CDS became classic instruments for taking short positions because they had known and limited costs (the premium which was being paid) but the potential of a huge upside. For much of the period between 2002 and 2007, CDS contracts were being sold at a relatively low spread because the buyers of risk thought the probability of default was very low. Even with low costs, however, hedge funds betting against the market had to endure a long period when they were haemorrhaging funds and receiving no returns. As risk and uncertainty started to be revealed in 2007, spreads widened, changing the nature of the market and who was willing to participate and on what terms.

It is important to note that, as has been already emphasised, the large investment banks who were producing these contracts sat between buyers and sellers in multiple ways that allowed them to earn fees from sales and profits from the spread whilst minimising the risks which they themselves held. Much of this arises from the very nature of OTC trading, which is that it is bilateral, customised and opaque. In other words, it is difficult to compare prices. In 2009, an FT article commented that 'dealers had every incentive to keep the market opaque and bespoke, which boosted margins – and profits'.[25]

A further crucial feature of this market related to the lack of regulation regarding the posting of collateral. Insurance companies work on the basis of matching assets to calculable risks. Insurance supervisors specify the reserves that are required to cover the risks taken by the insurance company and link these to the premiums to be paid for cover. Insurance companies are therefore relatively low on leverage, high on reserves and unspectacular in terms of profit and pay. A CDS contract, however, was explicitly not defined as an insurance contract and therefore not subject to insurance regulation. A CDS was created as a contract on a financial market which was constructed on the basis of finance theory and the mechanisms of this market.[26] The guarantee that a risk holder of a CDS contract could meet the obligations of this contract was not vested in any state regulator but in the mechanisms of the market and in particular in the system of collateral depositing. Rules on collateral depositing were the province of ISDA and embedded in the Master Agreement and the various guidelines issued by ISDA. In principle, the seller would deposit with the buyer collateral (usually cash and government securities) as a demonstration of its ability to meet the terms of the contract. ISDA set out rules concerning how the level of collateral should move up or down depending on changing market conditions.[27]

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[24] Lewis, *supra* n. 18.

[25] N. Bullock, M. Mackenzie and G. Tett, 'CDS Market's Big Bang Arrives', *Financial Times* (London), 7 April 2009.

[26] I. Huault and H. Rainelli-Le Montagner, 'Market Shaping as an Answer to Ambiguities: The Case of Credit Derivatives', 30 *Organization Studies* (2009) p. 549.

[27] Morgan, *supra* n. 6.

How the collateral system developed in practice over the decade before the financial crisis reveals a rather complex and changing picture. One particular group of companies which were selling CDS products on ABS CDOs, the so-called 'monolines' (the biggest of which were Ambac and MBIA), posted no collateral at all on the contracts which they struck. Monolines had emerged initially as insurers of municipal bond issuers and were regulated by the New York Insurance Department. The rules of this regulator would have made the posting of collateral prohibitively expensive but rather than not enter the market, the monolines, in Glass's words 'for years fought pitched battles with the risk departments of the swap dealers and when the dust settled the rule was established that AAA-rated monolines did not post collateral on CDS'.[28] The AAA rating was given to the monolines by the rating agencies on the grounds that they had never defaulted and their financial underpinnings were sound. A similar rating was given to AIG FP, the London-based arm of the large US insurance group, which sold large numbers of CDS contracts. Therefore, AIG FP also did not post collateral, working on the basis that its parent company had sufficient funds to back up any potential problems.

ISDA, under pressure from BIS, became more active from the late 1990s, firstly in tracking the amount of collateral being posted and secondly in encouraging members to post more. It began to conduct regular Margin and Collateral Surveys, which were published on the ISDA website. These surveys indicate that there has been a gradual rise in collateral agreements from an estimated 12,000 in 2000 to around 150,000 in 2009.[29] Up until 2007, the total estimated collateral in the whole OTC market according to ISDA was approximately $1.3 trillion, though since then it has tripled, an indication of the more cautious attitude to collateral which has emerged after the crisis. This compares to a total notional commitment for CDS contracts alone of $57 trillion and a total of $516 trillion for the market as a whole according to BIS data.[30] The ISDA Margin Survey in 2009 shows that in the period from 2004 to 2007, the total reported collateral went up from $1,017 trillion in 2004, to $1,209 trillion in 2005, to $1,329 trillion in 2006 and to $1,335 in 2007.[31] At the same time, the OTC global market had more than doubled from $251,823 trillion in December 2004 to $595,341 trillion in December 2007.[32] As the crisis revealed, collateral levels were far too low when the underlying assets began to fail on a systemic basis and sellers of protection were called on to recompense the purchasers of CDS contracts.

However, contracts did contain conditionality clauses on the posting of margin and collateral. Whilst under normal conditions these postings were very low, should

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[28] Glass, *supra* n. 14, at p. S88.
[29] ISDA, *ISDA Margin Survey 2009* (2009), at p. 2.
[30] Bank for International Settlements (2009b), *supra* n. 5, at p. 7.
[31] ISDA, *ISDA Margin Survey 2009* (2009).
[32] Bank for International Settlements (2009b), *supra* n. 5.

conditions change they could rise steeply. For example, the scale of collateral requiring to be posted was linked to the value of the underlying assets so that as this fell and the likelihood of the CDS seller having to recompense the CDS buyer rose, so more collateral was required. The level of collateral to be posted was also linked with the credit rating of the CDS seller since this indicated to other actors in the market whether the seller had the capital to meet any obligations potentially arising from defaults in the assets which underlay the CDS. If the rating of a seller was lowered, the seller would suddenly become subject to a potentially heavy call for collateral (as eventually happened to AIG in September 2008, leaving a huge hole in AIG's balance sheet and requiring a massive injection of capital from the US government).[33] This potential for collateral shift would be exacerbated because institutional investors would have to sell off the underlying assets (i.e., the CDOs) if the rating changed down from Triple A. Such sell-offs clearly led to a further fall in their value, requiring further posting of collateral by the CDS sellers to meet the gap between the guaranteed price and the market value.

Up to this point, however, investment banks were able to earn huge profits in this market in a variety of ways. Firstly, they could scale up their sales at low marginal cost. Secondly, they were able to charge fees in a market which lacked transparency and where buyers were unable to compare prices. Thirdly, they could issue these contracts with very little requirement to hold appropriate capital. Fourthly, they were able to offset the risk by setting up contracts with the monolines and AIG, usually at a rate significantly below that which they were charging the original buyer of the contract.

The OTC CDS market was therefore a very particular type of market. It was dominated by a small number of CDS sellers feeding a large number of market participants with different requirements. This feeding process was structured by an opaque pricing system where what was actually being sold also became increasingly complex and difficult to understand, particularly in terms of the interdependencies of risk. How and why did this market develop and grow? The answer lies in the flexibility it delivered to many of its key participants, the profitability it generated for some, the opportunities for speculating that it provided to others and, finally, its role in serving and promoting the larger market of CDOs, securitisation and the expansion of consumer credit on which the US and the UK depended in economic and political terms. Because it was unregulated, it could respond speedily to new opportunities or rather create new opportunities without bothering with the traditional panoply of regulation in financial markets which required appropriate levels of reserve. Ultimately, the scale of profits was so large because risks were under-provisioned and under-priced; risks were under-

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[33] AIG, 'AIG Discloses Counterparties to CDS, GIA and Securities Lending Transactions' (15 March 2009), available at: <http://www.aigcorporate.com/index.html>; R. Boyle, *Fatal Risk: A Cautionary Tale of AIG's Corporate Suicide* (New Jersey, Wiley 2009).

provisioned because regulation was absent and it was left to the private actors to determine their own levels of provision, which they set very low; risks were under-priced for reasons that related to sustaining and growing businesses in an environment where external monitoring of pricing was non-existent. Thus, when the underlying risky assets (i.e., the subprime mortgages) lost value, the consequences were magnified because of the lack of adequate provisioning and the degree of speculative activity drawn to the area by the under-pricing of risk.

4. THE FINANCIAL CRISIS AND THE RESPONSE OF REGULATORS AND POLITICIANS

The previous section has identified what was at stake in the boom period. The lack of regulation and law enabled the investment banks to build a model of super-profitability in the sphere of OTC trading in CDS products with very little monitoring or supervision. At the same time, the interdependencies which had grown in the financial system between commercial and investment banking, between savers, borrowers and the financial markets, and between governments and the financial sector had created a number of institutions which were 'too big to fail'. Once the markets froze after Lehmans was allowed to fail, governments seemed to face the potential for a complete collapse of the financial sector. In the end, they opted for rescues that placed public money either directly or indirectly behind the banking system. The fact that, in the initial stages, much of this public money went straight into paying off OTC CDS contracts that had fallen due as a result of potential defaults placed this part of the market directly into the public eye. AIG was the most graphic example of this, having to pay out much of the capital provided by the US government to its counterparties in OTC CDS contracts, many of whom were based in Europe. Thus, US funds bolstered the recapitalisation of the European banking system, creating huge political controversy. Therefore, when governments came to identify the causes of the crisis, one of their first targets was the OTC CDS market.

From early on, a consensus emerged across the most important governments and regulators (the US, the UK and the EU, working through the G20) that the key mechanism to attack the problems arising from OTC derivatives and CDS contracts in particular was the forcing of more of this business onto regulated exchanges and central clearing houses.[34] The Obama administration, through Treasury Secretary Geithner, pledged to pursue legislation to mandate clearing of all standardised derivatives through regulated central counterparties (CCPs) as well as making obligatory what are described as robust margin requirements. Under the proposed

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[34] E. Helleiner, S. Pagliari and H. Zimmermann, *Global Finance in Crisis: The Politics of International Regulatory Change* (London, New York, Routledge 2010).

system there would be more recordkeeping and reporting requirements including an audit trail on all OTC derivatives as well as pressure to move as many contracts as possible not just into CCPs but, if possible, onto regulated exchanges. The EU also supported the idea of CCPs. This agreement was the basis of intensive international cooperation through the G20 in April 2009, which declared that 'we will promote the standardisation and resilience of credit derivatives markets, in particular through the establishment of central clearing counterparties subject to effective regulation and supervision'.[35]

At the September 2009 meeting of the G20 in Pittsburgh, the following Declaration was adopted:

> All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end 2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements. We ask the [Financial Stability Board] and its relevant members to assess regularly implementation and whether it is sufficient to improve transparency in the derivatives markets, mitigate systemic risk and protect against market abuse.[36]

What the governments and regulators particularly wanted to achieve was a situation where the failure of a counterparty could be contained and would not spread out and contaminate the system as a whole. One obvious route in this direction would have been to ban OTC products and insist instead that derivatives be traded on regulated exchanges. In the US, this argument was briefly pushed by Barney Franks in the House, but in spite of the crash and of the clear role of OTC CDS contracts in the crash, this argument did not garner significant support. To force everything onto regulated exchanges would have closed down large areas of business for big banks. In spite of the strong words at the G20 April 2009 summit, no major political leader has actually pushed for this complete ban. The anticipated push-back by the financial institutions, the inter-dealer brokers and some of the clients, together with the support of many economists and commentators for the idea that the OTC market was efficient, seemed too powerful even in the immediate aftermath of the crisis to take on directly.

Instead, what has emerged has been an effort to create what might be described as a technical fix to the problem alongside a process of political manoeuvring in which private actors and public regulators negotiate how the new rules will impact on previous business models. This technical fix consists of two parts. The first part is to mandate that details of contracts be provided to trade depositories, which, in

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[35] G20, London Summit Communiqué, 2 April 2009, available at: <http://www.londonsummit.gov.uk/resources/en/news/15766232/communique-020409>.

[36] G20 Leaders' Statement, Pittsburgh Summit (25 September 2009).

turn, can collate the data and pass it on to the regulators. The aim of this is to ensure that risks in the system are visible and action can be taken by regulators to relieve pressure. The second associated part is that most transactions will move onto central clearing parties (CCPs) where the CCP stands between the contracting parties. In the event of a counterparty failing, the loss is absorbed by the CCP on the basis of the margins and collaterals which it has collected from its members. CCPs differ from regulated exchanges in that prices are not publicly posted but continue to be negotiated bilaterally and products need not be as standardised as on regulated exchanges. CCPs set rules for margins and collaterals, clear trades and are able to assess the degree and nature of risk amongst clearing house members.

These technical fixes are currently proceeding in a highly political context. One context concerns the various private actors engaged in this process and their efforts to shape the outcome with the end of 2012 being the initial target for key areas of implementation. The second context relates to the politics of public actors, including tensions between levels of supervision and regulation, i.e., national, regional and global, and tensions across different national jurisdictions. The range of issues which are being discussed is too large for a short paper to consider in full, but it is possible to briefly describe the different actors in these processes and their interests.

In terms of private actors, it is possible to identify a range of different responses as well as the emergence of a rather different array of financial institutions positioning themselves in this new market structure.

Firstly, there are those actors who are most integrally embedded in the OTC markets, such as inter-dealer brokers. This group is most vociferous in its efforts to defend the viability and utility of OTC contracts in some areas of business. For example, Terry Smith, Chief Executive of Tullett Prebon, one of the brokers in the market, wrote in the FT that OTC market products are

> of necessity bespoke instruments and contracts, traded in large amounts between professional participants: and as such, they are the antithesis of an exchange-traded product. If OTC business is driven to these unsuitable venues, markets will become less efficient, which is an outcome we should seek to avoid.[37]

In his analysis, Glass also argues that 'the intrinsic complexity of some OTC credit derivatives is likely to prevent electronic confirmation and CCP clearing from taking hold for those products'.[38] The OTC system worked on the basis of non-standardisation; products were custom built and unique to the particular contract. They could vary across multiple characteristics of size, time, conditions, collateral and margin calls, etc. The proponents of OTC argue that this is a highly useful

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[37] T. Smith, 'The Facts Belie the Diagnosis on Credit Derivatives', *Financial Times*, 5 July 2009.

[38] Glass, *supra* n. 14, at p. S95. See also L. Jones, *Current Issues Affecting the OTC Derivatives Market and Its Importance to London* (London, City of London 2009).

function for buyers and sellers that provides them with maximum flexibility. Support for OTC trading has also come from non-financial firms, such as the 160 firms represented in the letter of the European Association of Corporate Treasurers who wrote to the European Commission requesting that any new regulation not require them to put down collateral. Banks have supported this and continue to argue in favour of OTC markets, particularly in the area of currency derivatives because they are perceived as incurring cost and reducing flexibility compared to OTC markets.

The second group of private actors that have become more significant are those who are going to benefit from proposals to push more trading into a transparent format. These are not traders, buyers or sellers but the organisations which construct the different sorts of platforms on which markets exist, prices are posted, exchanges take place, clearing occurs, contracts are registered and potential liabilities monitored and adjusted. Trade depositories, for example, such as DTCC (Depository Trust & Clearing Corporation), have been developing for some time and are now aiming to become more highly involved with OTC business. Other organisations have predominantly provided clearing facilities for exchanges and they too are aiming to extend that perhaps into running exchanges themselves (such as LCH Clearnet). Others have been based primarily in the running of exchanges, with some having long expertise in derivatives trading (such as the Chicago Mercantile Exchange with its various markets overseas). Others were founded much more recently. For example, Intercontinental Exchange (known as ICE) was established in 2000 to deal in energy futures, but following its IPO and the recent pressures to extend CCP and exchange coverage for derivatives, it has expanded in this area. In March 2009, ICE acquired The Clearing Corporation (TCC), which provides the clearing technology for ICE's credit default swap clearing house, ICE Trust. On 10 March 2009, ICE Trust became the first clearing house to process North American CDS. In July of the same year, ICE introduced clearing for European CDS through ICE Clear Europe CDS.

ICE has also become involved in the broader merger and acquisition movement in stock exchanges, which has been stimulated by the potential massive growth arising from the shift out of OTC markets. This is reflected in the bid for NYSE Euronext by Deutsche Börse in early 2011, which was accepted by the NYSE Euronext board but subsequently challenged by an alternative bid from a consortium of ICE and NASDAQ. The proposed merger later collapsed in February 2012 when the European Commission ruled that it would have created a 'near monopoly' in European financial derivatives. A similar effort to increase scale and opportunities to benefit from these regulatory changes is reflected in the agreed merger between the London Stock Exchange group and TMX, the biggest exchange operator in Canada, though again this has been challenged by a bid from the Maple Group, a consortium of Canada-based banks and pension fund organisations. The LSE/TMX deal also collapsed in the face of hostility and uncertainty in Canada. The Maple Group bid has received cautious regulatory approval from Canadian

authorities but is not yet complete as competition concerns do continue and some shareholders are reluctant to approve (as of March 2012). Although the M+A activity in this area has been hampered by competition concerns, the basic logic is clear – to build massive exchange capabilities that can be adapted to new areas (such as OTC) and new regulatory requirements. Such large-scale organisations can maximise the scale and utilisation of back and middle offices in order to cut costs and attract business as well as provide access to multiple products and services. They can set up clearing houses in various contexts, leveraging their existing assets. Although these organisations have diverse origins and different sorts of assets, they share a common interest in pushing OTCs into CCPs.

It is interesting to note that this reflects the introduction of a powerful new set of interests into the debate on changes in regulation governing OTC markets. In the previous era, there was a clear demarcation between the regulated exchanges, such as CME and Euronext, and the OTC markets. Defending the OTC border, i.e., the territory in which OTC can operate untrammelled, may still be of concern to some providers but the bigger issue now is about the territory the other side of that line, i.e., where various forms of market transparency and regulation are being proposed. The spur to the mergers is initially the recognition that this will be where the expansion will come, and even if the exact parameters of these markets are yet to be agreed, it is important to get in a position to compete for that business. In effect, then, the regulators find themselves with a new and powerful set of globally organised allies (the exchanges) to make this new system work.

Where does this leave the big financial institutions that were so central to the previous system? In September 2009, the Financial Times reported that 15 banks (including Barclays Capital, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, JP Morgan Chase and Morgan Stanley) had promised the Fed to clear the majority of interest rate derivatives and credit default swaps through central counterparties by the end of the year. This reflected the Fed's concern that financial institutions were dragging their feet and trying to limit their usage of CCPs in order to keep their costs down, their flexibility high and their trades opaque. What became known as the G-14 banks have become heavily involved with industry associations such as ISDA and SIFMA in responding to the proposals of regulators under the Dodd-Frank Act. These negotiations have, predictably in many respects, become highly protracted, not least because the regulations involve both the SEC and the CFTC and have impacts on many aspects of banks and brokerages.

Whilst there are many complex and technical elements to their responses, one aspect which has emerged strongly, particularly in the recent ISDA response to SEC proposals on the clearing houses, has been the issue of size.[39] In particular

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[39] ISDA, *ISDA's Comments on Clearing Agency Standards for Operation and Governance* (29 April 2011), available at: <http://www2.isda.org/functional-areas/public-policy/united-states/page/3>.

ISDA has been critical of the SEC for setting a $50 million minimum for an entity to become a member of a clearing house. ISDA argues that this (a) is too small to deal with potential risk, and (b) since the rule is ambiguous about whether the same $50m can count for membership in multiple clearing houses leads to the potential for cross-contamination. Instead, ISDA proposes a far larger minimum capital requirement of $1bn. It also argues that clearing members should not be able to circumvent these rules by arranging credit lines with larger organisations. These and other aspects of the G14 proposals push the advantages of scale to the new market structure and can be seen as ways of reducing competition beyond the large players.

At one level, it seems that the US regulators and the Dodd-Frank Act were successful in reshaping the terrain of OTC markets. The momentum for CCPs has built and the large banks have begun a process of restructuring away from the previous opaque bilateral model into a more transparent era. Clearly, this will mean a change in the pattern of earnings for these institutions compared to the role which OTC CDS trading took on before the crash. However, there is a continuing struggle over how to implement Dodd-Frank rules and this has engaged vast resources from industry lobbyists. It is still far from clear how the rules will affect the various actors in the OTC market.

Not surprisingly, this has created a highly complex situation in which it is still hard to see what sort of regime will emerge. On 5 April 2011, for example, Bloomberg reported the New York Fed Chairman, William Dudley, as stating that Wall Street's largest banks and money managers had failed to fulfil their commitments to put more than 90% of eligible trades into clearing houses by 2010. This followed the letter from the G-14 and industry associations which expressed concerns about achieving the end-2012 target because of potential inconsistencies, failure to take into account potential for operational risk, and market disruption if implementation proceeded at an unrealistic, expedited pace. The dual-track approach of voluntary compliance by the institutions supported by clear rules from the regulators seemed to be in danger of breaking down.

The terrain for public actors is equally complex. In a recent Progress Report on Implementation of OTC Derivatives Market Reforms (April 2011), the Financial Stability Board reported on its survey of country members. It stated that

> the responses show substantial variation across jurisdictions in the pace of implementing the recommendations in the October Report and the resulting progress toward achieving the G-20 commitments on standardisation, central clearing, exchange or platform trading and reporting to trade depositories.[40]

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[40] Financial Stability Board, *OTC Derivatives Market Reforms Progress Report on Implementation* (April 2011), at p. 1, available at: <http://www.financialstabilityboard.org/publications/r_110415b.pdf>.

In spite of the difficulties noted, the US was still reported to be furthest along in terms of implementation whilst the report stated that in the EU 'legislation has been proposed and is expected to be adopted by end-2011 with respect to clearing and reporting to trade repositories and is in the pre-proposal consultation stage regarding trading'.[41] In March 2012, the European Commission stated that the European Supervisory Authorities would develop the technical standards necessary to implement the reforms by 30 September 2012 so that they could be fully adopted by the Commission at the end of 2012, with CCPs having to apply for authorisation at the latest six months after the adoption of the technical standards, i.e., by mid-2013.[42]

In both the EU and the US, therefore, there remains uncertainty about both the standards themselves and the timescale. The clear problem amongst public actors is the potential that rules in different jurisdictions allow firms to pursue strategies of regulatory arbitrage, shifting to the systems with the lower standards. This is a particular issue with regard to the UK, which in the period leading up to the crisis had overtaken the US in terms of OTC activity and where the government and the companies have a strong interest in preserving their market position. Complicating this further is the combination of change in the UK regulatory system stemming from the commitment of the coalition government to enhance the Bank of England's authority over financial markets, at the same time as the tier of EU governance of financial markets has shifted from the Lamfalussy committees to the status of the three European Supervisory Authorities on Banking (based in London), on Insurance and Pensions (based in Frankfurt) and on Securities and Markets (based in Paris), which are supposed to have power over the City institutions. It remains unclear how this will work, particularly as the UK government continues to see the competitiveness of the City in relation to derivatives markets as central to the economy.[43]

On top of these national and regional regulators, there are efforts to ensure consistency and coherence in regulations in different contexts through the influence of global bodies. Organisations such as the Financial Stability Board, IOSCO, the OTC Derivatives Supervisors Group (OSDG), and the activities of the Bank for International Settlements Committees on Payment and Settlement Systems (CPSS) and the Global Financial System are jointly and singly producing reports and recommendations on implementation processes. As the G-14 letter previously discussed makes clear, private actors have concerns about this which go beyond issues of regulatory arbitrage to problems of overlap, duplication, inconsistency, and uncoordinated, uneven and unsynchronised implementation.

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41 Ibid., at p. 2.

42 European Commission, Regulation on Over-the-Counter Derivatives and Market Infrastructures – Frequently Asked Questions (Brussels).

43 G. Morgan, 'Supporting the City: Economic Patriotism in Financial Markets', 19 *Journal of European Public Policy* (2012) p. 373.

5. CONCLUSIONS

Overall, therefore, there has emerged more law and regulation around OTC trading in the aftermath of the crisis. Private actors rapidly saw off efforts to outlaw such trades altogether. Instead, they have been lobbying governments to provide themselves with some room for manoeuvre in the new context. They have also been relatively successful in undermining the argument that CDS could go entirely onto regulated exchanges. Exchanges are commodified businesses; they offer high transparency and, associated with that, high competition and low profits (compared to the OTC markets), particularly where entry requirements to the exchange are set at a relatively low level (compared, for example, to the $1bn capital requirement suggested by the G-14). CCPs offered a hybrid solution that has in effect become the accepted goal of the private and public actors; because of their requirements for standardisation, they reduce the ability of dealers to produce new customised versions of products, although because they lack price transparency, they continue to offer higher levels of profitability than regulated exchanges. The CCP model, however, comes alongside the argument that non-standardised products must be able to continue, an argument strongly pushed by the large banks and brokers. Regulators have responded by insisting on more stringent reserve requirements for any continued OTC-traded contracts. They have also demanded that all such deals be centrally registered. However, where the distinction between standardised and non-standardised will exist is still being discussed and will make a significant difference to both the rate of expansion of CCPs and the adjustment required by the financial institutions to their own models of trading. Private actors have sought to keep some space for OTC trading; they have supported the development of CCPs, which allows them to continue with bilateral trading and some opacity in pricing.

What is remarkable is that all this has happened within four years of a massive financial crash, significantly attributable to trading in these instruments, and in a context, firstly, where banks had to be bailed out by governments, secondly, where banks are extremely unpopular, and, thirdly, in an era of fiscal austerity brought about to a significant degree by the amount of state funds devoted to rescuing the banks. Nevertheless, the banks have been able to rescue and retain some key parts of the business model which contributed to all this. In spite of all the contestation, law has been reshaped to only a minimal extent and the power of the financial institutions, despite its weakening in the aftermath of the crash, has been reasserted.

On the face of it, there has been broad consensus between private and public actors that OTC derivatives should move onto CCPs. However, with each category, there have emerged new struggles. The most important new feature amongst private actors has been the emergence of exchanges and other back-office organisations as central actors in this shift. The potential of CCPs for OTC trading has stimulated a further bout of reorganisation amongst the platform providers and these have now become an important constituency in the progress of these reforms. The powerful actors in the old system – the banks, represented by the G-14 – are engaged in a

struggle to make sure that they retain as much of the new business as they can, at least in part through supporting rules which restrict the ability to become a member of a clearing house – and therefore to take part in trading OTCs – to highly capitalised institutions.

Looking at public action on a global scale, there is a large amount of activity amongst industry associations, *ad hoc* committees of supervisors and regulators, together with committees and organisations based around BIS to create a coherent response. However, national responses are affected by national priorities and, in the case of EU countries, by the emergence of a new level of EU supervisory authority. They are also affected by national concerns to have a share of the business and not to see a limited number of CCPs concentrated in just a couple of countries. It is too soon to see how these different national contexts may affect the distribution of the CCP business, but it is certain that this will be highly competitive, another reason why exchange mergers are being pushed to maximise economies of scale and scope.

These different outcomes of reform impact differentially on the actors involved. As the response to the financial crisis has shown, private actors move quickly to repair markets[44] – and within this, it is the most powerful that move quickest and with most deliberation and calculation. Public actors have moved more slowly and because the issue of national regulation and regulatory boundaries has become so strongly linked to issues of reform, gaining agreement on the detail of the reform to CDS markets – as opposed to the principle of reducing OTC trading – has proved difficult. In the US, the Obama administration and the Dodd-Frank Act have sought to push more derivatives business onto regulated exchanges and CCPs and at a faster speed than elsewhere, although much of the detail is now bogged down in negotiations between the SEC, the CFTC and the banking lobby. Whilst offering support for the US government action, the main European governments and the EU itself are still not at implementation stage with their own rules. In London in particular, where cross-border OTC trading was so strong, there is the most opposition to CCPs and the most effort to keep non-standardised contracts as a viable option.

In conclusion, even the most abstruse and technical of markets (as CDS may appear) are subject to social processes. This is not surprising: vast amounts of money change hands in these markets, and setting the rules in ways which suit the powerful actors whilst hiding behind technocratic and expert-driven discourses about market efficiency is an expected response. Politicians and regulators often find it difficult to respond coherently, and this creates unevenness and uncertainty and with it the possibility of regulatory arbitrage. By studying these markets in more detail, it is possible to reveal the choices that are being made and, at least in part, to get behind discourses of efficiency to an understanding of the interests being served.

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[44] G. Morgan, 'Legitimacy in Financial Markets: Credit Default Swaps in the Current Crisis', 8 *Socio-Economic Review* (2010) p. 17.