

**Diverging Derivatives:  
Law, Governance and Modern Financial Markets**

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The term “derivative” possesses a number of useful meanings. It is familiar to anyone who has taken an elementary calculus course because it refers to a mathematical function that is *derived* from another function. In differential calculus, for example,  $dx/dt$ , the first derivative of a continuous function  $x=f(t)$ , can be used to calculate the slope of the tangent line at a particular point, and measure instantaneous change over time. In finance, a derivative is an “arrangement or instrument (such as a future, option, or warrant) whose value *derives* from and is dependent upon the value of an underlying variable asset, such as a commodity, currency, or security” (Oxford English Dictionary). Modern financial derivatives include futures, options, and swaps, as well as more complicated instruments. In this paper, I exploit this double-meaning of “derivative” to discuss how and why the markets for two types of financial derivatives diverged over time.

Modern financial derivatives can be distinguished in a number of ways. Here I focus on where they are transacted. Generally they are traded in one of two venues: on an organized exchange (e.g., on the Chicago Mercantile Exchange [CME], EUREX, or HKEx) or over-the-counter (OTC). Exchange traded (ET) derivatives are standardized, fungible, and of limited variety. The host exchange provides clearing services and allows for price discovery and a high degree of both transparency and regulatory oversight. The OTC market, by contrast, involves private bilateral transactions that can be uniquely customized to the needs of a corporate client. There is little transparency, no price discovery (the terms of the transaction are not made public), no clearing, and no regulatory oversight. ET markets are publicly regulated, while OTC is subject to looser private ordering, chiefly through an industry group called the International Swaps and Derivatives Association (ISDA).

Modern derivatives markets are part of a larger and recent pattern of “financialization” (Krippner 2011), and have greatly expanded in activity, value, and significance. Financialization produced high earnings and growing employment in the financial industry (Philippon and Reshef 2009), and increasingly attracted into financial careers the graduates of elite universities and business schools (Ho 2009). However, evidence also suggests that financialization has its limits (Cecchetti and Kharroubi 2012, Lazonick 2010), and that increased size of the financial industry does not necessarily mean more efficient financial intermediation (Philippon 2011).

Although they both grew substantially, ET and OTC derivatives markets have diverged over the past several decades. Older organized exchanges (like the CME, Chicago Board of Trade [CBOT] and Chicago Board Options Exchange [CBOE]) expanded into new kinds of contracts (shifting from commodity options and futures into currency, debt and index derivatives), and their volume of business has grown considerably. They also switched from open-outcry (face-to-face trading on an exchange floor) to electronic trading. But as fast as they grew, the exchanges enjoyed nothing like the explosive growth of OTC derivative markets, whose total annual notional values are now in the hundreds of trillions of dollars (far greater than

total annual world GDP). The OTC market is much newer, and now much bigger, than the ET market. Whereas in 1986 the total value of outstanding ET derivatives contracts was larger than that for OTC, by 2008 OTC activity was worth roughly ten times as much as that for ET, despite the fact that value of ET had increased 100-fold over this period (Jorion 2010, table 2).

Some telling differences between the two kinds of derivatives markets became apparent during the financial crisis of 2008. Consider the failure of Lehman Brothers in September of that year. Like other major investment banks, Lehman was heavily involved in both the OTC and ET derivatives markets, right up until the bank collapse in September of 2008. As of May and August of that year, Lehman had over 900,000 derivatives positions worldwide (Valukas 2010 Vol.2: 569). In part because it was one of the most active participants in the credit default swap (CDS) market, Lehman's failure helped ignite a chaotic period in OTC markets in which, for example, financial institutions stopped dealing with each other because of worries over counterparty risk and their inability to value assets (Gorton 2010: 51). Furthermore, many of Lehman's creditors and counterparties were unable to extricate themselves from their positions once the bankruptcy court imposed a judicial stay (New York Times July 15, 2009, p.B7). Meanwhile, over at the CME, Lehman's exchange-based derivatives positions were cleared and closed out without incident or turmoil. Another of the most prominent financial events also involved the OTC market: American International Group (AIG) was heavily involved in the CDS market. It had to be bailed out by the Federal Reserve in September of 2008 when a ratings downgrade required it to post additional collateral as required by the CDS contracts it had entered into. AIG was unable to meet its collateral obligations, and rather than let it fail the Fed made available \$85 billion in credit (Johnson and Kwak 2010: 163-170).

Despite these sharp discrepancies in growth rates and performance during the crisis, the two markets have some important connections. Most directly, ET and OTC markets are linked because many of the same financial institutions trade in both at the same time. A large dealer-bank (e.g., Goldman Sachs, Deutsche Bank, or JPMorgan Chase) that takes on risk in a bespoke OTC derivative contract with a client may lay off some or all of that risk on one of the exchanges (Remolona 1992: 38).<sup>1</sup> Hence, financial institutions use one market to balance their positions in the other. These connections are deepened because some quite similar instruments trade in the two markets (which among other things create arbitrage opportunities). For example, a linked series of foreign exchange futures contracts, traded on an organized exchange, can be used to construct something very close to a currency swap contract, traded over-the-counter. Economically, the two are almost identical. In similar fashion, a futures contract, traded on an exchange, is simply a standardized version of a forward contract that is traded over the counter.

The financial crisis of 2008 produced substantially different effects in the two derivatives markets, despite the connections between them. Worrisome instability in OTC contrasted with

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<sup>1</sup> OTC derivatives consist of various interest rate and currency swaps, and credit derivatives including CDSs (credit default swaps), CSOs (credit spread options), CLNs (credit linked notes) and CDOs (collateralized debt obligations). See Ayadi and Behr 2009.

robust activity on the exchanges. In the political aftermath, this striking disparity motivated a number of policy proposals in both the United States and Europe to reform OTC markets in such a way as to make them more like organized exchanges, by adding more transparency, regulatory oversight, and clearing arrangements to reduce counter-party risk (Duffie 2010, Litan 2010, Skeel 2011).<sup>2</sup> Since the exchanges were more stable than OTC, why not make OTC more like an exchange? The magnitude of the financial catastrophe notwithstanding, there has been strong resistance to reform from various financial institutions, particularly when regulation threatened to undercut the profitability of OTC activities for core market participants. Dealer-bankers made a lot of money in the pre-crisis OTC market, and consequently were reluctant to change the status quo.

In this paper I am going to consider a number of issues raised by the intriguing contrast between OTC and ET: how and why did OTC grow so fast, as compared to ET? After all, derivatives exchanges like the CME, CBOT and CBOE were powerful market incumbents with strong political ties to Washington D.C. and they enjoyed enduring relationships with their regulatory overseers in the Commodity Futures Trading Commission (CFTC). They had considerable political and economic resources to wield, and yet OTC markets provided competition that the exchanges were somehow unable to suppress, circumvent or mitigate. One reason had to do with the fact that, repeatedly throughout the late 1980s and 1990s, U.S. politicians and regulators decided not to regulate OTC markets, and that decision was emphatically underscored by the Commodity Futures Modernization Act [CFMA] of 2000. Given that public regulatory oversight may be one reason why ET markets performed so much less problematically during 2008, it is useful to recall the episode of 1998, when under Commissioner Brooksley Born the CFTC issued a concept release stating that the Commission might consider the issue of regulation for OTC. This “trial balloon,” which explicitly stated that the CFTC had no “preconceived result in mind,” nevertheless created a firestorm of controversy and revealed how formidable the opposition to regulation had become. Why did regulators not apply to OTC the kind of oversight and intervention that they historically applied to the exchanges? Why did the public interest in market stability not extend to the OTC market? The more general issue concerns the locus of market governance: in what venue are the “rules of the game” articulated and enforced? Is the locus primarily a public regulatory agency, or a private organization, or some kind of hybrid combination? And what are the implications for the relationship between law and markets? Public agencies use legal regulations to govern markets, but private regulators can also use contract law that ultimately relies on the coercive capacities of the state for enforcement.

Consideration of the diverging trajectories of OTC and ET derivatives, both before and during the crisis of 2008, sheds light on the relationship between law, politics and markets. In

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<sup>2</sup> Here, I am not going to determine which of the features that distinguish ET from OTC explains, in a causal sense, their divergence during 2008. Whether it is specifically because of regulation, transparency, clearing, leverage, or some other feature, is a topic for another paper.

particular, the two markets occupied quite distinct positions: one was publicly regulated, the other was not. Of course, OTC was not anarchic. But its rules and governance were largely private and did not directly involve statutory law or public administrative regulation. Law is not the only basis for market governance, although extra-legal modes of governance have important limitations. The divergence also underscores that these distinctive legal dispositions were endogenous, and that the unregulated status of OTC was a recurrent political accomplishment, not simply an *ex ante* state of nature. Well-functioning markets may depend on rule-of-law (secure property rights, enforceable contracts, non-predatory sovereigns, etc), but market power begets political power and so indirectly shapes the legal framework under which a particular market operates. The central insight of “capture theory” (Stigler 1975), that regulated industries have a strong incentive to influence the regulatory agency that oversees them, can be extended from the administrative to the legislative arena. As the OTC market grew and acquired powerful constituents and vested interests, the initial decision not to regulate it became increasingly irreversible, despite prescient concerns that reliance on private interests alone might not serve the public interest in a well-ordered derivatives market.<sup>3</sup> Market actors used their influence over political institutions to enact laws that helped set the conditions for their own profit-seeking activities, sometimes through existing regulatory institutions, but sometimes by creating *regulatory voids*.

The trade association that represented big OTC market participants, ISDA, proved to be a very able political actor. And its clout has been amplified by the recurrent threat of regulatory arbitrage, mostly between New York and London. OTC derivatives are traded in both places, and so market participants who face the prospect of unwelcome regulation can and do threaten to move their financial activities across the Atlantic. In the absence of global coordination among national regulators, this threat of “exit” will continue to empower key OTC market players. Furthermore, ISDA and its supporters made effective rhetorical use of “legal uncertainty” arguments in their opposition to regulation: any whiff of uncertainty about the decision not to regulate OTC would be enough, they contended, to undermine the market. These uncertainties had to be resolved decisively, they insisted.

## **Exchange-Traded Derivatives**

In the U.S., development of organized markets in commodity futures and options contracts was closely linked to the nineteenth-century growth of Chicago as a commercial center. More than just “hog-butcher” for the world, Chicago was also a transportation hub and close to rapidly expanding Midwestern corn and wheat production. Founded in 1848, the Chicago Board of Trade (CBOT) was closely engaged with the Chicago economy and became increasingly involved in the grain trade (Cronon 1991: 114-117, Lurie 1979: 24-7). In the 1850s and 1860s, the CBOT set uniform standards that helped to turn corn, wheat and other cultivated grains into fungible products that could be traded from a distance via standardized contracts. The CBOT

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<sup>3</sup> Such “policy feedbacks” have been examined more in the area of social than regulatory policy (Pierson 1993).

soon became a centralized market for trading in commodities and commodity futures. It even tolerated, although it did not officially sanction, trading in options contracts (then called “privileges,” see Lurie 1979: 41-2). The CBOT was founded as a non-profit self-regulating membership organization that organized the market in agriculture futures, restricted market access (only members could trade on the floor), and offered non-legal dispute resolution mechanisms. In regulating its own members, the CBOT could deploy a menu of private sanctions ranging from small fines to outright expulsion (Lurie 1979: 35). The Chicago Mercantile Exchange (CME) was founded later on, in 1898, and at first only traded contracts in butter and eggs. But like the CBOT its derivatives were based on agricultural commodities.

Roughly coinciding with the imposition of New Deal regulations on banks and financial markets, commodity and futures markets were subject to federal regulation with passage of the Commodity Exchange Act of 1936, which prohibited trading in futures contracts unless it was conducted on an exchange designated as a “contract market” (Young and Stein 1988: 1918). Initially the Act was enforced by a bureau in the Department of Agriculture (Note 1951), but public oversight was strengthened with the creation in 1974 of the CFTC. In general the purpose of regulation was to curb market manipulation and control speculation, while at the same time allowing for genuine hedging. The distinction between speculation and hedging was politically salient because, for many decades, agricultural commodity producers (like farmers) and commodity end-users (like consumers) suspected that markets like the CBOT were dominated by speculators who would drive prices up or down as it suited them (Cowing 1965: 7,12, Lurie 1979: 63). Consequently, many of the laws that regulated derivatives trading had an anti-speculative intent (Stout 1999), and they tried to protect unsophisticated “outsiders” from knowledgeable “insiders.” Whether the parties to a futures contract “intended” or could have “reasonably intended” to take physical delivery was used by the law to differentiate legitimate hedging from simple gambling on the future price of a commodity (Levy 2006). In addition, futures transactions on the organized exchanges were legitimized even as mirror-image transactions in so-called “bucket shops” were prohibited. Legitimate transactions had to occur on a legitimate market.

For most of their history the Chicago exchanges focused on commodity derivatives contracts, reflecting their origins in Midwestern agriculture. But starting in the early 1970s, the leadership at the CME began to shift the composition of tradable contracts in a financial direction. After paying \$5,000 to secure the blessing of notable University of Chicago economist Milton Friedman, the CME proposed to launch a foreign currency futures contract (Melamed 1996: 172-179). The CFTC did not exist until 1975, and so it wasn’t clear beforehand who, if anyone, should regulate these new currency futures markets. Nevertheless, the CME secured the political support of key administration officials (including Alan Greenspan, then Chairman of the Council of Economic Advisors, George Schultz, Secretary of the Treasury and a former University of Chicago colleague of Friedman, and Arthur Burns, head of the Federal Reserve) and various Illinois politicians. When President Nixon suspended gold convertibility of the U.S.

dollar, the Bretton Woods monetary system collapsed, fixed foreign exchange rates became a thing of the past, and demand for a market instrument to hedge foreign exchange risk soared. Flexible exchange rates meant that no one could be certain what a U.S. dollar would be worth in 2 months, but with foreign currency derivatives, parties could protect themselves. So the CME's first step away from commodity contracts was successful enough to point the market in a new direction. This trend away from commodities continued as, subject to CFTC approval, the CME and CBOT added more financial contracts to their markets, and the overall volume and value of trading grew. Not all the new contracts attracted enough trading volume to become viable so not every innovation succeeded (contracts are occasionally "delisted"),<sup>4</sup> but the overall trend was unequivocally upward.

The process of financial innovation was regulated by the necessity of prior CFTC approval before launching a new contract (Romano 1996: 23). Nevertheless, because of effective industry lobbying CFTC authorization was usually forthcoming and so futures exchanges averaged around 5 new contracts per year in the 1970s, 20 per year in the 1980s, and 48 per year in the 1990s (Gorham and Singh 2009: 186). The CFTC approved Eurodollar contracts in 1981, and the S&P 500 index futures contract in 1983. After the CFMA of 2000, which made it much easier to introduce new contracts, the rate of innovation increased even more. Exchanges only had to certify that listed contracts were in compliance with the law, rather than documenting it explicitly in a formal regulatory submission, and one day's notice was sufficient before launching a new contract. In 1955, 61 different futures contracts were traded on U.S. exchanges, and by 2007 there were 842 such contracts (Gorham and Singh 2009: 157-8). This growth in numbers was accompanied by a shift away from commodities and towards financial instruments as the "underlying."

In addition to the change in contracts, the exchanges were affected by technological developments that made electronic trading a possibility. Newly established financial markets more readily adopted electronic trading platforms, whereas the older exchanges were firmly wedded to open-outcry methods. Such trading happened face-to-face, in the pits. This physically distinctive venue produced informal network effects which didn't necessarily carry over to electronic trading (see Baker 1984).<sup>5</sup> Partly, the reluctance to switch was a function of market governance: older markets (like the CBOT and CME) were organized as mutual, non-profit membership organizations. As such, they were owned and governed by the very people who traded in open-outcry and who were reluctant to give up their traditional mode of livelihood.

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<sup>4</sup> For example, because of low trading volume the CME discontinued its ethanol futures contract in October 2007, and trading in "frozen pork belly" futures contracts was suspended in July of 2011. However, the demise of such contracts only reflects insufficient market interest. Failed exchange-traded contracts did not engender systemic instability or other such externalities.

<sup>5</sup> In addition, modern electronic trading platforms encode what we might call "technological governance," where markets are shaped by the technical features of the devices used by traders (Knorr Cetina 2005, Knorr Cetina and Bruegger 2002, Zaloom 2006: 141).

Furthermore, open-outcry traders argued that a face-to-face market possessed socially-rooted forms of stability that no electronic market could achieve (Zaloom 2006: 52-54). Yet a highly noted episode in the late 1990s underscored the necessity of shifting over to electronic trading platforms. LIFFE (the London International Financial Futures Exchange) was an open-outcry exchange founded in 1982 and largely modeled after the Chicago futures markets. In the mid-1990s, the most important futures contract traded on LIFFE was based on the *bund*, the long-term debt instrument of the West German government. Another European exchange, the *Deutsche Terminbörse* (DTB), deliberately offered an identical contract in an attempt to pry business away from LIFFE. As an electronic exchange the DTB was cheaper, and in a very short time it pulled away virtually all of LIFFE's *bund* business (Gorham and Singh 2009: 40-41,54). This event forced LIFFE to switch away from open-outcry, but it also made a very big impression in Chicago (Lambert 2011: 187, Melamed 2009: 48-9). However, there remained substantial resistance to ending open-outcry among CME and CBOT members, and so the transition to electronic trading accelerated only when another European electronic exchange, *Eurex*, announced its plan to open a subsidiary market in Chicago in 2003. Faced by this direct and immanent threat, the CME and CBOT mobilized their political connections in Washington to mount a regulatory delaying action through the CFTC while they shifted as much trading as possible to their electronic platforms (Gorham and Singh 2009: 62-3). When Eurex finally accomplished its delayed opening, the Chicago markets were more prepared and suffered little loss of business.

Even before the DTB-LIFFE episode demonstrated the necessity of electronic trading, the Chicago derivatives exchanges were mindful of global competition. Quite a few foreign derivatives markets were established in the 1980s and early 1990s and there were periods where stagnant turnover in US markets contrasted with exuberant growth abroad (Remolona 1992: 32-33). Then a global wave of governance reforms swept through financial markets. Many equities and derivatives exchanges had been founded as non-profit mutual organizations. But starting in the 1990s and going into the 2000s, most were transformed through a process of “de-mutualization” that turned them into joint-stock companies, and then publicly-traded companies (Aggarwal and Dahiya 2006, Gorham and Singh 2009: 105). Some stock markets even listed themselves! The older mutual form of organization meant that risks were shared among the members, and also that internal governance was relatively democratic. The CME, for example, was traditionally governed through an extensive system of internal committees that involved many of the members. This made decisive action difficult (albeit not impossible) in part because it afforded many veto points. Consequently, older traders committed to open-outcry and floor trading were able to postpone the transition to electronic trading for many years.

As currently organized, the derivatives exchanges offer a number of distinctive features. They provide “price discovery” in the sense that market prices become public information, available to market participants and others as well. Everyone knows what the market “thinks”



things are really worth,<sup>6</sup> and this encourages price competition. The exchanges are still subject to regulatory oversight, albeit less stringently than in the past (especially after passage of the Commodity Futures Modernization Act in 2000). Systemic risk problems are unlikely to accumulate because all participants have their positions “marked to market” daily, and have to meet frequent margin calls if their positions weaken. The exchanges offer clearing facilities, which means that once a transaction is finalized neither party has to worry about the ability of the other to meet their obligation, because the exchange itself guarantees execution (which is one reason why the failure of Lehman Brothers was relatively unproblematic for the CME). With clearing, market participants do not have to worry about “counter-party risk” (Kroszner 1999: 601). Organized exchanges also create liquidity (Carruthers and Stinchcombe 1999). The contracts they trade are highly standardized and fungible, the markets are deep on both the buy and sell sides, and this ensures that anyone wishing to sell can find buyers, and anyone wishing to buy can find sellers (Telser 1981). Furthermore, thanks to the clearing feature no one really has to worry about who their counterparty is, so trading can be fully anonymous.

## **Exchanges and Regulators**

Given myriad complaints about intrusive government regulation, it is easy to suppose that regulatory agencies possess substantially unilateral (and unwelcome) influence over the industries they regulate. Such an image views the balance of power between regulator and regulated as unevenly favoring regulators, and only the strict rule of law restrains the exercise of arbitrary regulatory discretion. At various points the issue of regulation over derivatives markets has been highly controversial, with many market actors taking a critical position that argued in favor of less regulation. However, the actual relationship between regulators and regulated is both more complex and more balanced.

To begin with, consider the account by Leo Melamed, long-time head of the CME, of the establishment of the CFTC (Melamed 1996: 216-7). He (claims to have) recognized that having the CME be regulated by a stand-alone executive branch administrative agency provided both symbolic and practical benefits. As financial markets, the Chicago exchanges had long played second fiddle to the stock exchanges (especially the NYSE), which had been regulated by the SEC since the 1930s. By contrast, futures markets were for decades regulated by an obscure office buried deep within the Department of Agriculture. So the establishment of the CFTC signaled that futures markets were big enough and important enough to have their own regulatory agency. For Melamed, any political symbol that connoted a rough equivalence between futures and equities markets was a good thing.<sup>7</sup>

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<sup>6</sup> This is particularly important in situations where regulations require “fair value” or “mark to market” valuation of assets.

<sup>7</sup> The symbolic aspects of finance are also discussed in Gelpert and Gulati’s discussion (this volume) of collective action clauses in sovereign debt contracts.

Melamed also suggested that having regulatory oversight offered important practical benefits because such an agency could act as a political buffer for the futures markets, especially once industry had stabilized its relationship with the agency. In other words, a regulatory agency that could be influenced by the market it regulated could be a very useful resource. Given the CME's strong ties to the University of Chicago economics department, perhaps one shouldn't be surprised to see Melamed offer a practical application of the famous "capture theory" devised in the early 1970s by Chicago economists like George Stigler, Gary Becker and Sam Peltzman. Among other problems, Melamed saw that continued adherence to "physical delivery" would be a hindrance to derivatives markets, and that a federal agency could help surmount various political barriers and shift the market over to cash settlement. In other words, a regulatory agency could usefully serve the particular interests of the industry.

The historical record bears out Melamed's expectations. The Chicago markets did indeed build strong relationships with the CFTC. They also built strong ties with the relevant Congressional committees that oversaw the CFTC. And they earmarked money and resources for the express purpose of gaining bipartisan political influence in Washington (Melamed 1996: 264,270,274). These political connections proved critical for the protection of the CME's interests in a number of instances, for example, after the market crash of 1987 when the Brady Report proposed that a single agency, the SEC, regulate both futures and equities markets, or in 2003 when *Eurex* threatened to establish operations that would directly compete with the CME and CBOT in the U.S. (e.g., Duffy 2003). By the mid-1980s, the Chicago markets had successfully expanded beyond commodity-based derivatives, their size and activity continued to grow, and they possessed strong political connections both locally and nationally. In short, they enjoyed both economic and political vitality. However, despite all this success the Chicago exchanges were unable to check or match the emergence and growth of OTC markets.

### **The Rise of Over-The-Counter Derivatives**

As fast as trading activity on the organized derivatives exchanges grew, activity in the OTC derivatives market grew still faster (Scholes 1998: 361, Stulz 2004, Morrison and Wilhelm 2007: 10). Jorion (2010: 353) points out that whereas in 1986 the total value of exchange-traded derivatives was more than the total value of OTC derivatives, by 2008 the total value of OTC had become ten times greater, despite the fact that the exchange-traded market had grown 100-fold. While the CME and CBOT were shifting from commodity to financial derivatives, large financial institutions were building a new market in swaps. The first such transaction occurred in 1981, when Salomon Brothers arranged a currency swap between IBM and the World Bank (Flavell 2010: 5-6). Before long, currency swaps were joined by interest rate swaps (swapping fixed for variable interest rates), commodity swaps, and after 1995 by credit default swaps (CDSs) (where the swap was contingent on the occurrence of a specified credit event). At first, financial institutions acted largely as brokers (e.g., the Salomon example), but before long they operated as dealers, acting as the counter-party to their customers (GDSD 1993: 39). Today the typical swap transaction involves a dealer-banker and an end-user, where the latter seeks to

hedge a particular risk. Unlike derivatives traded on an organized exchange, OTC derivatives are customized to the very particular needs of the end-user. But given that the two parties may transact multiple times, they will usually enter into an encompassing contractual arrangement (the master agreement) and modify or augment it for subsequent transactions.

The OTC market grew very rapidly, and now has a staggering total notional value (see figure 1 below). But even as it expanded, the OTC market remained highly concentrated. A small number of dealer-bankers, including both foreign and domestic commercial and investment banks, accounted for the bulk of transactions (ECB 2009: 4,20, Gorton and Rosen 1995: 300, Huault and Rainelli-Le Montagner 2009: 558-9). Gorton and Rosen (1995: 306) found that the interest rate swap market in 1992 was dominated by a small number of large banks, mostly, but not exclusively, from the U.S. A survey done in 1998 again showed that a small number of prominent financial institutions, chiefly from the U.S., Britain and Switzerland, were heavily involved in derivatives trading (as measured by total notional value as a percent of total assets). These included Bankers Trust, Chase Manhattan, J.P. Morgan, Goldman Sachs and Salomon Smith Barney from the U.S., Schroders and NatWest from the U.K., and Credit Suisse and UBS from Switzerland (Basel Committee on Banking Supervision 1999). According to Stulz (2004: 187), in 2003 seven insured commercial banks (out of a total of 575 banks holding any derivatives positions) accounted for 96% of the total notional value of all derivatives positions. Concentration is even higher in the market for CDSs: for U.S. bank holding companies, 97% of the total notional value of CDS was traded by only 5 institutions (FCIC 2011: 50).<sup>8</sup> Institutional concentration is, however, combined with significant jurisdictional dispersion. OTC markets are domiciled mostly in London and New York, and the ability of market participants to shift between these two jurisdictions have made threats to exit in the face of unwanted regulation especially credible (Horwitz 1994: 544). Furthermore, the fact that the market is constituted by large, sophisticated firms undercuts arguments that strong regulatory oversight is necessary.

The dealer-bankers are formally organized through an industry association founded in 1985, ISDA.<sup>9</sup> The founding members included both U.S. commercial and investment banks (recall that the Glass-Steagal Act wasn't repealed until 1999). ISDA offers various services to its members, including the provision of highly standardized contractual language in the form of a Master Agreement. The first such Master Agreement was created by ISDA in 1987, with updates in 1992 and 2002 to reflect the evolution of the market. With standardized forms and legal terms, OTC dealer-bankers can more easily build the customized swaps that constitute the market and by creating a common contractual language, ISDA in effect set forth the (enabling) rules of the game. Internally, ISDA is dominated by a small, core group of dealer-bankers (Partnoy 2002: 10, Partnoy and Skeel 2007: 1039). ISDA also plays a very important function by determining when the "credit events" that trigger CDSs have occurred. Such factual determinations are made by

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<sup>8</sup> Data from the OCC suggests that the OTC market became even more concentrated between 1998 and 2010.

<sup>9</sup> There is also evidence that the dealer-bankers regularly meet informally and off-the-record. See [New York Times](#) December 12, 2010.

ISDA Recognition Committees, organized by region (ECB 2009: 82-3, Flavell 2010: 86-7). Until a Recognition Committee rules that debt repudiation has occurred, the repudiation has for all intents and purposes not happened. It happened if they say it happened.

ISDA also functions as a political organization, acting in defense of the OTC derivatives industry interests around the world (Flanagan 2001: 229,246, Morgan 2010). It has been particularly vigorous in opposing any attempts in the U.S. to regulate the OTC market, but more generally it undertakes "... the education of regulators ..." as Flanagan (2001: 262) euphemistically puts it. As a testament to its global political efficacy, consider that many sovereign nations, including the U.S., U.K., France, Germany, Switzerland and Japan, have modified their corporate bankruptcy statutes by adopting ISDA's "model netting act" (which give derivatives a kind of super-priority claim on the bankrupt estate, put ahead of all other creditors, see Charles 2009, Partnoy and Skeel 2007: 1048, Roe 2011). Although such a modification can produce dramatic distributional consequences (favoring swaps market participants over other creditors), this sweeping change in bankruptcy rules mostly went unmarked.

The OTC market does not possess a high degree of transparency (FCIC 2011: 46). It is clear, for example, that until 2008 no one realized that so many unhedged CDS contracts involved AIG, and that its solvency would have such dramatic implications for the possibility of systemic failure that AIG had to be directly bailed out by the U.S. government (despite the fact that AIG was far from being the biggest player in the market). The terms of OTC transactions are not public knowledge. There is no equivalent to "price discovery," nor is it easy to figure out what a particular financial transaction is "really" worth.<sup>10</sup> This lack of transparency makes it difficult to know exactly how profitable OTC derivatives are to the dealer-bankers, although it seems that the profits have been considerable for a long time (Edwards and Mishkin 1995: 36, Gorton and Rosen 1995: 338, FCIC 2011: 50-1). Indeed, the lack of transparency makes it easier for dealer-bankers to earn high profits because their customers cannot "comparison shop" (Litan 2010: 8,17, Skeel 2011: 66, Duffie 2012: 7). The market lacks regulatory oversight (about which more below), and before 2008 there was nothing resembling clearing. This made counter-party risk a real, albeit potentially soluble, problem.

At a time when the unregulated status of OTC was still in the balance, Kroszner (1999) confidently affirmed that private risk measurement and management techniques would allow the OTC market to self-regulate.<sup>11</sup> In particular, he expressed confidence in the ability of credit rating agencies (Moody's, S&P, etc) to monitor credit risks and thus to set appropriate private standards for capital and collateral (Kroszner 1999: 609). For example, CDSs typically require

<sup>10</sup> Stulz (2004: 183-4) discusses two studies that found substantial disagreement among financial experts over the value of complicated derivatives, and Grove (2011) notes how much disputes about valuation underlie OTC derivatives litigation. Without market prices, there is no "mark to market" valuation.

<sup>11</sup> Kroszner was clearly not worried about true Knightian uncertainty. As another telling instance of self-confidence in financial economics, consider the title of Roll's 1994 article.

the two contracting parties to post an amount of collateral that is contingent on their credit ratings (highly-rated entities post little or no collateral, see Gorton 2010: 24-5, Jarrow 2011: 2.7), and which is affected by changes in the ratings (a ratings downgrade means posting more collateral). When two parties transacted across multiple OTC derivatives, these are typically netted out in the event that one of the two parties defaulted (Brown and Smith 1993: 98). If private risk management techniques worked as well as Kroszner expected them to, and if rational self-interest prevailed, then both clearing arrangements and regulatory oversight would be unnecessary. This optimism, however, completely failed to anticipate the circumstances of 2008, when genuine uncertainty about asset values and the solvency of counterparties set off a pervasive hunt for liquidity.

As compared to exchange-traded derivatives before 2000, the OTC derivatives market has been characterized by a very high level of innovation. No regulatory approval, either *ex ante* or *ex post*, is necessary in order to introduce into the market a new kind of swap, and these have evolved far beyond the early “vanilla” interest rate swaps. Indeed, in the extreme each particular swap arrangement is uniquely tailored to the specific transaction (hence the term, “bespoke”), so innovation is continuous. As Dan Awrey (2012) argues, innovation reflected a “supply side” process in which dealer-bankers, unable to use intellectual property rules to protect their financial products, had a huge incentive to innovate as a way to stay one step ahead of the competition and enjoy monopoly rents or higher market share (see also Tufano 1989). But these advantages dissipated as competitors “reverse engineered” the innovation so that further innovation was necessary. CDSs, for example, were introduced starting in 1995 and found use as a way to insure against credit risk (Flavell 2010: 82). Holders of Greek sovereign debt who were worried about the risk of default could buy CDSs that would, in the event of default, cover their losses. Unlike ordinary insurance contracts, however, the buyer of a CDS does not need to have an “insurable interest.” Perhaps even more significantly, CDS contracts were not subject to the oversight or rules imposed by insurance regulators (Greenberger 2011). So even those owning no Greek sovereign debt could speculate on the possibility of default by purchasing CDSs on Greek bonds (these were known as “naked” CDSs). Such speculation can greatly amplify the consequences of credit events involving Greek debt.<sup>12</sup> CDSs could also be used to construct synthetic versions of some of the structured financial instruments that became infamous in the crisis of 2008. An ordinary collateralized debt obligation (CDO) is built out of underlying assets like residential mortgage-backed securities, but an investment bank could use CDS’s to build a synthetic CDO with virtually the same financial characteristics but without having to acquire any underlying assets (Gorton 2010: 105). Thus, credit derivatives in the OTC market became directly connected to the events affecting the sub-prime mortgage market.

## **OTC and Regulation**

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<sup>12</sup> Flavell (2010: 86) cites an estimate that 90% of CDS buyers do not have the underlying exposure, i.e., do not have anything like an insurable interest.

Swaps began outside of any regulatory framework, as private financial contracts between large, sophisticated parties. This disposition was reinforced by a regulatory intervention made by the U.S. Treasury Department when the CFTC was established. As Rachel Harvey (2012: 19-22) explains, the bill to found the CFTC was amended in accordance with the wishes of Treasury that all foreign exchange (FX) transactions in the OTC market (then primarily based in New York City) be exempted from CFTC oversight. Only exchange-traded currency futures were to be regulated. The justification for the Treasury Amendment consisted chiefly in the claim that FX market participants were large, sophisticated institutions that knew what they were doing, and furthermore that they were already subject to regulation by the Federal Reserve and Comptroller of the Currency.

Yet as the swaps market grew and the number of participants expanded, various observers again raised the question of whether OTC markets should be regulated. During the 1990s, for example, a number of well-publicized scandals prompted consideration of the regulatory status of OTC (FCIC 2011: 47). In 1994, Procter and Gamble and Gibson Greetings both entered into swap arrangements with Bankers Trust, and both suddenly and dramatically lost large amounts of money (Overdahl and Schachter 1995, Morrison and Wilhelm 2007: 248-9). Procter and Gamble sued, and Bankers Trust eventually forgave \$200 million in debt which it claimed it was owed because of the transactions. In December of 1994, Orange County in California infamously filed for bankruptcy after suffering massive losses through OTC derivatives it bought from Merrill Lynch. The county later sued Merrill Lynch, which paid over \$400 million to settle the case. Merrill also paid a \$30 million fine to settle criminal proceedings which followed from the episode. Then in 1998, the failure of Long Term Capital Management (LTCM) again brought OTC derivatives into disrepute since it appeared that even a firm staffed by Nobel Prize winning economists could get into serious trouble in this market (Edwards 1999). These episodes underscored that OTC derivatives involved considerable risk, even for experts. And the case of LTCM showed that these risks threatened the overall market, not just the specific parties to a derivatives contract.

Even before the unwelcome publicity of the mid-1990s, various commentators wondered if the regulatory framework that governed exchange-traded derivatives should not also encompass the growing OTC market. The CFTC itself started an investigation of the Chase Manhattan Bank commodity swaps program in 1987 and then issued an advance notice of rule-making with respect to swap transactions (Young and Stein 1988: 1918). Young and Stein observed that many of the reasons to regulate exchange traded derivatives were also applicable to OTC. In particular, they noted that swaps functioned like futures, and that the Commodity Exchange Act (CEA) expressly forbade futures trading outside of designated contract markets (Young and Stein 1988: 1918, see also Stout 1999: 703). Partly because of the vigorous and often negative reaction to CFTC monitoring of swaps (mostly coming from the banks), in 1989 the CFTC exempted swaps from the CEA requirement that such contracts be traded on designated contract markets (Romano 1996: 55, Tett 2009: 27-8). Swaps qualified for exemption

if they were negotiated between two parties, if they were based on individual credit determinations, if they were documented in agreements that were not standardized, and if they weren't marketed to the general public (Greenberger forthcoming: 4). However, since the CEA did not expressly give the CFTC the power to grant such exemptions, in 1992 President Bush signed the Futures Trading Practices Act, which reauthorized the CFTC and explicitly granted it the authority to exempt OTC derivatives from CFTC regulation. With this new authority, in 1993 the CFTC exempted swaps and hybrids from regulation. This exemption was one of the last actions undertaken under the Bush administration, by the soon-to-depart head of the CFTC Wendy Gramm (see Washington Post 1-13-1993: F1).<sup>13</sup>

The influential Group of Thirty, representing leading global financial institutions, weighed in on the matter of regulation in its 1993 report. Its conclusions may not come as a surprise given that the report committee was headed by the chairman of J.P.Morgan, a knowledgeable but hardly independent observer of the growing OTC market. Overall, the report urged governments to resolve various legal and regulatory uncertainties so that derivatives markets could thrive, and called on them to support swaps netting provisions (GDSD 1993: 20-21). The report was recognized at the time to be a straightforward call to minimize regulation for the OTC market (Wall Street Journal 7-22-1993: C1). On the other side of the controversy, the General Accounting Office (GAO) issued a report noting how concentrated and interconnected the OTC market had become, and drew out some unwelcome implications for systemic financial stability (Bowsher 1994a: 2). The report recommended that all major OTC derivatives market dealers be subject to federal regulatory oversight with respect to their soundness and safety. Within weeks of the release of the GAO report, ISDA issued a critical response that attacked the GAO's recommendations to increase regulation of the OTC market, which the GAO duly rebutted (Bowsher 1994b). But if the GAO won this particular rhetorical battle, it is clear that in the long run ISDA won the political war.

The push to consider regulation of OTC came to a head when the CFTC, under Chairperson Brooksley Born, issued a Concept Release published in the Federal Register on May 12, 1998. The gist of the release was foreshadowed in a number of Born's public speeches, so it wasn't a complete surprise. In March of 1997, she noted the rapid growth of OTC, but rather than conclude that this meant that the organized derivatives exchanges had been hobbled by regulation (with OTC exploiting its relative advantage), she underscored a strong public interest in the price-discovery function of exchanges, and pointed out that OTC both competed with the exchanges and also complemented them (Born 1997a). Then in April, she rejected arguments from the organized exchanges (e.g., CME and CBOT) that they suffered from competitive disadvantages in relation to foreign derivatives exchanges, and thus that they should be deregulated (Born 1997b).

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<sup>13</sup> Wendy Gramm later sat on the board of directors of Enron. She was married to Phil Gramm, a leading Republican politician and one of the foremost supporters in the U.S. Senate of financial deregulation.

The Concept Release stated the Commission’s belief that: “... it is appropriate to reexamine its regulatory approach to the OTC derivatives market taking into account developments since 1993” (Federal Register Vol. 63, No. 91, May 12 1998: 26115). It alluded to various financial scandals involving OTC derivatives and proceeded to note that the market had evolved in ways that undermined some of the justifications offered in 1993 for the regulatory exemption of swaps. In particular, some swaps had become highly standardized (in part because of the effect of ISDA Master Agreements). Furthermore, no capital requirements had been imposed on swap market participants and the CFTC wondered whether regulatory capital could serve a useful function in risk management. Finally, the CFTC observed that no recordkeeping or reporting requirements were imposed on OTC market participants, and that such lack of transparency might not be a good thing.

The opposition to these regulatory proposals was immediate and strong, and came even from within the regulatory community. Top officials from the Treasury department, Federal Reserve and SEC all registered their strong disagreement with Born’s Concept Release, and urged Congress to halt all regulatory moves by the CFTC (see New York Times May 8, 1998, D3).<sup>14</sup> They were supported by various OTC industry groups, including ISDA (Stout 2011). In June of 1998, Joseph Bauman (a managing director at Bank of America) testified before the House on behalf of ISDA and claimed that:

“... recent actions and statements of the CFTC culminating in its Concept Release concerning privately-negotiated swaps have undercut and imperiled the legal certainty that has until now existed for swaps through in large measure, the foresight and efforts of Congress. Moreover, the CFTC has sent a chill through this business by raising the specter that it may seek to impose new restrictions on privately-negotiated swap transactions. For these reasons ISDA wholeheartedly supports the proposal of the Treasury, Federal Reserve, and SEC that emergency legislation be enacted to preserve the current legal framework for swap transactions and the stability of these financial markets until you and your colleagues in the next Congress have the opportunity to renew your efforts to modernize the act.” (Bauman 1998).

Congress duly complied and so the CFTC was prevented from taking any further action with respect to OTC derivatives. Even the spectacular failure of LTCM in 1998 did not seem to give pause to the political push to deregulate financial markets. The April 1999 report of the President’s Working Group on the failure of LTCM mostly urged private parties to improve their own risk-management systems and increase transparency, although it did offer some weak suggestions for regulatory change and suggested that if matters didn’t improve it might consider closer regulation of hedge funds (PWG 1999a: 36-7,42). And as a corollary, the Counterparty Risk Management Policy Group, co-chaired by representatives from Goldman Sachs and J.P. Morgan, offered a set of suggestions in the wake of LTCM which it underscored were not to be taken as recommendations in favor of legal regulation (CRMPG 1999: 2,56).

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<sup>14</sup> Given the 1974 Treasury Amendment, opposition from Treasury and the Fed was unsurprising.



Facing widespread opposition, even from within the Clinton Administration, Born resigned from the CFTC and was replaced with the much more compliant William Rainer. The President's Working Group on Financial Markets issued another report in November of 1999. Signed by Secretary of the Treasury Summers, Fed Chairman Alan Greenspan, SEC Chairman Arthur Levitt, and CFTC Chairman William Rainer, this document repeated arguments about the "cloud of legal uncertainty" which had supposedly undermined the OTC derivatives market, directly criticized the Concept Release of 1998, worried very little about LTCM, and recommended that new statutory law definitively exclude swaps from regulatory oversight (PWG 1999b: 1,6,12). It also recommended that swaps be put safely beyond the reach of any state laws or regulations, as well (PWG 1999b: 16). Much of the 1999 report was incorporated in the Commodity Futures Modernization Act of 2000, which strongly protected swaps from regulation by either the CFTC or the SEC, or state law (FCIC 2011: 48). Furthermore, the act reduced the regulatory burden on the existing exchanges like the CME and CBOT by giving them greater self-regulatory power subject to "principles-based" regulations (Donohue 2007).

Following the precedent of the 1974 Treasury Amendment, OTC derivatives markets were established outside of the ambit of regulatory law, and through a succession of increasingly definitive regulatory and legislative measures, culminating in the CFMA of 2000, largely stayed that way. The regulatory asymmetry between exchange-traded and OTC derivatives helped to set the stage for the divergent experiences of 2008, where Lehman's failure unleashed chaos in the OTC market (Gorton 2010: 51), especially among CDSs, but produced only small ripple effects in the organized exchanges. But this repeated regulatory forbearance of OTC was hardly an accident, nor simply the reaffirmation of an initial decision. Rather, it was a very specific political outcome that, in the context of a growing OTC market, became increasingly difficult to reverse (even in the wake of the 2008 financial crisis). And what made this political outcome especially striking is that market incumbents were brushed aside politically and surpassed economically, despite the political clout and activism of the CME and CBOT, as well as their long-standing ties with their regulators and politicians.

### **Political Arguments and Political Clout**

Arguments about legal uncertainty were deployed during the political conflict about regulation of OTC. After the CFTC Concept Release, Joseph Bauman spoke on behalf of ISDA: "By issuing its concept release on swaps, the CFTC has ignored the goal of legal certainty established by this Subcommittee. ... The increase in legal risk that is occurring as the result of the CFTC's actions represents an unfortunate and unnecessary deterrent to firms like mine that offer swaps and an unequally unwelcome deterrent to end-user firms that should continue to benefit from these competition- enhancing risk management tools." (Bauman 1998). Then, before passage of CFMA, Bauman again warned about the seemingly precarious nature of certainty: "Any uncertainty with respect to the enforceability of swaps transactions obviously presents a significant source of risk to the individual parties to those transactions. More importantly, any such uncertainty creates risks for the financial markets as a whole and precludes

the full realization of the powerful benefits that swaps transactions provide.” (Bauman 1999: 2). Even the mere impression of legal uncertainty seemed to concern those who advocated for total non-regulation of OTC derivatives: the appearance of uncertainty was practically equated with uncertainty per se (see, e.g., PWG 1999b: 10,12,15,19,28, Rosen and Wachter 1999).

What is striking about all these arguments is that the definitive legal certainty that ISDA and other OTC market participants sought didn't arrive until after passage of the CFMA in 2000. And yet, prior to this date, when the OTC market was supposedly undermined by significant legal uncertainty, the market grew at an extraordinary rate. By ISDA's own estimate, the total notional value of all interest rate and currency swaps increased from \$865 *billion* in 1987 to \$63 *trillion* in 2000, a more than 72-fold increase. This does not look like a market seriously afflicted by uncertainty. Furthermore, although OTC participants opposed the idea of public regulation or oversight, they did develop extensive private regulation through organizations like ISDA. The OTC market was not anarchic: its constituent transactions, basic terms and procedures were made predictable through instruments like the ISDA Master Agreement, and that certainty was confirmed by expert opinions solicited by ISDA in different national jurisdictions. Regulation was fine for the OTC market so long as it was privately controlled and publicly vindicated.

The organized exchanges did not wring their hands about legal uncertainty, but they did worry about global competition and the extent of their regulatory burdens. In the deliberations that preceded CFMA, the CBOT and CME claimed that: “Today, the Swiss-German electronic exchange, called EUREX, has replaced the Chicago Board of Trade as the futures exchange with the highest trading volume. To address these threats, the Board of Trade and the Chicago Mercantile Exchange are restructuring and reorganizing their business operations to maximize the chances of capturing the benefits of new technology and innovations. We know we are in for a fight and we are willing to compete.” (Young 2000). Competing derivatives exchanges rose and fell in London and Germany, and although the Chicago exchanges continued to grow, the fate of the LIFFE's *bund* contracts reminded all that success was only provisional and that failure could be just around the corner. Of course, the starkest contrast was between the exchanges and OTC. In Senate testimony, U.S. futures exchanges collectively noted that: “Gross amounts outstanding in the OTC market was [in 1995] \$63.7 billion while the exchange-traded market was only one quarter of that -- \$16.3 billion. That the OTC market is four times the size of the exchange-traded market is not a surprise. The growth rate over the past five years for the swaps market has exceeded 500%, dwarfing the 54% growth rate of CBOT Treasury bond futures.” (Chicago Board of Trade et al. 1997). The exchanges sought a regulatory “level-playing field” in relation to their foreign and domestic competition.

Arguments about foreign competition certainly possessed political traction. U.S. politicians were easily swayed by the fear that jobs and market activity would drain overseas. And when Eurex threatened to open in the U.S. and start trading derivatives, the CME and CBOT were able to mobilize their political and regulatory allies and buy valuable time, delaying Eurex's arrival by many months. But arguments about domestic competition, in particular in

reference to OTC, did not succeed. And in this respect, the exchanges were undercut by a serious conflict of interest. The OTC and exchange derivatives markets were linked because some of the same institutions participated in both. A dealer-banker might enter into a customized swap arrangement with a customer, and then use exchange-based derivatives to hedge some of the risks it had taken on (Nystedt 2004: 7, 31). In fact, the small number of big dealer-bankers that formed the core of the OTC market were among the biggest customers of the CME and CBOT (Damgard 1998). As ISDA representative Joseph Bauman put it: “In addition, our members are among the principal customers of the regulated futures exchanges.” (Bauman 1999: 1). Politically, the CME and CBOT were hobbled by the fact that their most worrisome competitors were also their best customers! Ideologically, their close ties to University of Chicago economists like Milton Friedman (and others) made arguments in favor of increased regulation problematic, even when applied to OTC markets.

Graphs 2, 3, and 4 show that the three biggest participants in the OTC markets (according to data from the Office of the Comptroller of the Currency) were also very active in organized exchange derivatives. Given the difference in the relative sizes of these markets, J.P. Morgan, Citibank and Bank of America were clearly major players in both markets for a substantial period of time. Small wonder that the exchanges were unwilling to break with OTC and press vigorously for regulation of the latter. In fact, the exchanges and OTC institutions forged an informal political deal in which both supported deregulation for the exchanges and opposed any regulation for OTC. Given how important OTC institutions were to the exchanges, it was probably the best deal the latter could strike.

Without the opportunity to write or rewrite the regulatory rules, political deals to coordinate action would be inconsequential. Reauthorization of the CFTC has always offered a political opportunity to alter regulatory rules. And it is striking how often the CFTC has had to be reauthorized since its creation in 1974 (it is a “sunset agency,” unlike other federal regulatory agencies). It was reauthorized in legislation passed in 1978, 1982, 1986, 1992, 1995, 2000, and most recently in 2008. Mostly, the CFTC has been authorized for four years at a time, a period scarcely long enough to build up substantial bureaucratic capacity or autonomy, and certainly short enough to ensure that the CFTC is fully exposed on a regular basis to politically-mobilized interest groups. The CFTC has always been kept on a short political leash, and anyone unhappy with its performance knew that before long another reauthorization bill would make it vulnerable to political pressure through Congress.

In addition to opportunity and coordination, political efficacy requires resources. Early on the CME developed connections both to regulators and the politicians who sat on relevant Congressional oversight committees. It established a political fund to steer money to electoral campaign funds, and a Washington office to maintain a permanent presence in the capital. The dealer-banks that dominate OTC have also been politically active. The Center for Responsive Politics uses data from the Federal Election Commission to track all political contributions (greater than \$200) to U.S. federal elections (posted on [www.opensecrets.org](http://www.opensecrets.org)). According to

these sources, the financial sector as a whole (but not including real estate) contributed over \$238 million to federal candidates between 1990 and 2010. Institutions central to OTC were commensurately active over the same period: Goldman Sachs contributed over \$34 million, Citibank over \$28 million and JP Morgan Chase over \$22 million. Such evidence suggests that both the derivatives exchanges and OTC participants were able to use money to make their voices heard in Washington.

## Conclusion

The broad deregulatory trends that affected so many countries in the 1980s and 1990s also reshaped finance (Krippner 2011: 58-85). Much of the regulatory apparatus constructed in the U.S. during the 1930s to oversee banks and financial activities was weakened or simply abolished (witness the 1999 repeal of Glass-Steagal). And while previously regulated areas of finance saw their regulations weakened, entirely new areas of financial activity saw their publicly-unregulated status maintained and even strengthened. A regulatory apparatus designed to stabilize a bank-centric financial system, to protect retail investors, and to maintain order in financial markets dominated by equity and debt instruments simply did not evolve in response to disintermediation, globalization, financial innovation, the rise of institutional investors and the growth of new financial markets (Cartwright 2009, Davis 2009). If anything, it devolved.

These trends certainly encompassed OTC derivatives. Despite the historical stigma attached to speculation, and notwithstanding a number of highly publicized scandals and disasters that appeared to implicate OTC derivatives in one way or another, a powerful market-based financial constituency successfully fended off all regulatory attempts until the events of 2007-8. With the growth in size and profitability of the OTC market, the initial decision *not* to regulate became increasingly irreversible. A process of political “lock-in” changed the terms of the decision by creating a new constituency strongly opposed to regulation, whose power only grew over time. And even today, various provisions in the Dodd-Frank Act aimed at adding transparency and oversight to OTC derivatives have been met with stern resistance when it came to writing rules and implementing the new law (witness, for example, attempts to explain the financial crisis as resulting from too much, as opposed to too little, regulation).

Regulatory forbearance stemmed from a combination of political clout and economic ideology. The U.S. polity is notorious porous, and provides multiple veto points at which organized interest groups can apply political leverage. They can be particularly effective in maintaining the *status quo*. Furthermore, the limited authorization given to the CFTC meant that its regulatory mandate, and the rules promulgated to govern derivatives, returned repeatedly to the political agenda. Derivatives market players spread money around, built political alliances, and took full advantage of reigning neo-liberal economic doctrine. They also credibly raised the specter of regulatory arbitrage: globally mobile financial markets might shift from New York and Chicago to London or Frankfurt if regulation overseas was significantly less onerous. As the prevailing economic doctrine, neo-liberalism enjoyed well-placed advocates like Alan

Greenspan, who sincerely believed that private self-interest would combine with effective private risk management in financial markets to remove the need for public risk management or even public oversight. At key moments, he was joined by most other high-level officials and regulators (with the notable exception of Brooksley Born), and bolstered by the mainstream consensus within the economics profession (Tett 2010). Those who publicly raised doubts about the adequacy of private risk management were subject to heavy criticism, even if they were eventually proved right by events (e.g., Rajan 2005).<sup>15</sup>

The diverging fates of exchange-traded and OTC derivatives stemmed in part from historical contingency: OTC was established outside the existing national regulatory framework that encapsulated the organized exchanges, and benefitted from the inadvertent precedent set by the 1974 Treasury Amendment. The OTC market was highly concentrated among a small set of large financial organizations, which facilitated both formal and informal coordination in pursuit of collective private goals (like remaining unregulated) or in response to crises (e.g., LTCM). At the same time, the OTC market was chiefly domiciled in either London or New York, which always raised the prospect of flight to the other jurisdiction should regulation become onerous in either place.<sup>16</sup> Core OTC participants also had a significant presence on the derivatives exchanges, which severely undercut the ability of the CME or CBOT to push for regulation of OTC as a way to level the playing field between themselves and OTC. It proved too tough to lobby against one's own customers. Instead, a political alliance among the derivatives markets helped lead to the CFMA of 2000, which emphatically preserved the unregulated status of OTC and granted a measure of regulatory relief to the exchanges. But the divergence didn't stop there, because OTC markets were more adversely affected by the financial crisis of 2007-8 than were ET derivatives.

Lack of public regulation hasn't meant an absence of regulation. Like other markets, OTC market participants follow a set of rules. But rather than having publicly-determined rules (which might take into account the public interest in financial stability or reflect a broader set of stakeholders), OTC is guided proximately by private regulations that reflect private interests. Furthermore, these private institutions lack the coercive enforcement mechanisms that public regulators possess, and so they cannot always impose rules on their own members, either in relation to each other or between members and non-members (Awrey 2010: 184). The organizational locus for private governance is in this case ISDA. The rhetoric of legal certainty espoused by ISDA and others seemed to be motivated mostly by a desire on the part of OTC market participants to be certain that their market wouldn't be subject to public regulatory law, that there would be "regulatory voids." The point of legal certainty was to tie the hands of

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<sup>15</sup> Incredibly, although Rajan was then the Director of Research at the IMF, as well as a professor of finance at the University of Chicago business school, the IMF itself paid little heed to his warnings. See IEO 2011: 9-10.

<sup>16</sup> It is important to note that the mobility of economic activity between jurisdictions is not a brute fact of nature but rather the result of political and legal decisions that enable *ceteris paribus* comparisons and create the possibility of relocation. My thanks to Katharina Pistor for this point.

regulators and not necessarily to produce calculable law per se. Indeed, this kind of certainty set the stage for what might be called “evasive innovation”: innovation intended to circumvent static regulations. Otherwise, OTC participants were happy to be able to make things up as they went along, promulgating successive Master Agreements that reflected emerging market practices, supported new financial products, and addressed whatever problems they felt compelled to deal with. When it is to their advantage, OTC market participants have been eager to utilize statutory law, as when ISDA successfully lobbied countries to incorporate its “model netting legislation” into their national bankruptcy codes and privilege swaps participants over all other creditors involved in a corporate bankruptcy proceeding.

The events of 2007-2008 underscored some of the limits of private regulation. Gorton (2010) characterizes that period as akin to a bank run, with banks rather than depositors acting in panic mode. One of the factors setting off the panic was counter-party risk, supposedly mitigated in OTC markets by a combination of rating agencies and collateral (Kroszner 1999), but in fact magnified by a sense that opaque institutions backed by opaque assets of uncertain value and dubious liquidity were much too risky to deal with (Gorton 2010: 47). Banks stopped transacting with each other and previously liquid markets became illiquid. AIG’s inability to meet the requirements of its swap agreements and post more collateral in response to a ratings downgrade seemed to threaten systemic instability, mostly because it had become so important an issuer of unhedged CDSs. But rather than suffer the consequences of hard budget constraints, AIG was bailed out by the direct provision of liquidity from the Federal Reserve Bank (Mehrling 2011: 132-33). Much of the money then went to AIG’s various counter-parties, including large financial institutions like Goldman Sachs, Société Générale, Deutsche Bank, Barclays, and Merrill Lynch. In the depths of the crisis, privileged institutions gained access to precious liquidity, both directly and indirectly. Counter-party risk was not a problem for exchange-traded derivatives transactions because of the clearing arrangements that made the exchange itself the effective counterparty for each half of a transaction (Duffie 2012: 8).

Private regulation also suffered from its own lack of transparency and accountability. ISDA does not represent all stakeholders, and has no reason to concern itself with market failures, externalities, or systemic risk. Its activities are only partly visible, and there may be even less visible forms of informal private coordination that restrain competition and raise prices.<sup>17</sup> Public adversity that follows from the failure of private governance threatened the legitimacy of the latter as the externalities produced by systemic insolvency underscored the fact that a broader set of interests were at stake. However, powerful financial institutions were not easily tamed.

The final lesson offered by diverging derivatives reminds us that law is endogenous. Law may shape markets, but politics shapes law, and powerful market actors can use their political resources to shape law. As the economic landscape shifts, new economic interests arise and gain

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<sup>17</sup> See two articles by Louise Story, [New York Times](#), 12-10-2010, and 4-29-2011.

strength, and can even eclipse older incumbents. In this case, market actors shaped law so as to leave OTC derivatives as unregulated by public agencies as possible, subject only to private rules devised and imposed and revised by the private actors themselves. Although they deployed familiar arguments in favor of “legal certainty,” this mostly amounted to certainty in the protection of OTC derivatives from public regulation, even as the OTC market made use of contract law. Any discussion of the relationship between law and markets must necessarily include politics, and therefore recognize dynamic asymmetries of power between politicians, regulators, and market actors. Such power differences, which can change over time, ensure that law is not equally endogenous for all. For some, law really is a given constraint to which they are subject. But for the powerful, law is a malleable instrument to which they can subject their own, and others, actions.

### Methodological Note:

In addition to the materials cited in the references, this paper draws on a number of off-the-record interviews with former CFTC regulators and members of the CME leadership. Access to interviewees was granted on the grounds of strict confidentiality, so interviewees have not been quoted even anonymously.



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