

A Bill of Goods: CCPs and Systemic Risk

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CCPs: Here to Save the Day

- Since Financial Crisis I, central clearing of OTC derivatives has been advanced as linchpin of efforts to reduce systemic risk
- G-20 Commitments
- FrankenDodd and EMIR clearing mandates



Rationale

- One narrative of the financial crisis is that interconnections between SIFIs *via* derivatives transactions were a major channel of contagion that spread the crisis throughout the financial system
- Clearing would supposedly reduce interconnectedness and thereby reduce counterparty risk in derivatives markets



So Sayeth Gary Gensler

- CFTC Chairman Gary Gensler has been the most indefatigable advocate of this view
- OTC derivatives “have concentrated risks in a few big banks . . . through their interconnectedness”
- Clearing “[moves] transactions off the books of derivatives dealers, that . . . may be both ‘too big to fail’ and ‘too interconnected to fail’, and on to those of well-regulated CCPs”



More Gensler

- “Instead the clearinghouse stands behind it, and I think that’s what Congress recognized. Moving as much of this into clearinghouses lowers interconnectedness, but also says a clearinghouse stands there, not the taxpayer”
- Translation: CCPs are a magic box where risk disappears!



Not Really

- The reality of CCPs and their impact on systemic risk is much more complex and problematic than Gensler and other clearing boosters acknowledge
- CCPs will not reduce systemic risk as much as advertised, and create potential new vulnerabilities
- Ironically, regulators and legislators have been so focused on derivatives that they have ignored systemic responses to their interventions



Clearing Basics



What Do CCPs Do?

- CCPs perform a variety of functions, including:
 - Netting of exposures
 - Collateralization via initial margin and frequent variation margin postings
 - Mutualize credit losses not covered by collateral
- All of these functions *redistribute* risk and also affect the vulnerability of the financial system to big shocks



Clearing privileges derivatives in many ways that have important implications for systemic risk

NETTING, MARGINING AND PRIORITY



Netting & Margining Affect Priority

- Multilateral netting *via* clearing can reduce credit exposures
- Crucially, netting increases the fraction of promised payments that a defaulter's *derivatives CPs receive*
- Similarly, more extensive collateralization increases the fraction of promised payments that a defaulter's derivatives CPs receive



Reduction—Or Redistribution?

- In other words, clearing moves derivatives CPs (who are already advantaged under safe harbors in bankruptcy law) even closer to the front of the creditor line in the event of bankruptcy
- But giving derivatives CPs seniority necessarily demotes somebody else
- No guarantee that this alteration of seniority reduces systemic risk because those who are pushed back in line may be systemically important too



An Unintended Consequence

- Increasing amount derivatives CPs receive in default reduces the amount other creditors receive (holding capital structure constant—a caveat that I will revisit)
- The “losers” could be systemically important
- For instance: money market funds holding SIFI short-term debt. Bigger losses on this debt could induce a destabilizing run on money market funds



Known Unknowns: Capital Structure

- But the world won't stand still in response to a reordering of the seniority of claims
- Firms will adjust capital structures and debt and equity will be repriced in complex and unpredictable ways
- Unknowable whether these new structures will be more or less fragile and systemically risky



Known Unknowns: Derivatives Exposures

- Clearing mandates will also affect total derivatives risk exposures
- Indeed an advocate of clearing (Peter Norman) says that clearing tends to lead to increases in derivatives positions
- Somehow I doubt that is true intent behind mandates



Margining mechanisms can affect stability in highly deleterious ways

MARGINS, LIQUIDITY, AND SYSTEMIC RISK



Collateral: A Panacea?

- Advocates of clearing repeatedly invoke increasing collateralization under CCPs as their main contribution to improving stability by reducing leverage in derivatives markets
- I've just discussed one problematic aspect of collateralization, but there are others
- In particular, margin procyclicality, variation margin dynamics, and the funding of collateral can all be destabilizing



Collateral and Priority

- Like netting, collateralization has distributive effects
- CCPs have a secured/collateralized claim on a defaulter's assets
- Higher likelihood CCPs get paid in full means lower likelihood other creditors do
- CCPs are fighting like hell to protect this position:
e.g., opposing including CCPs in “bail ins”



Procyclicality

- CCPs typically use VaR-like methods to set initial margin levels
- These methods typically update risk parameters on a relatively frequent basis: proposed CFTC rule would require frequent updating of parameters
- This creates a highly dangerous positive feedback loop: greater price movements \Rightarrow higher IM \Rightarrow position liquidations (often in illiquid markets) \Rightarrow big price moves \Rightarrow higher IM



Procyclicality in IM is Destabilizing

- The destabilizing effect of procyclical margining has long been known
- It is a common feature of virtually all market crises
- All markets, including OTC derivatives, tend to rely on procyclical margining methods (think AIG, MFG), but clearing the vast number of trades through a small number of CCPs using similar margining methods is likely to exacerbate this procyclicality



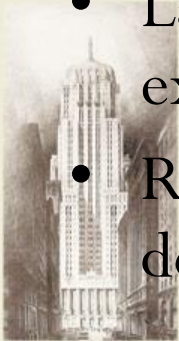
Variation Margin Dynamics

- Big price moves lead to big mark-to-market changes lead to big variation margin calls
- These VM calls can stress funding liquidity greatly
- Classic example: 1987 Crash, which brought the CME and CBT clearinghouses, and the OCC, to the brink of collapse
- Another '87 Crash lesson: the failure of the Hong Kong clearinghouse due to the inability of traders to meet VM obligations



Funding VM Shocks

- Big VM obligations can lead to fire sales, and not just of the affected derivatives
- These fire sales likely to occur when markets are illiquid: another positive feedback loop
- The effect exists in OTC markets too, but the process is much more rigid and correlated when clearing predominates, especially with clearing dominated by a small number of CCPs
- Lack of hypothecation in CCPs (in contrast to bilateral CSAs) exacerbates this problem
- Rigid CCP VM creates the “tight coupling” that is very destabilizing in complex systems like a financial market



Where Does Collateral Come From, Daddy?

- Clearing mandates (esp. when combined with Basel liquidity requirements) will dramatically increase the need for assets that can be posted as collateral: where are they going to come from?
- Financial engineering: Gorton has shown persuasively that the need for assets that could be used for collateral was a major impetus for structuring and securitization, which led to the creation of instruments that were extremely vulnerable to tail risks
- There will be intense pressure on CCPs to expand the set of eligible collateral to include riskier, more difficult to value, and more informationally sensitive assets. This will increase CCP risk, and vulnerability to adverse selection



Collateral Segregation

- MF Global, Lehman Brothers, and Pergrine, and pressures from the buy side, are leading to increasingly stringent means of segregating collateral, and a move away from the “futures model” that shares risks among customers.
- This fundamentally alters the allocation of default risks and will tend to increase collateral levels and/or default funds.
- Systemic implications of this are ambiguous.



Capital Structure Again

- Clearing mandates reduce the amount of credit extended *through derivatives trades*, but firms can use the debt capacity and regulatory capital freed up to replace the lost leverage: it is by no means obvious that the net effect of mandates will be to reduce leverage overall, or to reduce the fragility of those leverage structures: Modigliani-Miller lives
- We are already seeing the development of new financing structures (“collateral transformation”) in response to clearing mandates. These structures are heavily reliant on repo mechanisms that are extremely fragile during periods of market stress. Again: look at MFG.



CCP Liquidity Needs

- In the event of a member default, CCPs need to have access to liquidity to make VM payments to non-defaulting winning positions.
- Esp. if it has expanded collateral to include less liquid assets, CCP may face a fire sale problem.
- Liquidity backstops (e.g., credit lines) can potentially create wrong-way risks if these are funded by banks, and are a source of interconnection between the CCP and the banking system: a potential vector of contagion.
- Potential need for direct or indirect access to central bank liquidity, but this runs into political obstacles due to bailout-a-phobia.



Mutualization via CCPs will impose losses on SIFIs precisely when they can least afford it

MUTUALIZATION



Mutualization

- Mutualization is a well-known way of allocating idiosyncratic risks in an efficient way
- If the collapse of a big CCP CM is an idiosyncratic event (due, for instance, to an operational risk), then mutualization can enhance stability
- But mutualization does *not* work when risks are systematic, i.e., when a common shock hits all big financial firms (perhaps to differing degrees)



Mutualization: Loading on Wrong Way and Systematic Risks

- CCP “waterfalls” make default fund capital very similar to senior pieces of CDOs
- It is well-known that these structures load on systematic risk: they perform very badly during large, market-wide shocks: major correlation risk
- Indeed, losses will hit the mutualization pool precisely when CMs are under financial stress: this is a major wrong-way risk
- Default fund capital is therefore extremely expensive



Mutualization IS Interconnection

- Even if a CCP survives the default of one or more large CMs, it forces losses on large financial entities precisely during times of intense market stress
- The CCP default fund connects financial firms, and this connection kicks in *precisely* during times of systemic stress
- The obligation of CMs to replenish default fund exacerbates this problem
- It is therefore highly misleading to tout CCPs as something that insulates SIFIs from one another during a crisis: instead, it is exactly at such times that CCPs can serve to communicate shocks between them



CCPs can fail, meaning that a resolution regime may be necessary. But making CCPs invulnerable can create its own systemic risks.

CCP FAILURE



CCPs Can Fail

- There have been some CCP failures-Caisse de Liquidation, Malaysia, and esp. Hong Kong.
- There have been some near failures-CME, CBT in '87.
- Failure of a large CCP would be catastrophic.
- Need to design a resolution mechanism that ensures continuity of operation (esp. given the mandate that many derivatives be cleared) and allocates losses in a systemically sensible way



When the Levee Breaks

- Concerns about CCP failure will inevitably lead to initiatives to make them nearly failsafe.
- But remember: this reallocates risks, and not necessarily in a good way.
- Analogy: building up the levee in one place increases the risk of flooding in other places.
- Again: need a systemic, not single institution-focused, appraisal of measures intended to protect CCPs.



An intense focus on derivatives as a source of systemic risk has ironically led to a widespread neglect of the systemic effects of clearing mandates

THE NEED FOR A SYSTEMIC APPROACH TO SYSTEMIC RISK

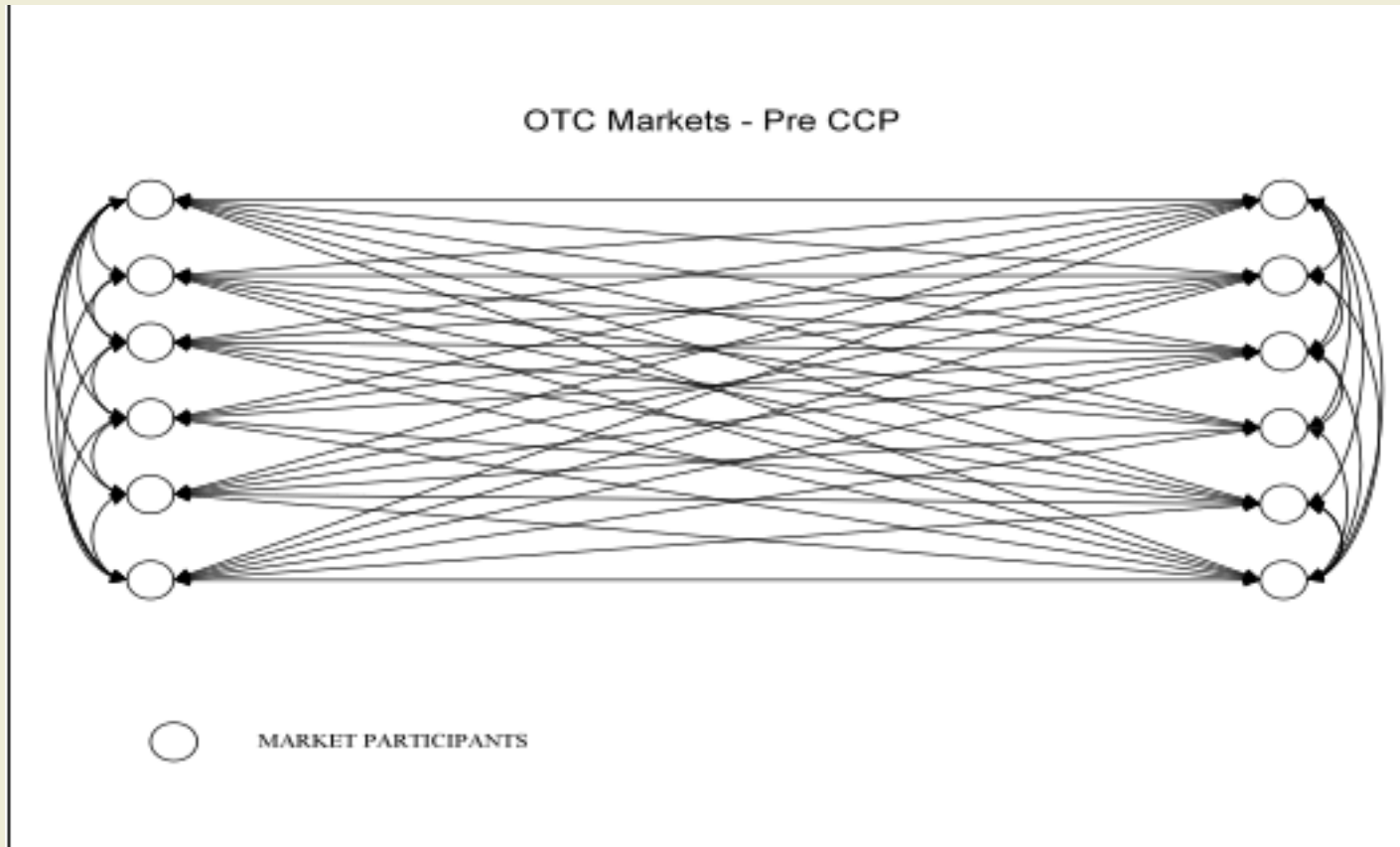


Every Picture Tells a Story

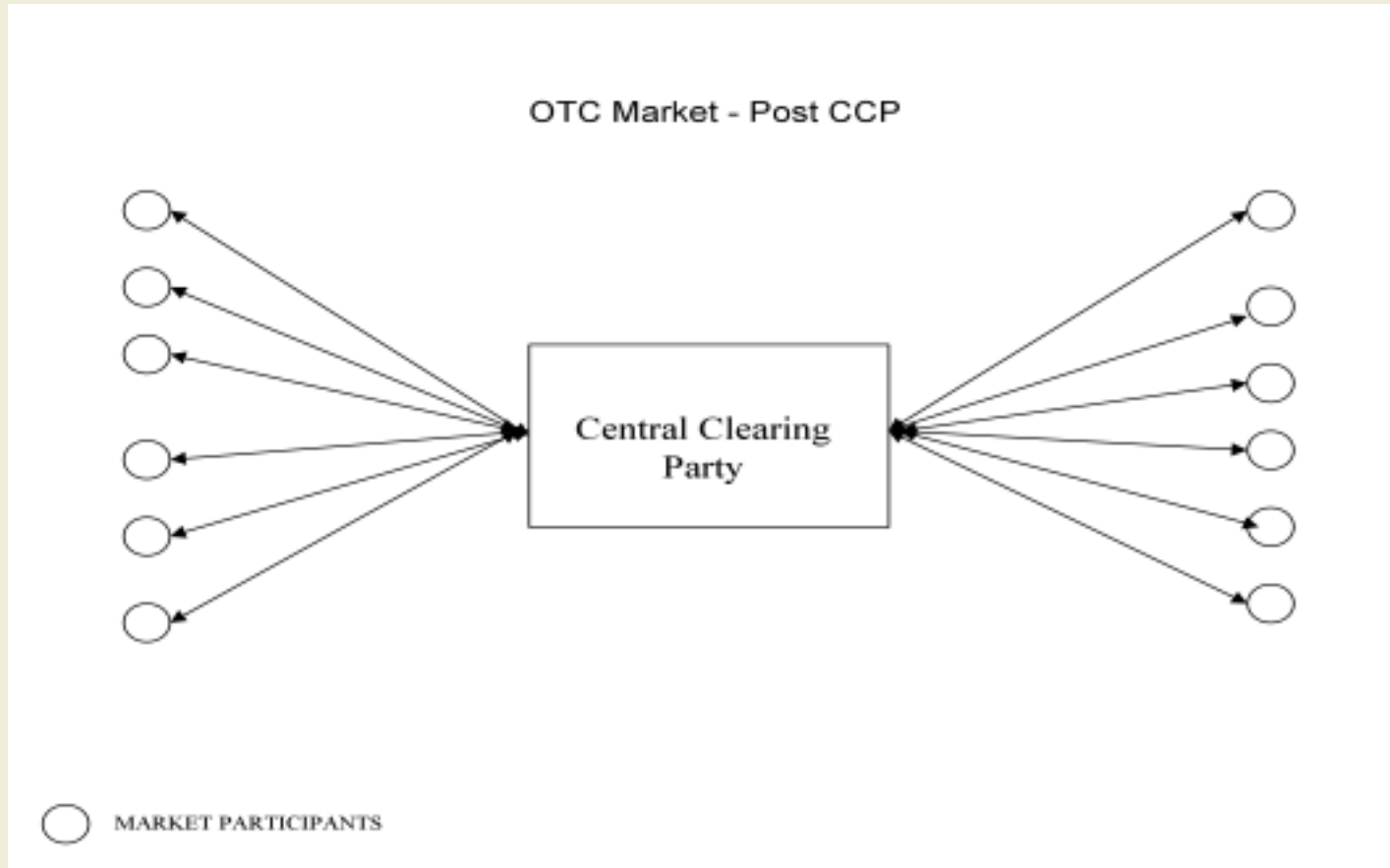
- The case for clearing is often represented in two diagrams
- The message behind the diagrams is that clearing makes the financial system simpler, less interconnected, and safer



Picture I: The Messy Bilateral World



Picture II: The Neat Cleared World



But Sometimes the Picture is Deceiving

- This is one of those times
- The message behind the diagrams is that clearing makes the financial system simpler, less interconnected, and safer
- Alas, the world is not anywhere near that simple
- Post-mandates, *the world will still look like Picture 1*: SIFIs will still be linked by a dense set of bilateral links, and SIFIs will be linked to myriad investors and “end users” by another dense set of links



How Will the Network Change?

- Recent research shows that systemic risk in a network is very sensitive to its configuration, and has a “knife edge” property
- Mandating a change in the network (CCP mandates, collateral mandates) will lead to a host of changes to the network
- Understanding the effects of mandates on systemic risk requires an understanding of these follow-on effects
- Given the importance of liquidity and contagion in driving crises, the focus should be on how mandates change the network of funding relationships



Systemic Responses Will Determine Systemic Risks

- Clearing mandates will lead to an endogenous and pervasive reconfiguration of these links
- Financial contracts & capital structures will adjust in unpredictable ways: this effect will be systemic, and affect systemic risk
- Regulators' and legislators' monomaniacal focus on derivatives as a source of systemic risk has ignored these endogenous responses to their sweeping attempts to reengineer financial markets
- And that is the biggest systemic risk of all



Taking a Truly Systemic Approach

- When evaluating regulations regarding a particular piece of financial infrastructure, like CCPs, it is essential to ask: “How will market participants respond to this change? How will the system adapt? Will these adaptations undermine the goal of this particular regulation? What new vulnerabilities will arise as a result of this change?”
- Beware the fallacy of composition.

