



University of  
Zurich<sup>UZH</sup>

Institute of Law

# Derivatives and Central Clearing

International Financial Law

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26 March 2026

Lecture Session 6



## Goals

- Overview of derivatives and their usage
- Explain clearing and when derivatives are cleared
- Discuss the financial crisis and the impact of derivatives
- Outline the global reform objectives and select national approaches
- Discuss benefits and limitations of derivatives being cleared



## 3 Stages of Securities Transactions

- **Trading**
  - Parties agree to a trade (on exchange, trading platforms or bilateral/off exchange) – contract formation

### Post-trading ('the plumbing of financial markets'):

- **Clearing**
  - ensuring that parties fulfill obligations under contract
  - 'matching a buyer for every seller and a seller for every buyer in a securities transaction'
- **Settlement**
  - Delivery of securities for payment (D v P)
  - 'irrevocable delivery of a security in a transaction for payment (usually cash)'



## Historical Context – a Review

- Collapse of Bretton Woods (currencies float).
- 1974 - collapse of Bank Herstatt and Franklin National Bank
- Growth of derivatives activity (to hedge & speculate against forex):
  - Euro currency markets and US dollar reserve currency
  - Technology advances and financial innovation
  - Growth of regulation and credit risk transfer instruments (CDS and securitization)



## What is a derivative?

- Latin «derivare», English «to derive»
- Agreement between a buyer and seller (counterparties),
  - Based on the future performance of an item (underlier),
    - On or before a certain date (maturity).
- Value derives from an underlying
  - Derivatives are specific types of instruments that derive their value over time from the performance of an underlying asset: e.g. equities, bonds, commodities.
  - Most common: shares, commodities, interest rates and indexes



## What are derivatives used for?

- Purpose of Derivatives
  - Hedging
    - Market Risk → Exposure to market movements
    - Credit Risk → Exposure to counterparty default
  - Speculation
  - Arbitrage
- Settlement of Derivatives
  - Cash Settlement
  - Physical Settlement (delivery of the underlying asset, e.g. commodities)
    - Delivery versus Payment (DvP)



## What types of derivatives exist?

– Two main types of derivatives

– Financial Derivatives

**Forward**

- Buyer obligated to purchase underlier from seller at specified price on specified date

**Future**

- Standardised forward contract, exchange traded, guarantee fulfilment

**Option**

- Grants holder the right – not obligation – to buy or sell at specified price on or before future date

**Swap**

- Agreement to exchange future cash flow

– Credit Derivatives

**Credit Default  
Swaps**

- «Insurance Derivative»: Protection seller agrees to cover spread if value decreases due to credit event



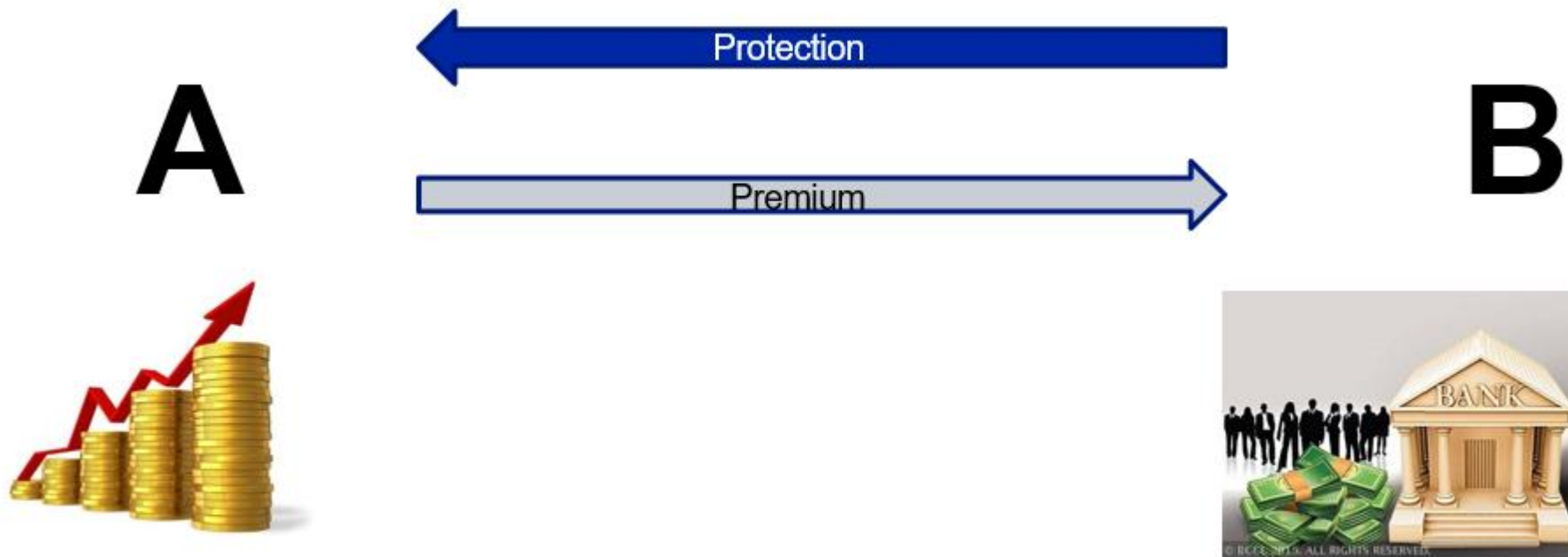
## Where can you trade derivatives?

- Exchange Traded Derivatives (ETD)
  - Laws of the Exchange
    - Liquidity → Demand
    - Standardisation
    - Transparency
- Over-the-Counter Derivatives (OTC)
  - No regulation, private law only
    - Bilateral Contracts
    - Bespoke



## How does bilateral clearing work?

- Bilateral Derivatives Transaction





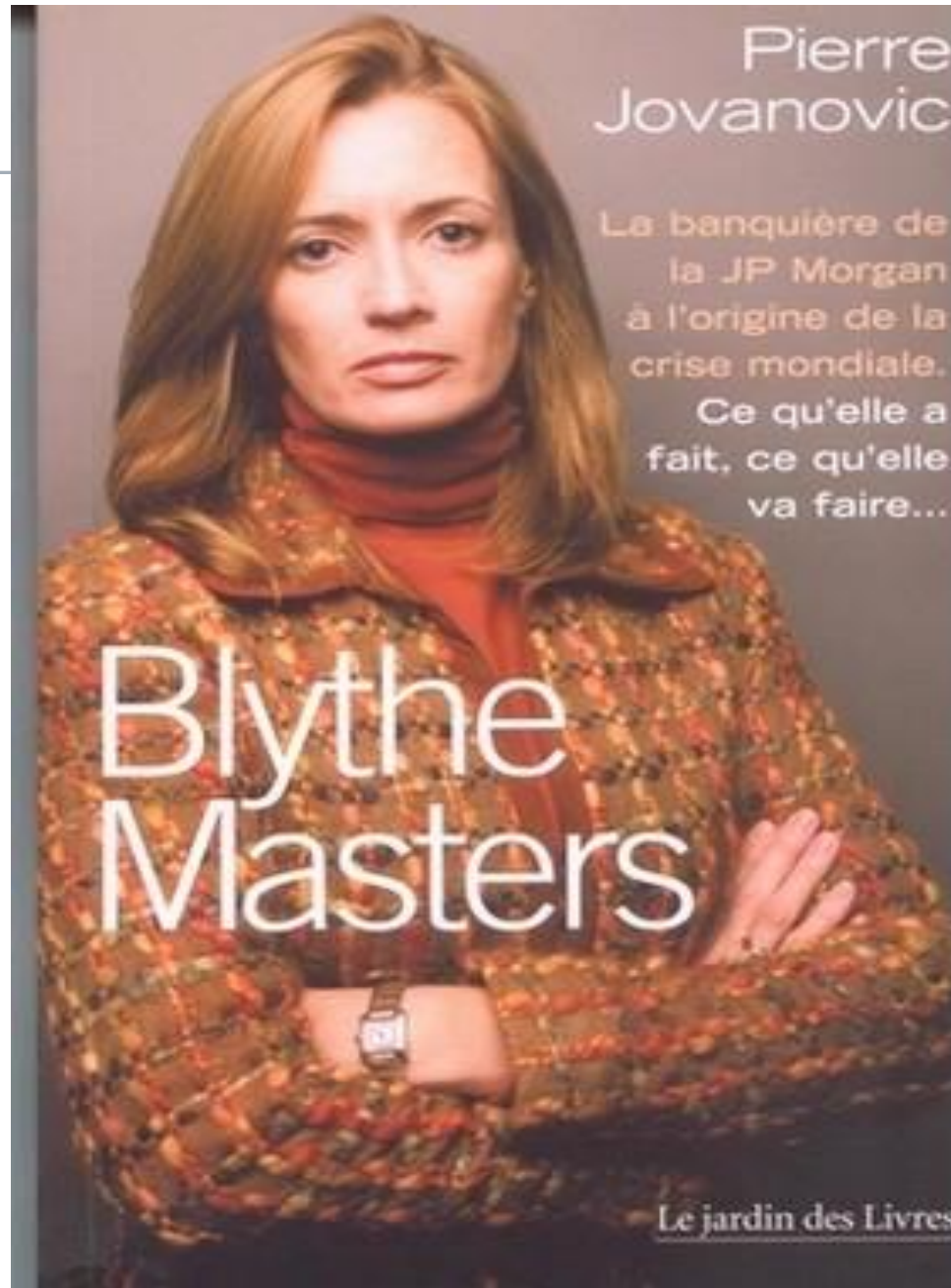
## Derivatives Regulation: pre-crisis

- Exchanges legally regulated
- Lack of state-actor legislation for OTC market
- International Swaps and Derivatives Association (ISDA)
  - Non-governmental actor, monopolistic private regulator
  - ISDA Master Agreements («boilerplate» contractual terms)
    - Provide global standard contracts to promote global enforceability and risk reduction
    - National adaptation possible



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Pierre  
Jovanovic

La banquière de  
la JP Morgan  
à l'origine de la  
crise mondiale.

Ce qu'elle a  
fait, ce qu'elle  
va faire...

Blythe  
Masters

Le jardin des Livres

Pierre Jovanovic

Blythe  
Masters

Avec d'autres mathématiciens de la JP Morgan Bank, l'Anglaise Blythe Masters a mis au point la formule magique qui a transformé le papier en or et qui a rendu les banquiers complètement fous.

Inconnue du public, Blythe Masters est pourtant, selon la formule consacrée du Guardian de Londres "la femme qui a inventé les armes financières de destruction massive". Selon Newsweek, ces armes ont "libéré un monstre" qui est toujours en train de détruire l'économie mondiale, jusqu'à l'inévitable banqueroute universelle.

En effet, les banques cachent encore une très grande partie des 55.000 milliards de dollars d'emprunts toxiques qu'elles ne reverront jamais dans leurs bilans.

Le journaliste Pierre Jovanovic retrace dans ce livre comment le destin hors du commun de cette jeune diplômée de Cambridge a involontairement croisé celui de centaines de millions de personnes, mises au chômage par les effets de la crise, simplement parce que tous les banquiers de la planète ont écouté, fascinés, son Évangile des Credit Default Swaps au point qu'ils ont fini par copier et abuser de sa formule "magique". Formule qui les mène, en ce moment même, à leur perte.

**Une enquête incroyable et implacable qui révèle comment les banquiers arrogants et stupides ont transféré les pertes issues de leurs actions irresponsables sur le portefeuille de chaque contribuable, dont le vôtre.**

Le jardin des Livres

ECONOMIE

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[www.jovanovic.com](http://www.jovanovic.com)

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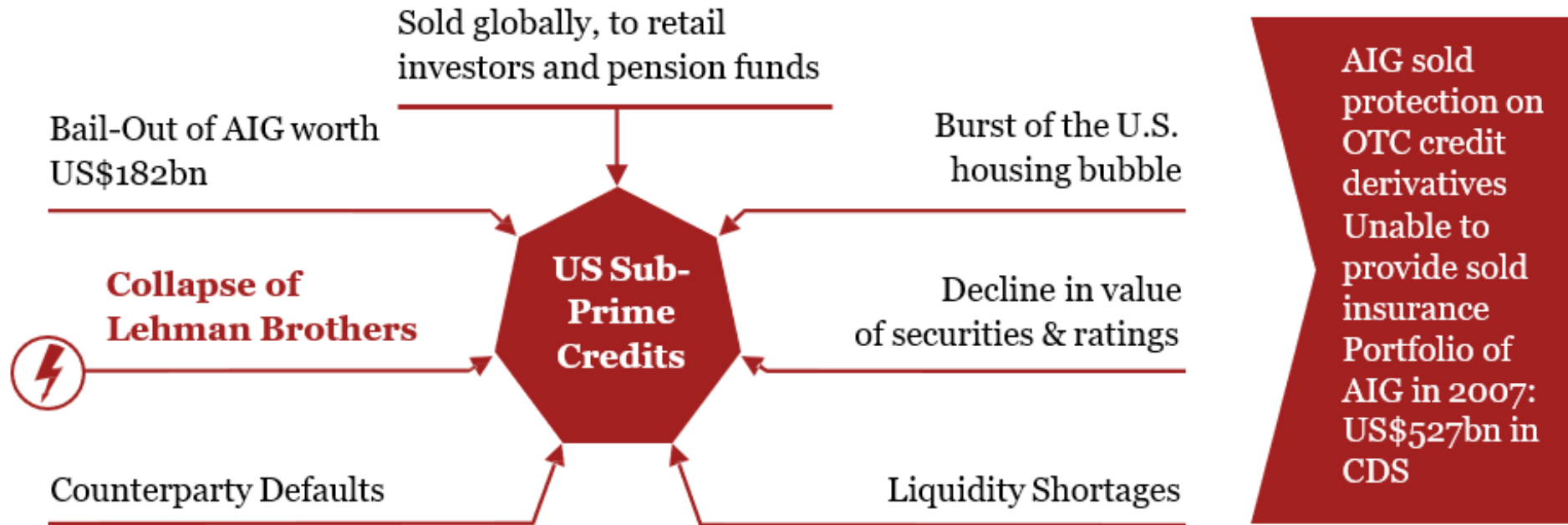
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## The Financial Crisis of 2007-2008

- No regulation of OTC Derivatives in US or EU; ETD regulated by exchanges
- International Swaps and Derivatives Association (ISDA) as monopolistic private regulator, providing “ISDA Master Agreements” with boilerplate contractual terms.
- This promotes global enforceability and the cross-border sale of OTC derivatives





## Derivatives & the Financial Crisis

- U.S. sub-prime credits
- Selling credit derivatives to unsuspecting individuals and pension funds
- Decline in value of securities and ratings, liquidity shortages
- Lehman Brothers collapse
  
- AIG bail-out
  - Sold protection on OTC-credit derivative market to key players
  - Unable to provide the insurance when needed
  - Portfolio of \$527 billion in Credit Default Swaps (CDS) when the market collapsed in 2007/2008
  - Troubled Asset Relief Program: US\$ 182 billion bail-out



## Derivatives Regulation Reform – G20 2009

### G20 Pittsburgh Summit (2009):

“Improving over-the-counter derivatives markets: All **standardized** 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.”

- Increase standardisation and trading on regulated platforms
- Clearing mandate for standardised OTC derivatives
- Reporting obligations for all derivatives
- Higher collateral requirements for non-centrally cleared derivatives



### Contagion

- Bilateral markets unable to monitor and assess counterparty credit risk
- Prevent contagion if counterparty defaults



### Lead by Example

- CCP (LCH.Clearnet) performed well during crisis, while bilateral markets failed to cope
- Clearing to prevent future financial crisis from OTC derivatives



## Reasoning for Central Clearing Mandate

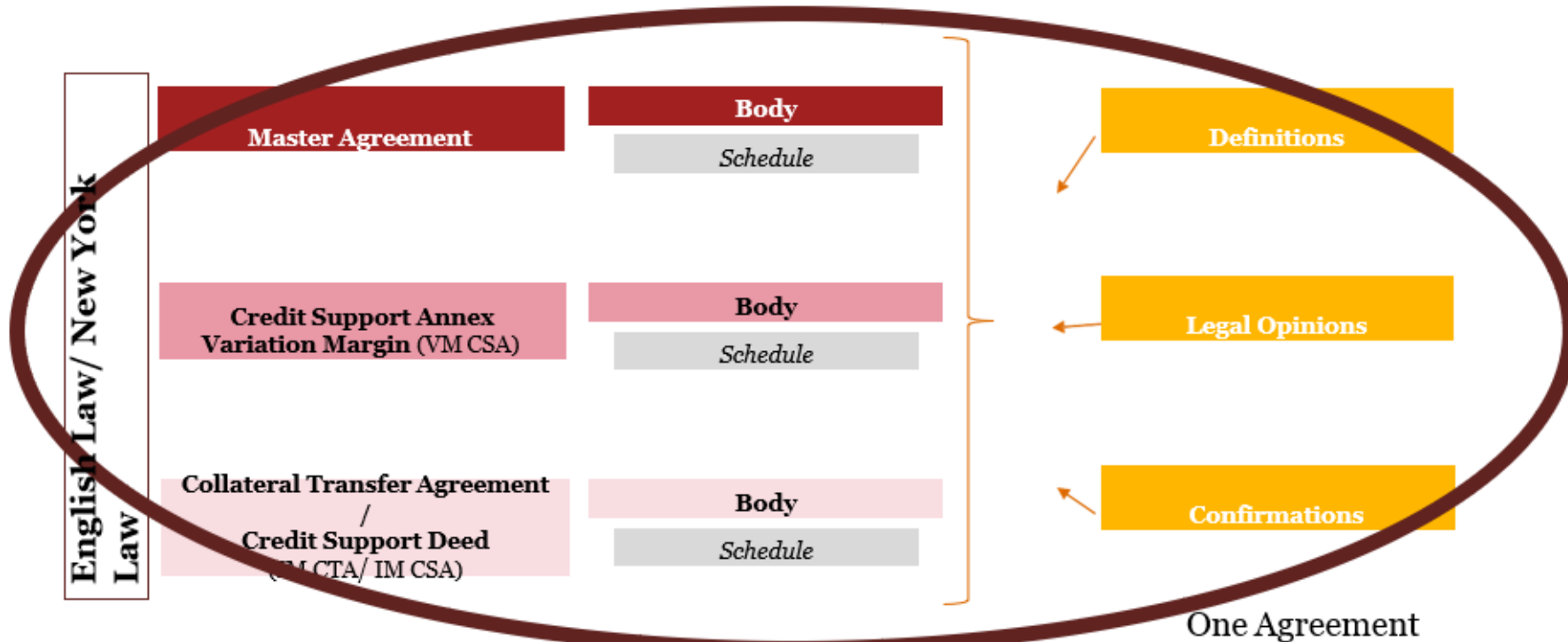
- Bilateral markets cannot be trusted in monitoring counterparty credit worthiness
  - Prevent contagion if counterparties do not fulfil their obligations
- Infrastructures providing CCP clearing performed well during the crisis, while bilateral OTC markets did not
  - As many OTC derivatives as possible should be cleared



## Case Study

### ISDA Master Agreements: Introduction

- ISDA Master Agreements is the most commonly used master agreement for OTC derivatives.
- Consists of a **boilerplate Body** and an **amendable Schedule**, plus **various Annexes**.
- Counterparties **only negotiate the Schedule** part of any Document.





# ISDA®

International Swaps and Derivatives Association, Inc.

## 2002 MASTER AGREEMENT

dated as of [insert date of execution]

[your legal name] and [name of counterparty]

have entered and/or anticipate entering into one or more transactions (each a "Transaction") that are or will be governed by this 2002 Master Agreement, which includes the schedule (the "Schedule"), and the documents and other confirming evidence (each a "Confirmation") exchanged between the parties or otherwise effective for the purpose of confirming or evidencing those Transactions. This 2002 Master Agreement and the Schedule are together referred to as this "Master Agreement".

Accordingly, the parties agree as follows:—

### 1. Interpretation

- (a) *Definitions.* The terms defined in Section 14 and elsewhere in this Master Agreement will have the meanings therein specified for the purpose of this Master Agreement.
- (b) *Inconsistency.* In the event of any inconsistency between the provisions of the Schedule and the other provisions of this Master Agreement, the Schedule will prevail. In the event of any inconsistency between the provisions of any Confirmation and this Master Agreement, such Confirmation will prevail for the purpose of the relevant Transaction.
- (c) *Single Agreement.* All Transactions are entered into in reliance on the fact that this Master Agreement and all Confirmations form a single agreement between the parties (collectively referred to as this "Agreement"), and the parties would not otherwise enter into any Transactions.

### 2. Obligations

- (a) *General Conditions.*
  - (i) Each party will make each payment or delivery specified in each Confirmation to be made by it, subject to the other provisions of this Agreement.
  - (ii) Payments under this Agreement will be made on the due date for value on that date in the place of the account specified in the relevant Confirmation or otherwise pursuant to this Agreement, in freely transferable funds and in the manner customary for payments in the required currency. Where settlement is by delivery (that is, other than by payment), such delivery will be made for receipt on the due date in the manner customary for the relevant obligation unless otherwise specified in the relevant Confirmation or elsewhere in this Agreement.

International Finance Law

Header  
Only adjustment to Body

Governing Law selected  
in Schedule.  
All Annex follow  
governing law of MA.

### 13. Governing Law and Jurisdiction

- (a) *Governing Law.* This Agreement will be governed by and construed in accordance with the law specified in the Schedule.
- (b) *Jurisdiction.* With respect to any suit, action or proceedings relating to any dispute arising out of or in connection with this Agreement ("Proceedings"), each party irrevocably:—
  - (i) submits:—
    - (1) if this Agreement is expressed to be governed by English law, to (A) the non-exclusive jurisdiction of the English courts if the Proceedings do not involve a Convention Court and (B) the exclusive jurisdiction of the English courts if the Proceedings do involve a Convention Court; or
    - (2) if this Agreement is expressed to be governed by the laws of the State of New York, to the non-exclusive jurisdiction of the courts of the State of New York and the United States District Court located in the Borough of Manhattan in New York City;



## International Development

- Objectives of the G20:
  - Internationally harmonised development
  - No room for arbitrage
- Reality:
  - U.S. took the lead with Dodd-Frank-Wall Street Reform and Consumer Protection Act (Dodd-Frank) in 2010
    - Strong extra-territorial application
  - Other countries adopted U.S. equivalent norms
  - EU followed with EMIR in 2012, EMIR 2 (2017) and EMIR 3 (2024)
    - Extra-territorial application
- Political stalemate between U.S. and EU on equivalence over derivatives reform (2018)

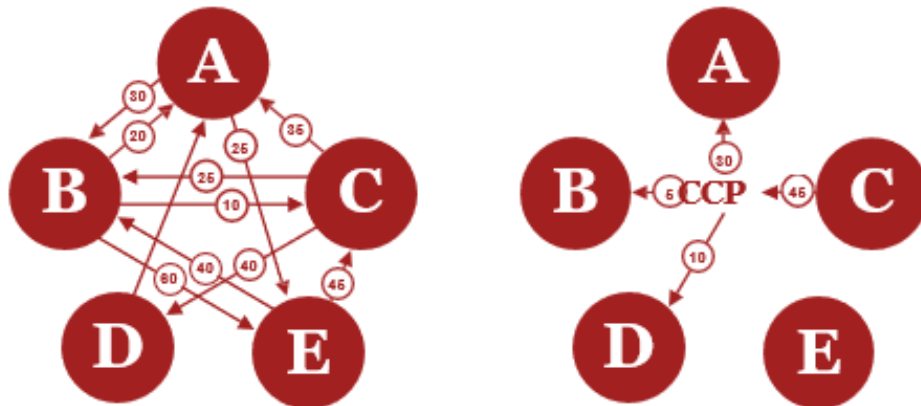


## Central Clearing

### What is it?

- “Clearing” is a procedure, where a Central Counterparty (CCP) acts as intermediary and assumes the role of buyer and seller for transactions to settle orders between transacting counterparties.
- The CCP becomes buyer to every seller and seller to every buyer through the process of “novation”.

#### Netting



#### CCP Function



Confirma-  
tion



Counter-  
party Risk

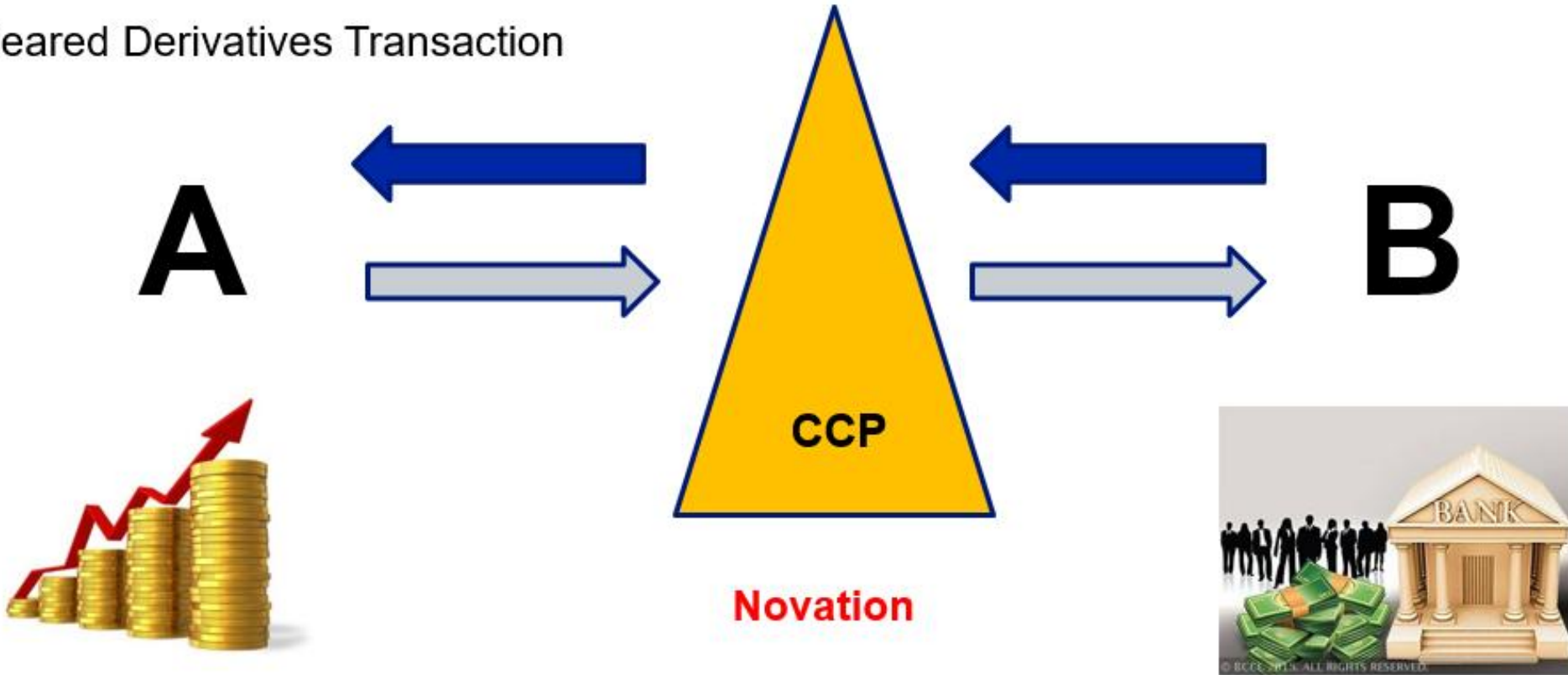


Mutuali-  
sation



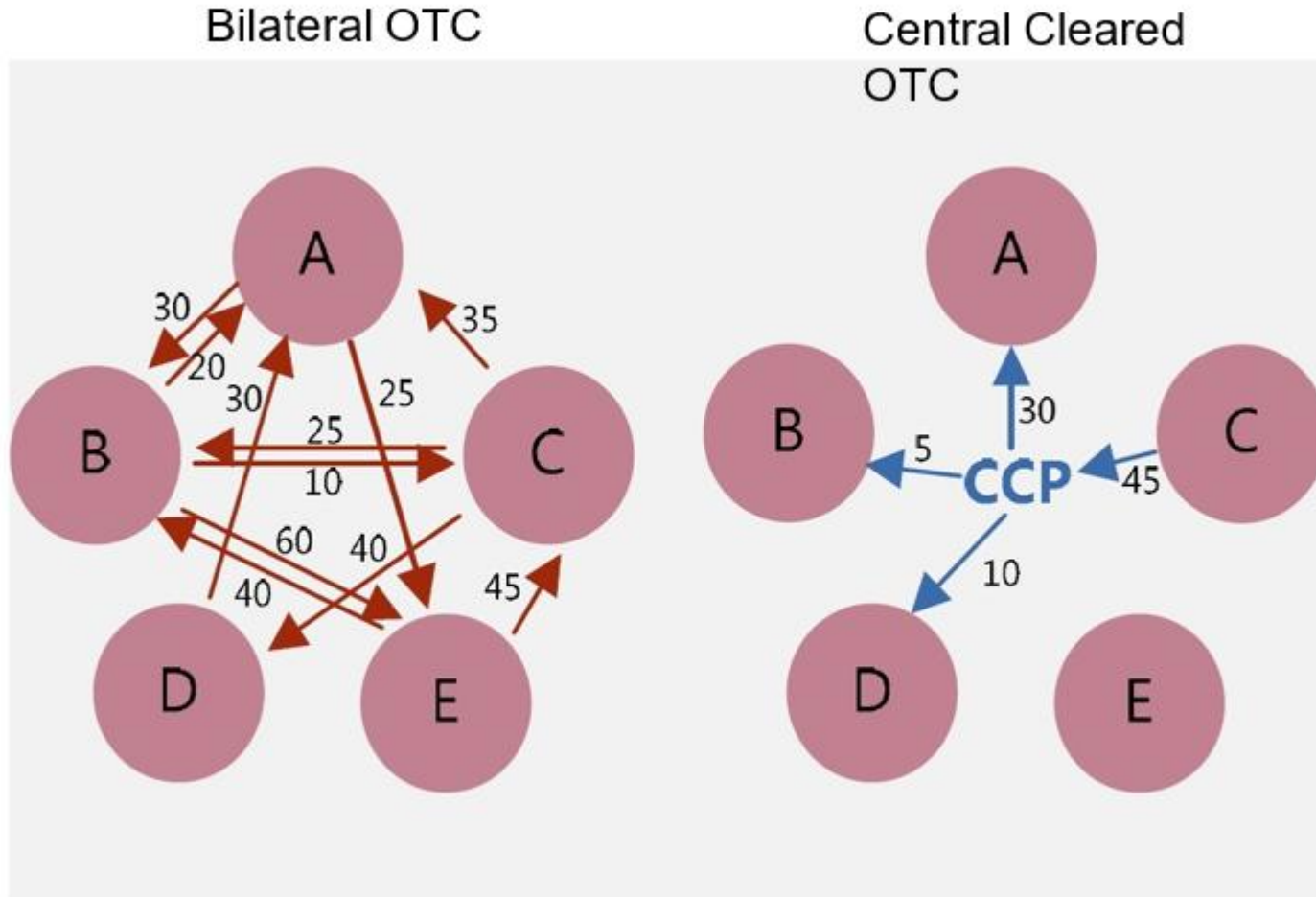
## How does central clearing work?

Cleared Derivatives Transaction



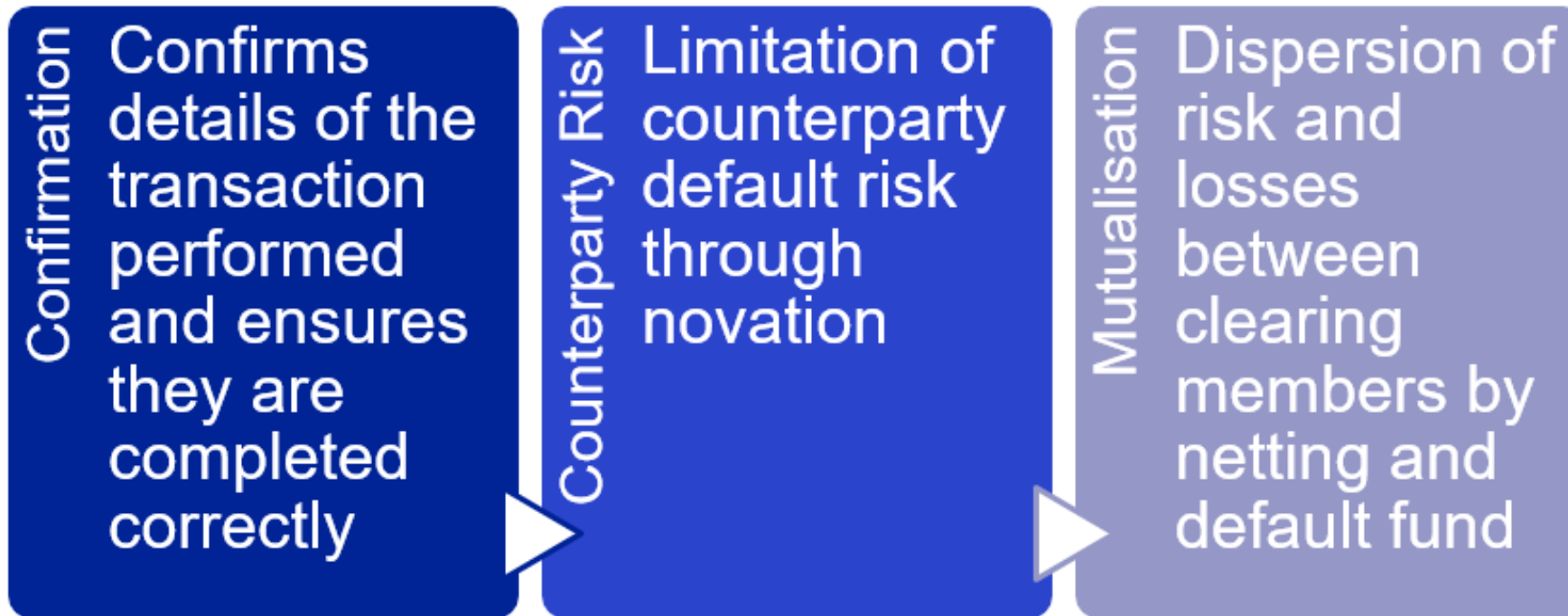


# Netting



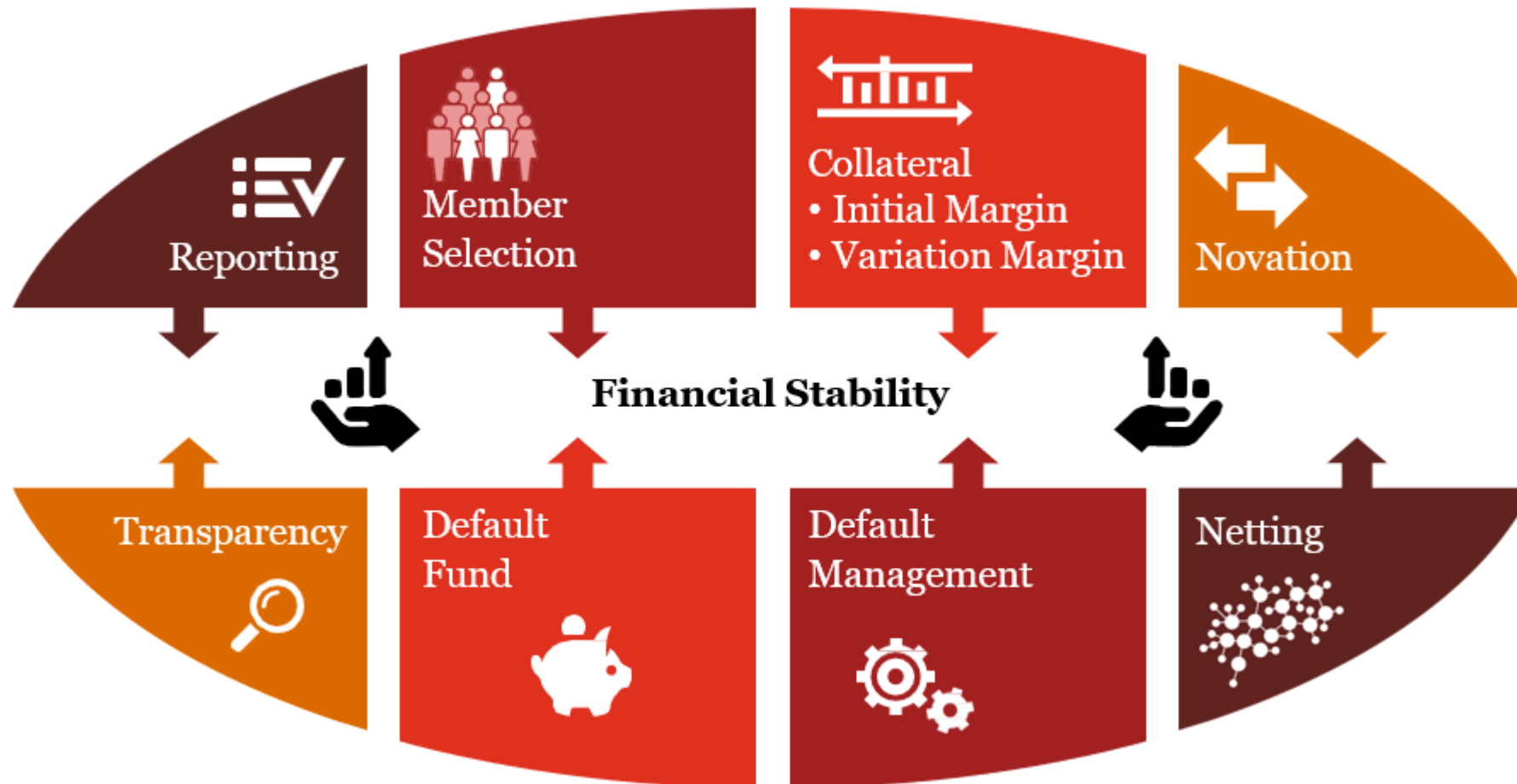


## CCP Functions



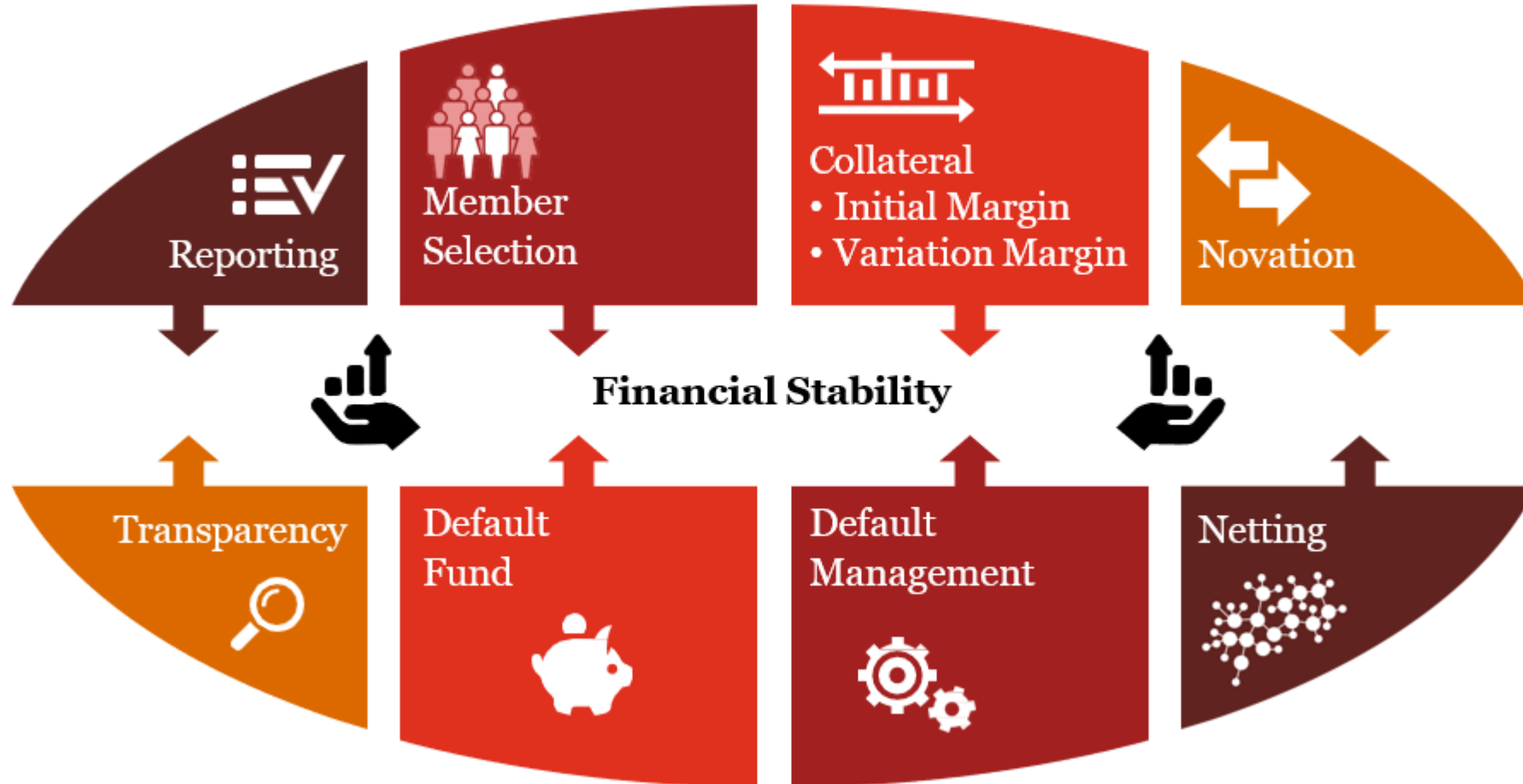


## Central Counterparties (CCPs) – functions



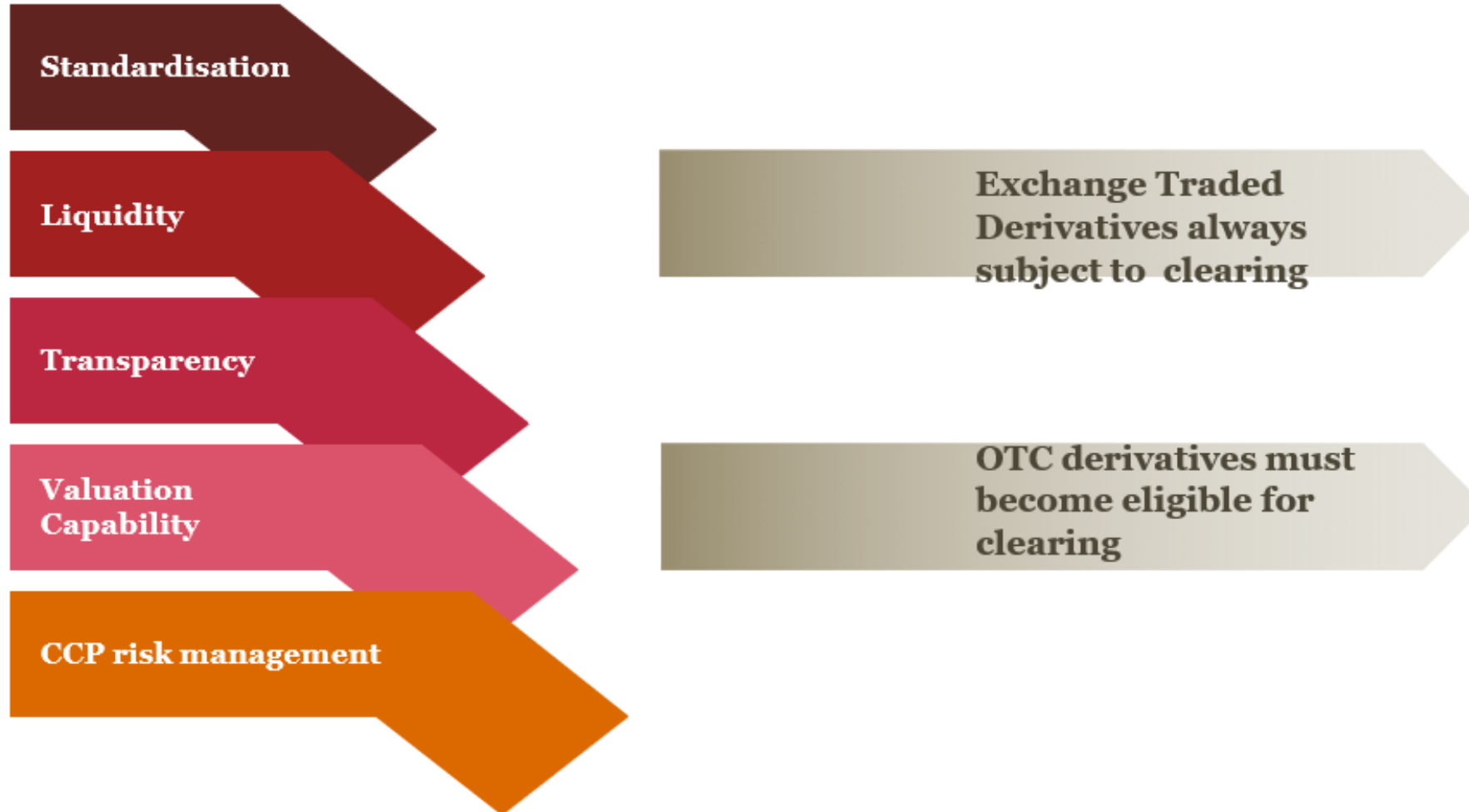


## Central Counterparties (CCPs) – functions





## Derivatives Eligible for Central Clearing





## Benefits of Central Clearing

### Increased netting abilities

Reduction of exposure

### Internal default management

- Reduction of contagion
- No tax-payer bail-out

### Institutionalised collateral management

- Fewer valuation errors
- Central management

### Reporting obligation

Transparency increased



## European Market Infrastructure Regulation (EMIR)

Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, OJ L 201 (EMIR)

- EU implementation of the G20 Pittsburgh Commitments
  - Platform trading requirement for standardised OTC contracts
  - Mandatory clearing for standardised OTC contracts
  - Voluntary clearing of OTC contracts
  - Reporting obligation to Trade Repositories
- Regularity requirements for CCP
- EMIR came into effect August 2012. Phase-in of requirements is ongoing.
  - 60-70% of all OTC transactions could be CCP cleared in future
  - Gross notional outstanding OTC derivative contracts end-June 2022: \$780 trillion (up from \$595 trillion end-June 2018).



## MiFID II / MiFIR

Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (recast) OJ L 173 (MiFID II)

Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012, OJ L 173/84 (MiFIR)

EU reaction to increase investor protection after the financial crisis

- Consumer protection of retail clients (e.g. sales, marketing, inducements)
- Transparency of trades (e.g. intra-day and end-of-day reporting)
- Regulation of trading venues (Exchanges, MTF, OTF, SI)

Took effect 3 January 2018.



## Interrelation of EMIR and MiFID II/MiFIR

### 1. Is the financial instrument in question a derivative?

→ The definition of a derivative is found in points (4) to (10) of Section C of Annex I MiFID II

### 2. Is the entity trading the derivative within regulatory scope?

→ EMIR is applicable to financial and non-financial entities domiciled in the EU. EMIR is also applicable to third country entities, if the contract has a direct, substantial, and foreseeable effect in the EU.

### 3. What are my obligations under EMIR?

→ EMIR has varying obligations for counterparties, depending on their function and impact potential.

#### Financial Counterparty (FC)

1. MiFID investment firm
2. CRD credit institution
3. EU insurance undertaking
4. EU reinsurance undertaking
5. UCITS and, where relevant, its mgmt company
6. EU institution for occupational retirement
7. Alternative investment fund (EEA and non EEA) managed by AIFM

#### Small Financial Counterparty (SFC)

#### Non-financial Counterparty (NFC)

##### NFC +

Group company's NFC entity  
OTC **trading threshold**  
(gross notional) **over any of:**

- Credit: € 1bn
- Equities € 1bn
- Rates: € 3bn
- FX: € 3bn
- Commodities: € 3bn

Hedging transactions can be deducted.

##### NFC –

NFCs below the  
clearing  
threshold

#### 3rd Country Entities

##### TCE

Entities established outside the EU (TCEs) are also in scope of the initial and variation margin.

The risk management procedures of the EU domiciled counterparty can however set forth that NFC- are excluded.



## EMIR: Rules for Non-Cleared OTC Derivatives

- Risk-mitigation mandates for non-centrally cleared OTC derivatives:
  - Higher collateral requirements
  - Disclosure
  - Timely confirmation of trade
  - Portfolio reconciliation + compression
  - Dispute resolution



## EMIR REFIT/ EMIR 2.0

- EMIR has been amended to lessen the burden: EMIR REFIT / EMIR 2.0
- Extensive assessment of EMIR completed between 2015-2017.
- “Regulatory Fitness and Performance Programme” (REFIT) assesses if results for citizens and businesses are effective, efficient, and at minimum cost.
- Make legislation simpler, lighter, more efficient and transparent, eliminate disproportionate costs.
- Various changes proposed to EMIR, while phase-in of EMIR continues.



## EMIR REFIT / EMIR 2.0

**EMIR REFIT** to make legislation simpler, lighter, more efficient and transparent, eliminate disproportionate costs.

### Clearing

- Creation of “SFC” entities with exemption from clearing obligation below certain thresholds
- NFC only subject to limited clearing obligation

### Reporting

- Single sided reporting obligation, with “largest” counterparty mandated
- Better quality assurance and information access from trade repositories

### Suspension of Clearing Mandate

In volatile markets ESMA to suspend clearing obligation for OTC derivatives

**EMIR 2.2** to “increase robust supervision of CCPs” and increase financial stability. Mandate for CCPs with significant volume of financial instruments denoted in currencies of the EU to be cleared by CCPs in the EU.

- Currently: 16 CCPs in the EU; 32 CCPs outside the EU (15 countries) servicing EU counterparties.
- CCPs in London clear the most EUR-derivatives; may be forced to relocate to EU.
- Consequences: Fragmentation of derivatives market and potential loss of liquidity and opportunities.



## EMIR REFIT/ EMIR 3.0

**EMIR 3.0:** to make European banks and brokers more competitive by modifying the EMIR 2.0 requirements

Only the largest EU counterparties are required to clear on average a minimum of five trades per year in each of the most relevant subcategories per class of derivative contracts

- A new exemption from the clearing obligation for post-trade risk reduction exercises
- Making permanent the exemption from bilateral margin requirements for single-stock options and equity index options



## EMIR REFIT/ EMIR 3.0

- Clearing at EU CCPs
- Clearing at Non-EU CCPs
- Clearing Obligation: Thresholds, OTC Derivatives, a New Exemption
- Reducing Bureaucracy for EU CCPs
- CCP Governance and Operational Issues
- Reporting Obligation
- Uncleared Trades
- Equivalence



## Switzerland – Financial Market Infrastructure Act (FinfraG)

- Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Act, FMIA)
- Swiss (near) equivalent of EMIR.
- Swiss implementation of the G20 Pittsburgh Commitments for OTC derivatives
  - Including: Platform trading; mandatory and voluntary clearing; reporting obligation
  - Regulatory requirements for CCPs

<b>Financial Counterparty (FC)</b> _____	<b>Small Financial Counterparty (FC-)</b> __	<b>Non-financial Counterparty (NFC)</b> _____	
<ol style="list-style-type: none"> <li>1. Banks (Banking Act)</li> <li>2. Securities Dealers (Stock Exchange Act)</li> <li>3. Insurance and Reinsurance Companies</li> <li>4. Parent Companies of financial or insurance group / conglomerate</li> <li>5. Fund Management Company and Asset Managers of Collective investment Schemes</li> <li>6. Collective Investment Schemes</li> <li>7. Occupational Pension Schemes</li> </ol>	<p>Financial Counterparties that do not reach CHF 8bn.</p>	<p><b>NFC +</b> (all others) Group company's NFC entity <b>OTC trading threshold</b> (gross notional) <b>over any of:</b></p> <ul style="list-style-type: none"> <li>• Credit: CHF 1.1bn</li> <li>• Equities CHF 1.1bn</li> <li>• Rates: CHF 3.3bn</li> <li>• FX: CHF 3.3bn</li> <li>• Commodities: CHF 3.3bn</li> </ul> <p>Hedging transactions can be deducted.</p>	<p><b>NFC –</b> NFCs below the clearing threshold</p>

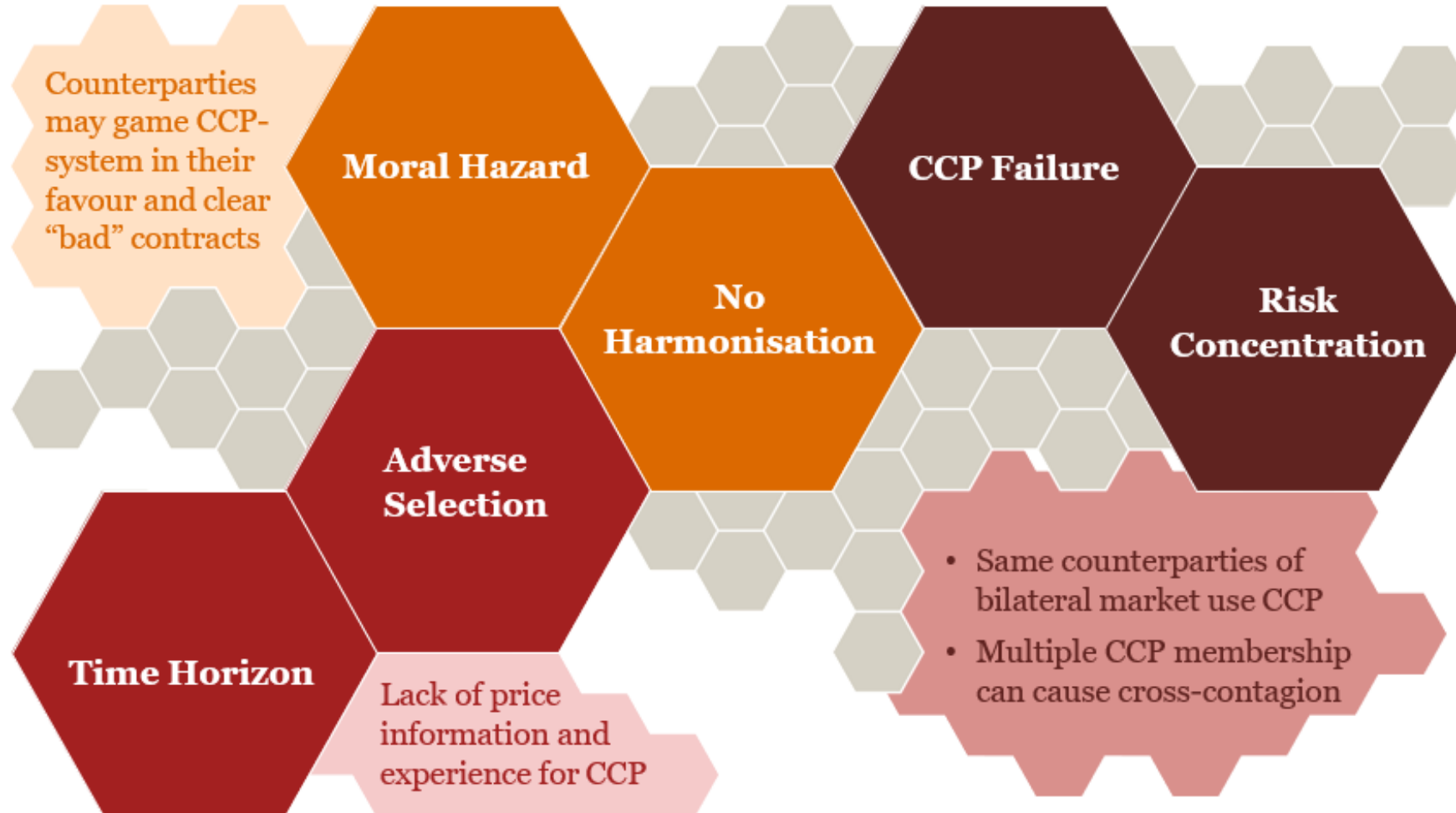


## Switzerland

- Bundesgesetz vom 19. Juni 2015 über die Finanzmarktinfrastrukturen und das Marktverhalten im Effekten- und Derivatehandel (FinfraG; SR958.1)
  - Financial Market Infrastructure Act (FMIA)
  - Effective: 1 January 2016
- Verordnung vom 25. November 2015 über die Finanzmarktinfrastrukturen und das Marktverhalten im Effekten- und Derivatehandel (FinfraV; SR 958.11)
  - Financial Market Infrastructure Ordinance (FMIO)
  - Effective: 1 January 2016
- Objective: Implement international and European standards



## Risks to the Financial System





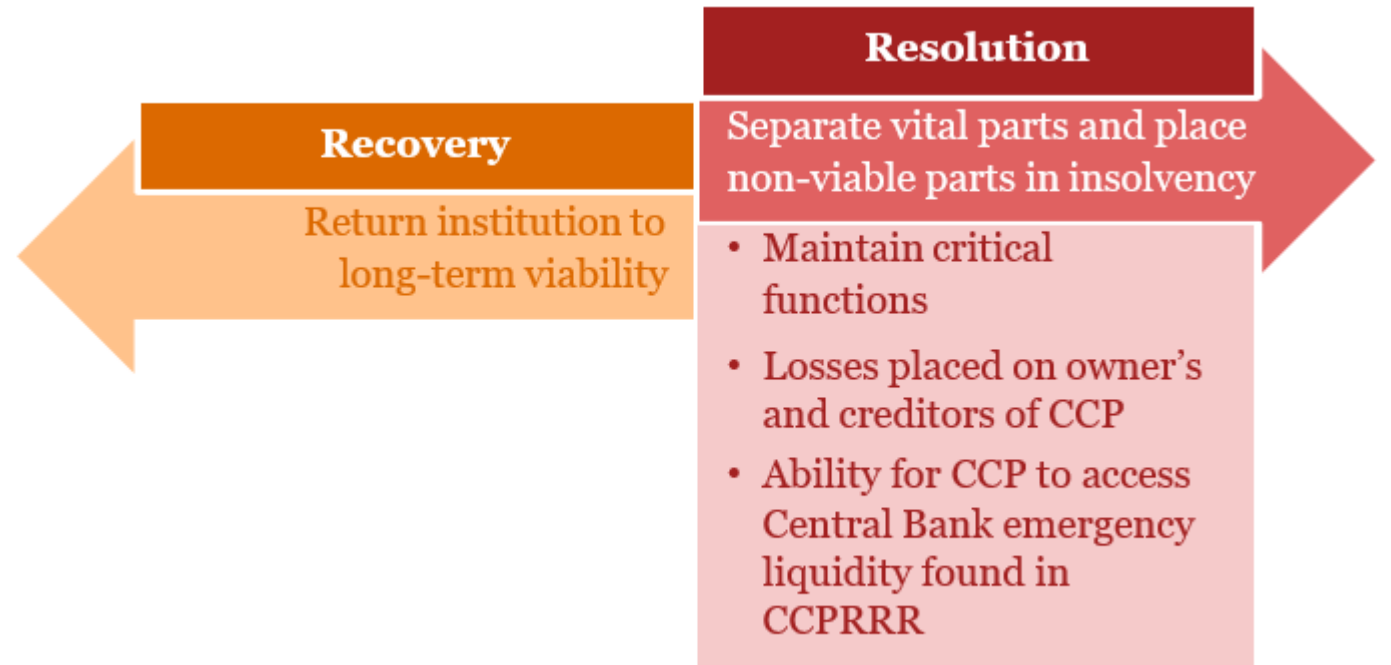
## Impact of Regulatory Reform

- EU
  - First authorisation of a CCP under EMIR: 18 March 2014
  - Phase-in clearing obligation: 2014 - 2019
- CH
  - SIX x-clear AG only approved CCP by FINMA
  - Phase-in clearing obligation: 2016 - 2020
- In the future 60-70% of all OTC transactions could be CCP cleared
- Liquidity drain because of collateral requirements (cleared and non- cleared)
- Market fragmentation
- Long horizon until regulation is implemented and phased-in: 2020+



## CCP Recovery & Resolution Regulation

- Lack of recovery and resolution regulation for CCPs at this time. Proposal published in 2016, no update to-date
- Objective: safeguard financial stability and ensuring critical functions are continuously performed by the CCP
- CCP to draw up a recovery and resolution plan
- Proposal for CCP Recovery and Resolution Regulation directly undermines key objectives of the G20 commitments





## Benefits of Central Clearing

- Increased netting abilities
  - Reduction of exposure
- Internal default management
  - Reduction of contagion
  - No tax-payer bail-out
- Institutionalised collateral management
  - Fewer valuation errors
  - Central management
- Reporting obligation
  - Transparency



## Problems with Central Clearing

- Adverse Selection
  - Lack of price information and experience for CCP
- Information Asymmetry
  - Models of experienced end-users are better
- Moral Hazard
  - Counterparty guarantee of CCP may be abused
- Risk Concentration
  - Same counterparties from bilateral market use CCPs
  - Multiple CCP memberships may lead to contagion
- CCP Failure
  - Too-big-to-fail?

## Unresolved Central Clearing Issues

- «Hindsight» regulation
- Lack of global harmonisation
- Unrealistic time frame
- CCPs never intended for derivatives
- CCPs are not fail-safe
- Risk is shifted around, not removed





## Key Points

- Derivatives shift risks and are crucial to our financial markets. Hedging fulfils a key necessity, while speculation can be an accelerator for systemic risk.
- Speculative usage of OTC derivatives was a key contributor to the financial crisis.
- Clearing through a CCP to reduce counterparty credit risk and limit negative externalities by mutualising and internalising clearing member defaults.
- Regulation of derivatives not globally harmonised and still not fully implemented.
- CCP recovery and resolution framework in the EU 2021.
- CCPs are not fail-safe. Risk has been shifted – not removed – and CCPs have become “too-interconnected” and “too-big-to-fail”.



## Optional further readings

### Recommended

- [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/post-trade-services/recovery-and-resolution-central-counterparties-ccps\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/post-trade-services/recovery-and-resolution-central-counterparties-ccps_en)
- Merton H. Miller, 'Do we really need more regulation of financial derivatives?', University of Chicago Graduate School of Business Selected Paper No 75
- <https://www.chicagobooth.edu/~media/254758677A0740A58EC34D1532EC5E0E.pdf>
- Karrell Lannoo, 'Derivatives Clearing and Brexit', ECMI Policy Brief 25, November 2017
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- Jeremy C. Kress, 'Credit Default Swap Clearinghouses and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity', Harvard Journal on Legislation, Vol. 48, No. 1, 2011
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- Steven L. Schwarcz, 'Central Clearing of Financial Contracts: Theory and Regulatory Implications', May 2018 Draft, 167 University of Pennsylvania Law Review, Vol 167, 2018-19
- [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3104079](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3104079)
- Shearman & Sterling, 'COVID-19: Derivatives Implications', 11 March 2020, Perspectives
- <https://www.shearman.com/perspectives/2020/03/covid-19---derivatives-implications>

### For a deeper understanding

- Alexandra G. Balmer, *Regulating Financial Derivatives*, Edward Elgar (2018).
- Richard S. Carnell, Jonathan R. Macey, Geoffrey P. Miller, *The Law of Financial Institutions*, 'Structured Finance, Securitisation, and Swaps and Derivatives', Aspen Casebook Series, 6<sup>th</sup> ed (2017), 855-892.
- Michael Durbin, *All About Derivatives*, McGraw-Hill Education, 2<sup>nd</sup> ed (2010).