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Connecting Markets East & West

Central Clearing of OTC Derivatives

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Global OTC Derivatives Reform

Increased counterparty risk concerns following the Financial Crisis default prompted G-20 leaders to reform the OTC Derivatives markets

The G20 mandated that **standardised OTC derivatives:**

- **Should be traded on exchanges:** or electronic trading platforms where appropriate
- **Should be cleared through central counterparties**
- **Should be reported to trade repositories**

The G20 recognised that not all OTC derivatives will be eligible for clearing, therefore:

- **All non-centrally cleared derivatives should be subject to higher capital requirements**

- This should happen by **end-2012 at the latest**

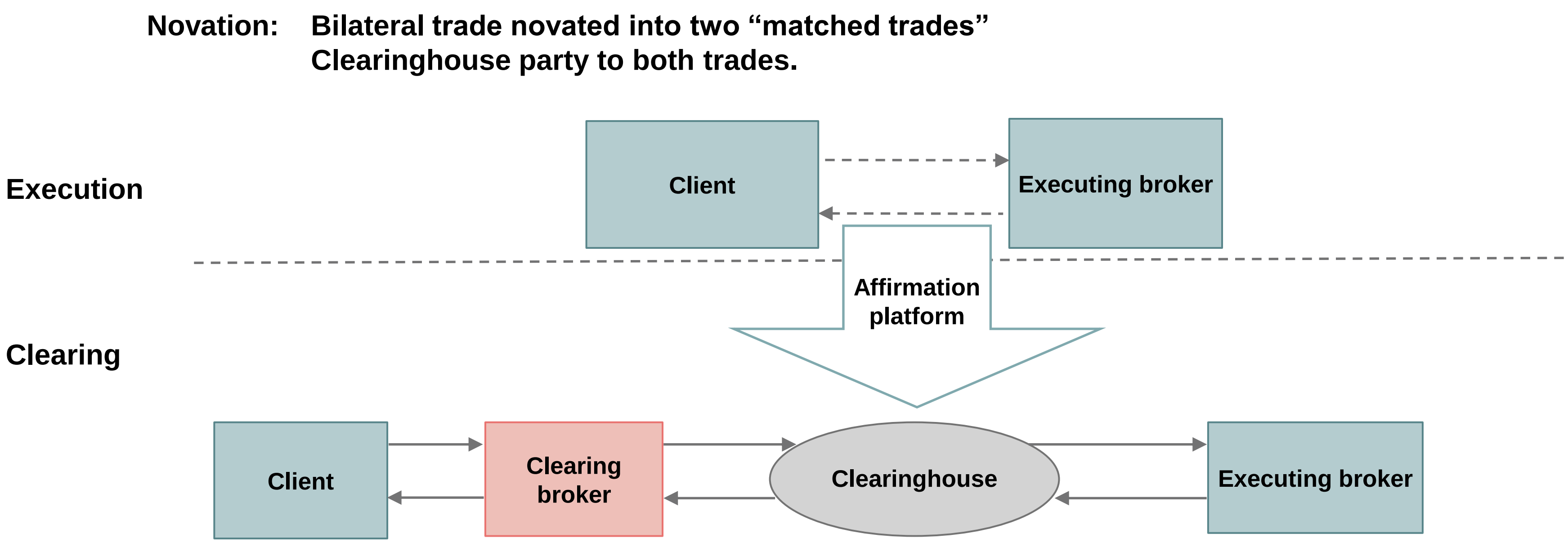
Redefining OTC markets – Global legislation

Legislation covering many major financial centres has been passed or is in consultation but scope and timelines are not harmonised

Jurisdiction	Legislation	Scope (OTC clearing only)	Client clearing
US	Dodd-Frank (July 2010)	All OTC derivatives must be cleared. Some non-financial end-users are exempt	Live (Q1 2013
Europe	EMIR (August 2012)	Financial users of OTC Derivatives and non-financial users who exceed a threshold	Q1 2016
Japan	Financial Instrument and Exchange Act (May 2010)	Initially only inter-dealer transactions cleared from November 2012. Client clearing targeted to commence in February 2014	Q4 2014
Hong Kong	Proposal to amend the Securities and Futures Ordinance	HKMA may exempt non-financial entities who are hedging commercial risks	TBD
Singapore	Proposal to expand the Securities and Futures Act	All financial entities	TBD

Redefining OTC Markets – Overview of OTC Clearing

Workflow of an OTC cleared trade



- Client trades with Executing Broker
- Trade is matched on an affirmation platform
- The Clearinghouse (central counterparty) will check the trade and the Clearing Broker provides acceptance
- The original trade is then deleted and replaced with two trades with the Clearinghouse on both sides
- A corresponding trade between the Clearing Broker and client is also created
- The Executing Broker and the Client (via the Clearing Broker) both provide an Initial Margin deposit to the Clearinghouse

Redefining OTC Derivatives Markets

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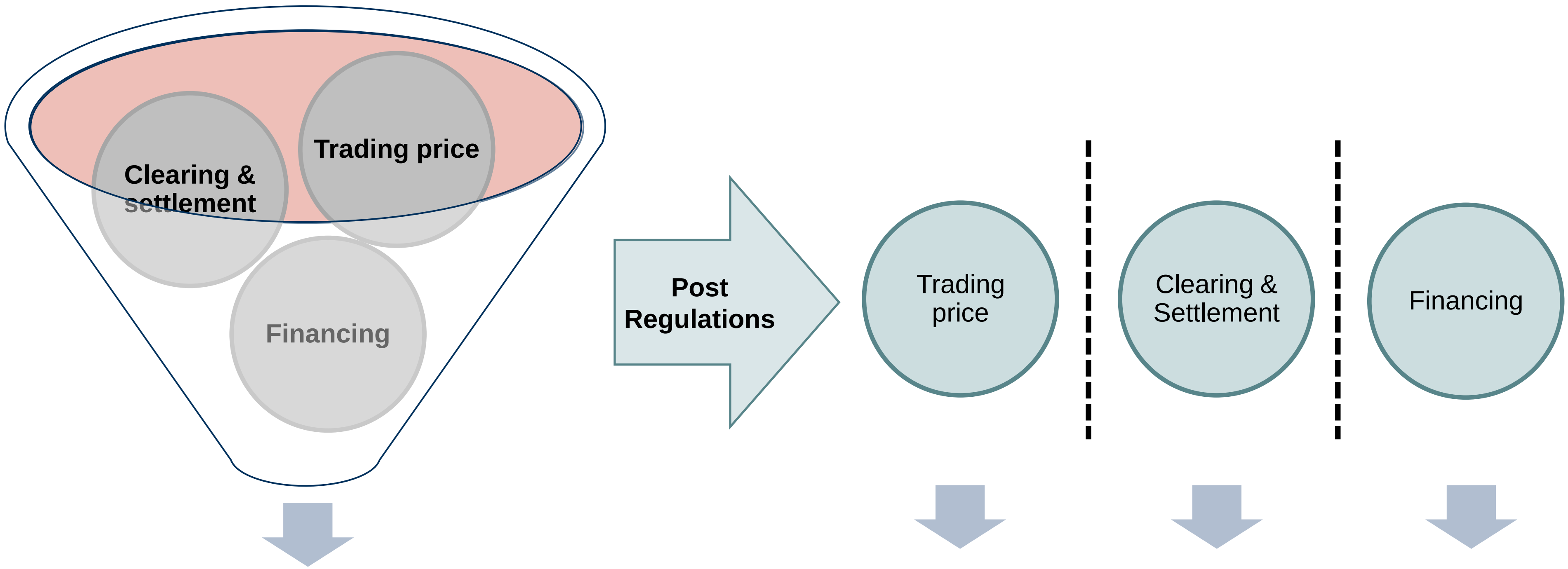
The regulations are unbundling traditional OTC Derivatives markets – creating threats and opportunities for different market participants



Same Counterparty under an ISDA CSA agreement
– Often 'the too big to fail' entities

Can be different counterparties
Opens up counterparty relationships

Client Impact – Margin

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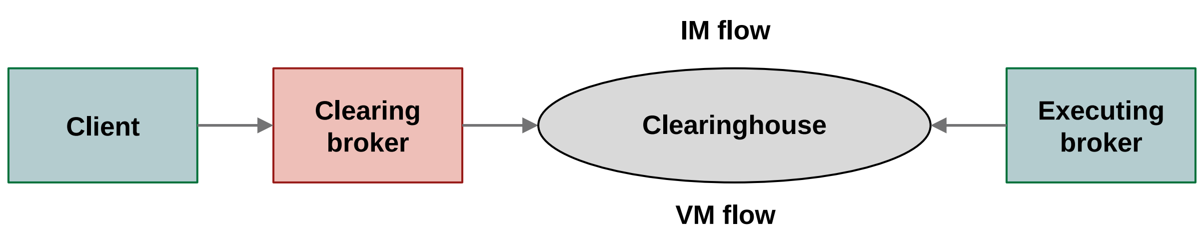
Clearinghouses (CCPs) act as the buyer to every seller and seller to every buyer

Initial Margin

- CCPs collect an Initial Margin (IM) deposit from their direct members to cover the potential costs of closing out portfolios
- IM is calculated based on the riskiness of the net portfolio of trades held at the CCP using an appropriate calculation methodology
- IM is 'forward looking' insofar as it is used to cover losses from the time a clearing member defaults until the time the trades are closed out or passed to another clearing member
- CCPs publish lists of acceptable collateral that clearing members can post to cover IM liabilities

Variation Margin

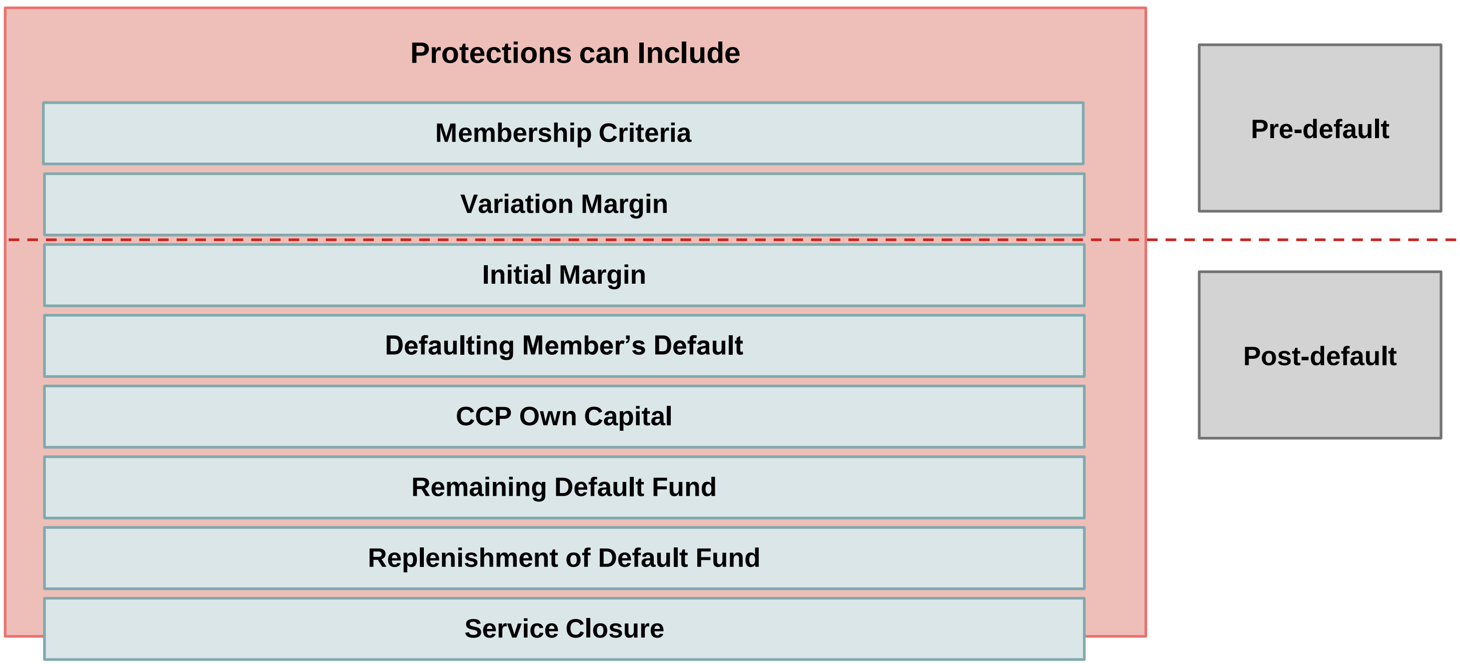
- Variation Margin (VM) is also collected to ensure the value of the trades remain at market value
- This ensures that if a member defaults the IM will be sufficient to absorb any market movements before the trades are closed out or passed to another clearing member
- VM is collected by the CCP from the loss maker on a trade/portfolio and paid to the profit maker
- For OTC Cleared trades VM flows through the CCP and is not held by them CCP
- CCPs collect and pay in the underlying currency of the contract – this prevents any basis risk or any FX risk being held by the CCP



Client Impact – Default Management

- If a client defaults it is the clearing broker who is responsible for managing the close out and associated risk
  - Clearing members are able to use Initial Margin or any other collateral the client may have posted to protect itself in the event of losses
- If a clearing member was to default then each CCP has their own' default waterfall'. Depending on the account structure selected, clients are at risk at different points of the default process (see next slide)

Based on the current CCP models, the below shows the default waterfalls that's are triggered if a member of the CCP defaults



Client impact – Acceptable collateral for initial margin

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Only certain types of collateral are accepted, CCPs publish their own schedules of acceptable IM collateral

- The collateral accepted by CCP must be liquid
- There are variations between CCPs but generally they accept **cash, securities** and **gold**
- CCP collateral policies have changed significantly over recent years to better cover liquidity, concentrations and FX risks

LCH.Clearnet

- Cash (€, US$, £, others available on request given limited capacity)
- Securities (Government Bonds, Government backed bonds, from certain governments – including Spain and Italy)
- Agencies (Freddie, Fannie, Ginnie, KFW)
- Gold

Eurex

- Cash (€, US$, CHF, £)
- Securities (Government bonds, corporate bonds, state agency bonds, munis)
- Equities
- Gold

CME

- Cash (US$, €, CAD, £)
- Securities (G7 government bonds, US agency and mortgage backed bonds)
- Money Market funds
- Gold

ICE

- ICE US
- Cash (US$ and G7 subject to concentration limits)
- Securities (US t-Bills notes and bonds
- ICE EU
- Cash (US$, £, €)
- Securities (Government Bonds – limited range)
- Gold

How much Initial Margin is required?

Excuse me? How much?

- CCPs calculate IM requirements based off 'a close out period' assumption and a confidence interval
  - What does this mean? - CCPs will hold enough margin to close out a portfolio of client trades within **5 days** in **99%** of cases

- Different CCPs have essentially the same models for each product type
  - i.e. Interest Rates Swap IM models are broadly similar historic VaR models but there are some differences in parameters
  - CDS models capture various CDS specific risks (jump to default, curve risk, spread risk, sector risk, liquidity risk etc…)

Client impact – Margin

Examples of Initial Margin requirements

Interest rate swaps

USD	LCH. Clearnet		CME	
	Margin as % Notl		*Margin as % Notl*	
Swap Tenor	**Payer**	**Receiver**	**Payer**	**Receiver**
1Y	0.33%	0.31%	0.14%	0.21%
2Y	0.75%	0.91%	0.46%	0.73%
5Y	2.37%	2.50%	1.29%	2.15%
10Y	5.20%	4.67%	2.84%	4.07%
20Y	9.56%	6.88%	6.02%	5.97%
30Y	12.73%	8.68%	8.25%	7.03%
2Y10Y	3.14%	3.96%	2.58%	2.80%
5Y10Y	2.11%	1.31%	1.04%	1.38%
2Y5Y10Y	0.68%	0.56%	0.43%	0.49%

Credit default swaps

			CME	ICE
Underlying	**Maturity**	**Buy/Sell**	***Margin as % of Not'l***	***Margin as % of Not'l***
CDX.IG.21	Dec-18	B	1.18%	0.51%
CDX.IG.21	Dec-18	S	1.68%	1.56%
CDX.HY.21	Dec-18	B	4.51%	2.51%
CDX.HY.21	Dec-18	S	4.60%	4.70%
CDX.IG.21	Dec-23	B	1.82%	1.76%
CDX.IG.21	Dec-23	S	2.19%	3.18%

Minimise margin calls

Prevention is better than cure - margin efficiency

Offer lower initial margin requirements than other CCPs

- There are regulatory minimum standards so scope is quite limited on outright IM reductions
- Cross product margining Futures vs. OTC

Accept a wider range of eligible collateral

- Eurex have the widest range of securities acceptable as collateral
- LCH.Clearnet have announced that they will look to accept equities as collateral

Offer a wider range of cleared products and allow risk offsets between them

- Swaptions, Inflations Swaps, Cross Currencies, deliverable swap futures

Clear efficiently

- CCPs will have large portfolio multipliers – spread risk across multiple clearing members to avoid hitting these multipliers
- Clear at the CCP and clearing member where a new trade will be risk reducing
- Collateral optimisation

Frontloading

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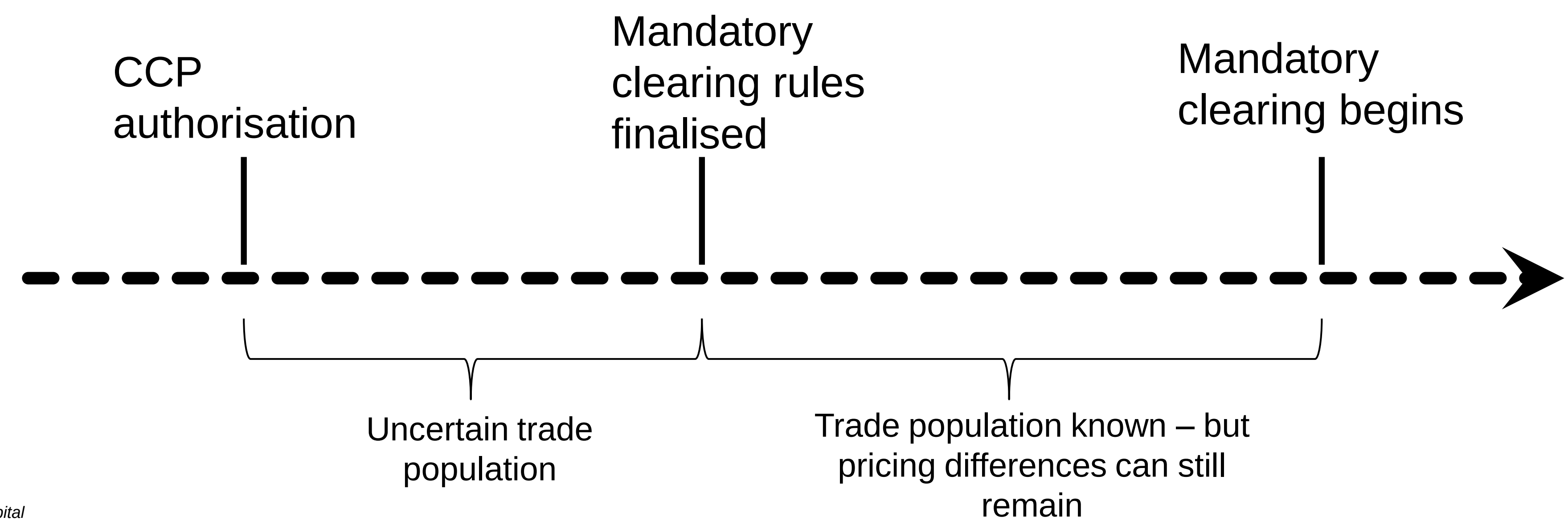
Despite significant opposition frontloading remains

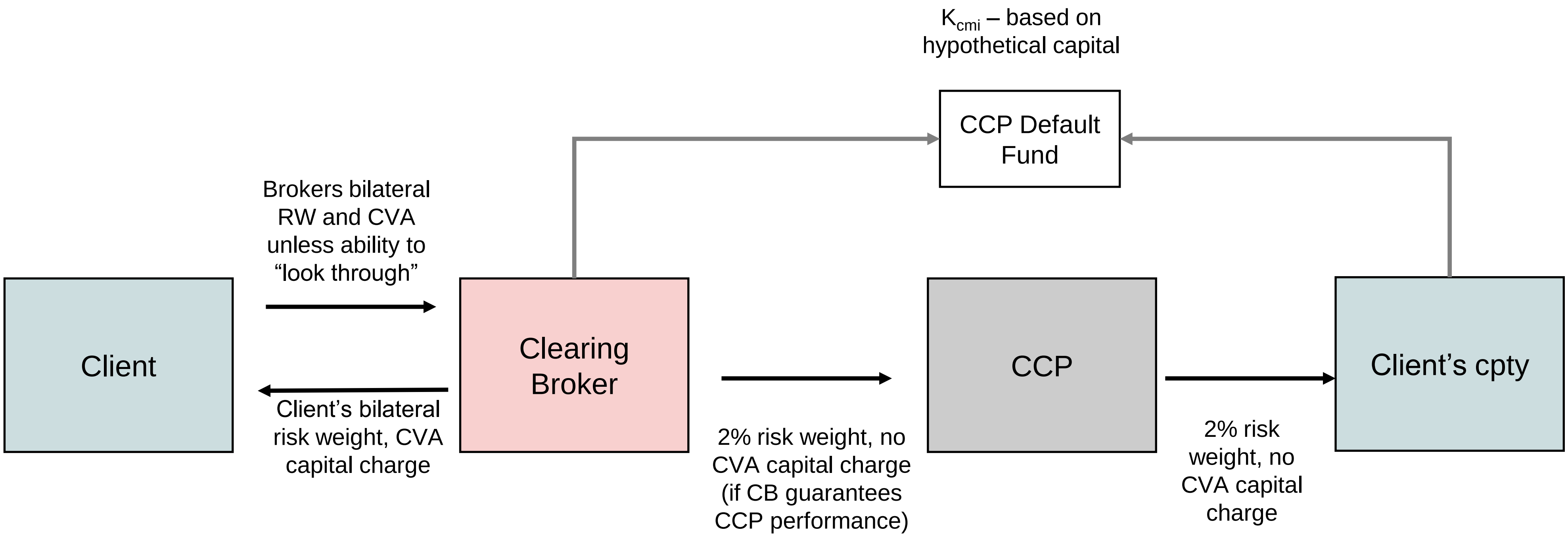
- Frontloading is unique to EMIR – it is a requirement to retrospectively clear trades which are mandated for central clearing and are executed after a certain point in time but before the effective date when all new trades are mandated for clearing.

- Originally was from the point of CCP authorisation but ESMA recommended frontloading only applies from the date the final RTS for the clearing obligation become effective

- Pricing uncertainty still remains



Capital


K_{cmi} – based on hypothetical capital
CCP Default Fund
Brokers bilateral RW and CVA unless ability to "look through"
Client
Clearing Broker
CCP
Client's cpty
Client's bilateral risk weight, CVA capital charge
2% risk weight, no CVA capital charge (if CB guarantees CCP performance)
2% risk weight, no CVA capital charge

Leverage Ratio

The regulatory capital consumption of OTC client clearing will be affected by the implementation of the BCBS proposed Leverage Ratio

$$\text{Leverage Ratio} = \frac{\text{Capital Measure}}{\text{Exposure Measure}} \geq 3\%$$

Alternatively stated:

Regulatory Capital Requirement ≥ Exposure Measure x 3%

Capital Measure / Requirement:

Proposal is to use Tier 1 Capital

BCBS will review until 2017 and against Common Equity Tier 1 and Total Regulatory Capital measures

Timeline:

1st January 2013	Banks submitting quarterly reports on Leverage Ratio
1st January 2015	Public disclosure of bank reports
1st January 2017	BCBS finalise calibration and rules
1st January 2018	Pillar 1 implementation

NB Basel III allows for more conservative adoption by national regulators

Source: ***BCBS final rule paper "Basel III leverage ratio framework and disclosure requirements", January 2014, http://www.bis.org/publ/bcbs270.htm***

Future Considerations – Leverage Ratio

The Exposure Measure is driven by trade count, duration and notional
Clearing members should incentivise clients to compress portfolios through next generation pricing structures

Exposure Measure:

Exposure Measure = Replacement Cost (***RC***) + Add on for Potential Future Exposure (***PFE***) or close out risk

BCBS allow for CM to ignore exposure to QCCP in respect of client positions if CCP performance not guaranteed

RC = MtM – collateral

MtM = MtM netting across all trades covered by same CSA is permitted

Collateral = daily settled, in currency cash may be offset against MtM

RC therefore assumed to be zero for daily cash VM collateralised client clearing position

PFE = Notional principal x Add on factor (***A***) (*see table below*)

Time to Maturity	IRS	FX/Gold	Equities	Credit IG	Credit HY	TRS IG	TRS HY
<1y	0.0%	1.0%	6%	5%	10%	5%	10%
1y < t < 5y	0.5%	5.0%	8%	5%	10%	5%	10%
> 5y	1.5%	7.5%	10%	5%	10%	5%	10%

Diversification benefit is limited – if the CSA references more than 50 trades add on per trade may be reduced by 50%

Source: ***BCBS final rule paper "Basel III leverage ratio framework and disclosure requirements", January 2014, http://www.bis.org/publ/bcbs270.htm***

Questions?

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