Institut de la finance structurée et des instruments dérivés de Montréal
Montreal Institute of Structured Products and Derivatives

A few Myths and a bit of Reality about Derivatives

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A bit of self-promotion

- IFSID launched in 2011.
- Our mission: To contribute to Montreal’s expertise in the fields of derivatives, structured finance, and risk management.
- Our activities:
  - Professional training.
  - Research support.
  - Knowledge transfer.
- Visit us at www.ifsid.ca.

Outline

1. What have we learned
   from 40 years of derivatives trading?

2. The post-crisis challenges.

3. Derivatives tomorrow and beyond…

A few Myths and a bit of Reality about Derivatives

WHAT HAVE WE LEARNED FROM 40 YEARS OF DERIVATIVES TRADING?

Derivatives « Big Bang » in 1973: Black & Scholes and the CBOT

Option buyers

Hedging
High leverage speculation

Derivatives markets

Supply and demand meet through NO-ARBITRAGE option prices

Option writers

Sustainable profit-making business thanks to replication

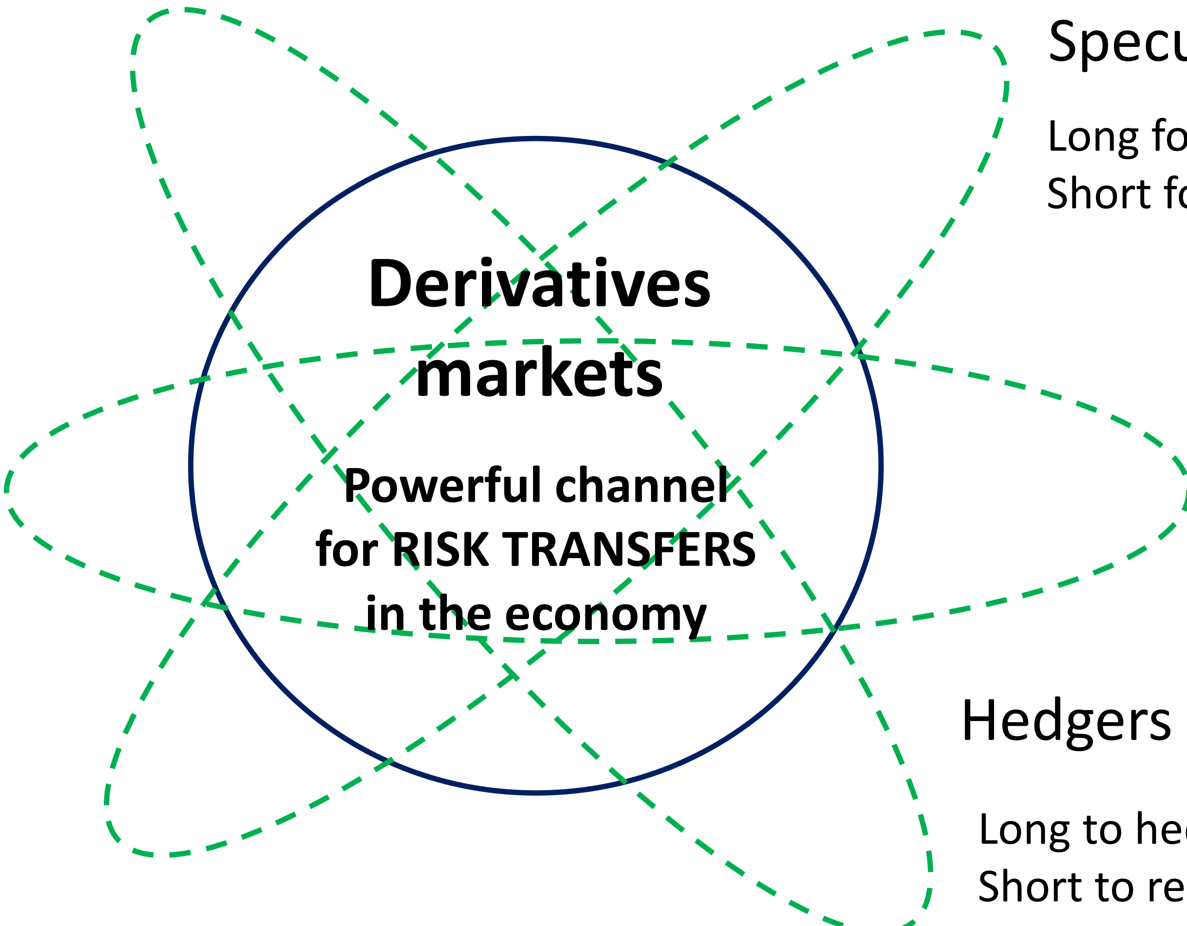
Since the « Big Bang »:
Derivatives markets throughout the world…

Speculators

Long for leverage
Short for liquidity

Arbitrageurs

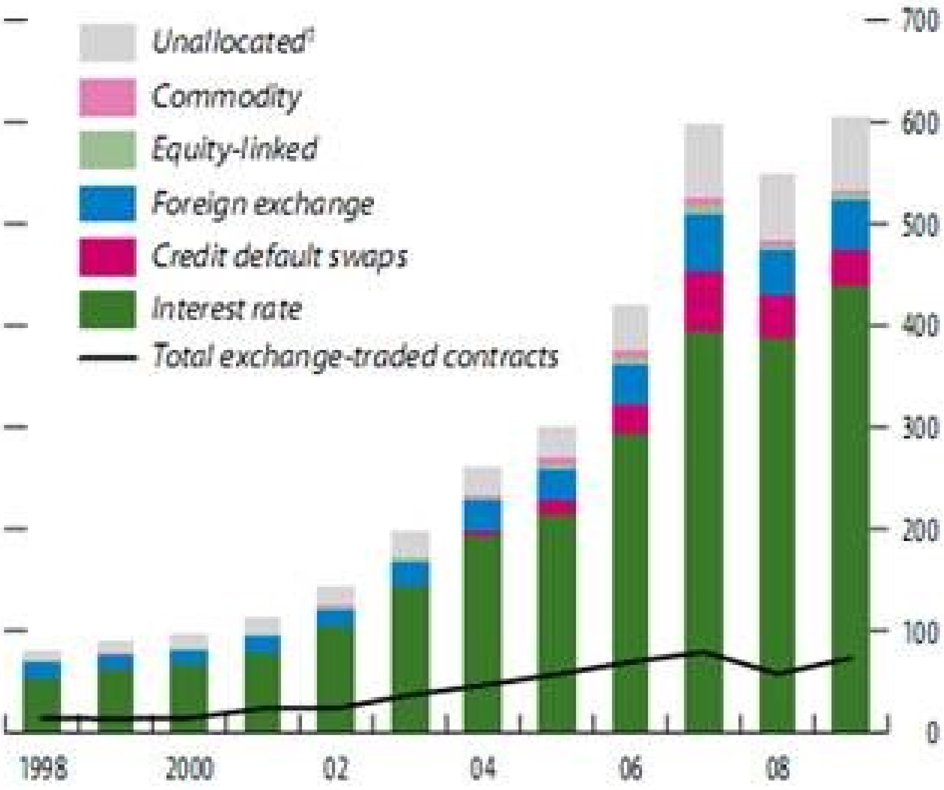
Correct pricing
anomalies



Hedgers

Long to hedge
Short to reduce
cost of hedging

Figure 3.1. Global Over-the-Counter Derivatives Markets
(In trillions of U.S. dollars; notional amounts of contracts outstanding)



Source: Bank for International Settlements.
Note: Over-the-counter data through June 2009; exchange-traded data through December 2009.
[1]Includes foreign exchange, interest rate, equity, commodity, and credit derivatives of nonreporting institutions.

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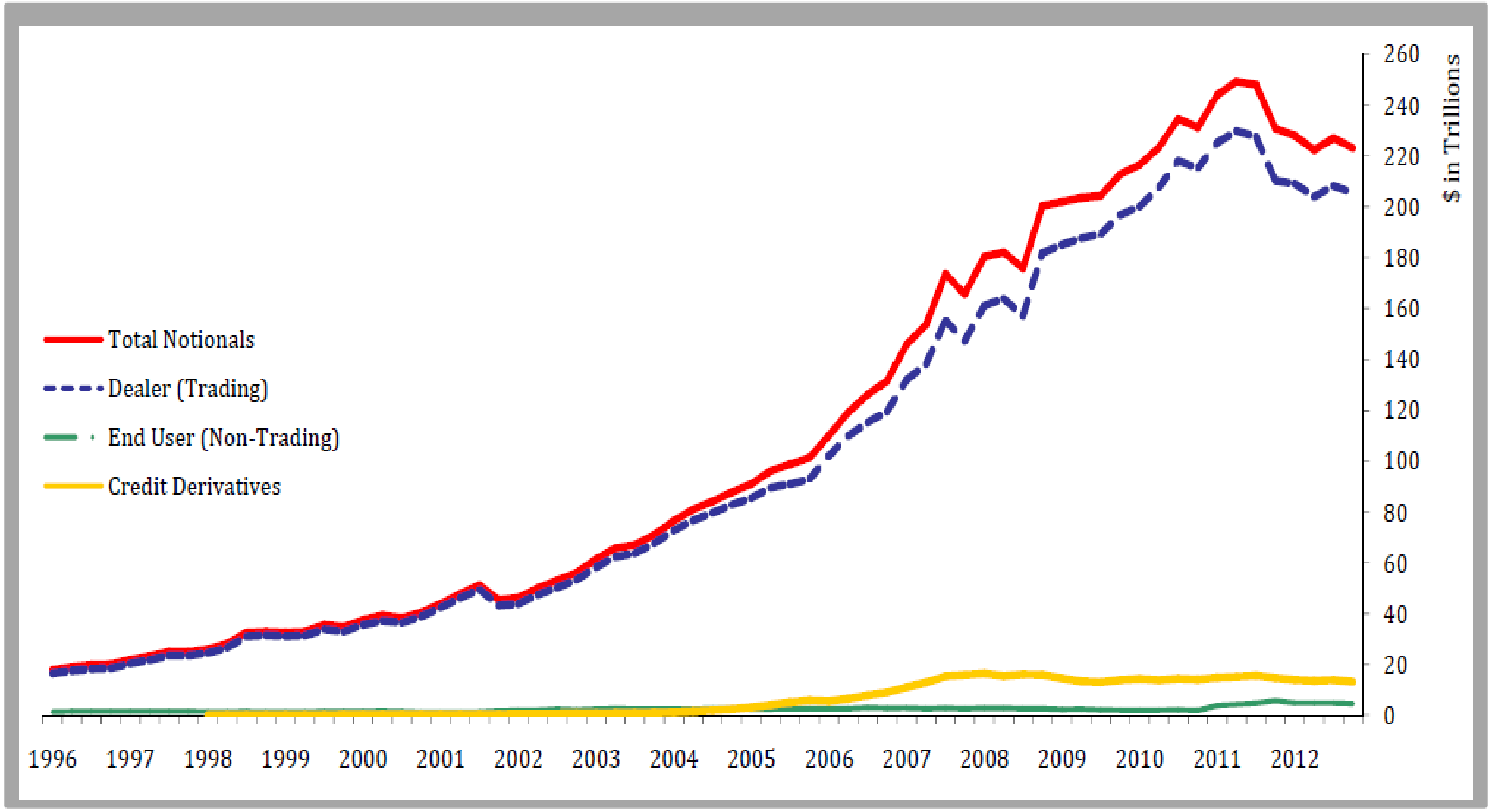
Some key trends

- Exponential growth stopped by latest crisis and (possibly) current regulatory uncertainty.
- Major segment is IR derivatives.
- OTC market explosion:
  - From 1993 till now, the OTC / ET market size ratio has raised from 1 to 7.



Source: OCC.

Another key trend: Explosion of dealer trading.

In the U.S. ratio Dealer / End-user notionals: 11 (1995) -> 57 (2014).

What about the scandals?

- « Financial weapons of mass destruction » W. Buffett, 2003.
- Headlines in the press.
- Throw the baby with the bathwater?

Different types of derivatives misuses

- End-users mistakes
  - e.g. Metallgesellschaft (1993); Procter & Gamble (1994); Orange County (1994)…
  - Experiencing the thin line between hedge and speculation.
  - Appropriate response: Training.
  - Fundamental issue is: Should corporate treasuries be profit centers?

Different types of derivatives misuses

- Operational risk
  - e.g. Barings (1995); Société Générale (2008)…
  - Individual traders exposing their institutions to inconsiderate risks.
  - Appropriate response: Audit, reporting.
  - Fundamental issue: Is self-regulation (Basel accords) effective against operational risk?

Different types of derivatives misuses

- Proprietary trading
  - e.g. LTCM (1998); Lehman Brothers (2007); JP Morgan (2012)…
  - Inefficient reallocation of risks among the financial sector.
  - Appropriate response: industry-, governmental- and international (?) regulation.
  - Fundamental issues: Market design, market transparency and redefinition of banking.

Derivatives and the 2007-08 crisis

- Derivatives *are not* responsible for the crisis.
- *Some of them* magnified it.
  - Complex CDO (rating the tranches).
  - Opaque CDS (pre-crisis evidence of informed trading highlighting the risk of adverse selection).
- One of the fundamental issues raised by the latest crisis: Not the role of derivatives, rather the role of *financial innovation*.
  - An FDA for financial innovation (Posner & Weyl, 2013).

Derivatives and the 2007-08 crisis

- Derivatives « connect » markets (European Commission, 2009).
  - Eliminate price inefficiencies between markets.
  - Contribute to market price discovery.
- Are they transmission mechanisms that increase systemic risk?
  - Leverage.
  - But derivatives enable leverage.

A few Myths and a bit of Reality about Derivatives

THE POST-CRISIS CHALLENGES

Market structure

- The derivatives market is more oligopolistic than ever.

OCC reports on concentration of derivatives contracts (U.S. market).				
In 1998	7 banks	account for	94.1%	of derivatives contracts
In 2001	7 banks		95.8%	
In 2004	5 banks		96.0%	
In 2007	5 banks		97.0%	
In 2010	5 banks		96.4%	
In 2013	4 banks		93.0%	

Market structure

- The derivatives market is more oligopolistic than ever.

	TOP 4		All other banks	
	Notional (US$tril)	% total	Notional (US$tril)	% total
Futures & forwards	40.5	17.1	4.8	2.0
Swaps	136.1	57.5	10.4	4.4
Options	31.9	13.5	2.2	0.9
Credit derivatives	10.5	4.4	0.4	0.2
TOTAL	219.0	**92.5**	17.8	**7.5**

Portrait of the U.S. market, as of June, 2014. Shares of total notional amounts, ET and OTC. TOP 4 are: JP Morgan Chase, Citibank, Bank of America, and Goldman Sachs. Source: OCC.

The regulation of OTC markets

- G20 commitments (2009):
  - All standardized OTC derivative contracts should be traded on exchanges or electronic platforms.
  - They should be cleared through CCPs.
  - They should be reported to trade repositories.
  - Non centrally-cleared contracts will be subject to higher capital requirements.

The regulation of OTC markets

- Trading platforms.
  - In the U.S., Dodd-Frank Act (2010) required that all transactions be traded on Swap Execution Facilities (SEFs). CFTC began regulating SEFs in October 2013.
  - In Europe, the EU is introducing Organized Trading Facilities (OTFs).

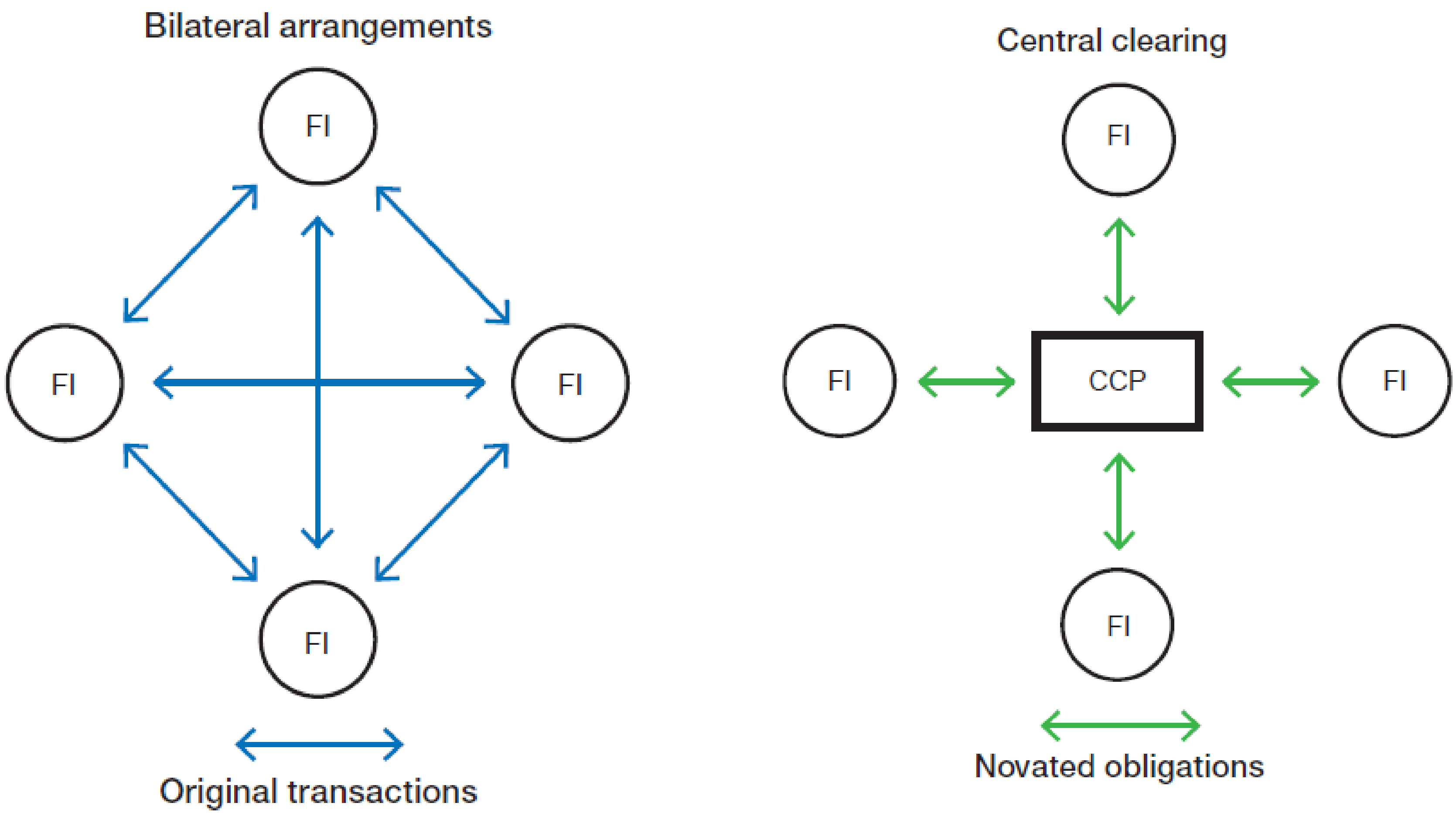
The regulation of OTC markets

- Dissemination of CCPs.
  - Share of notional amounts that are with CCPs.

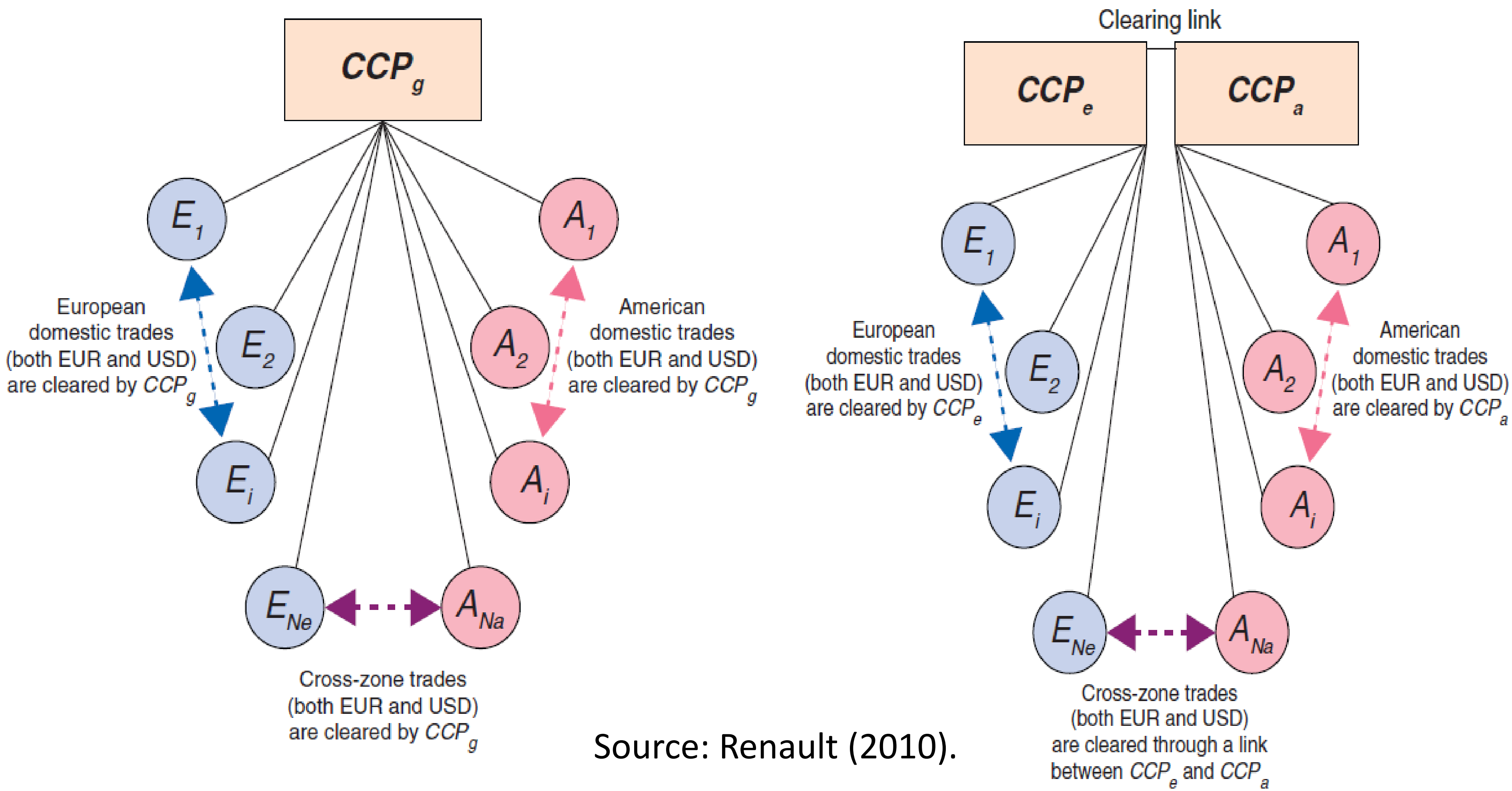
	Interest rate	CDS
2010	68%	10%
2011	66%	18%
2012	70%	19%
2013	78%	26%

Source: BIS.

- Central clearing with novation.



- The issue with multiple CCPs.



Source: Renault (2010).

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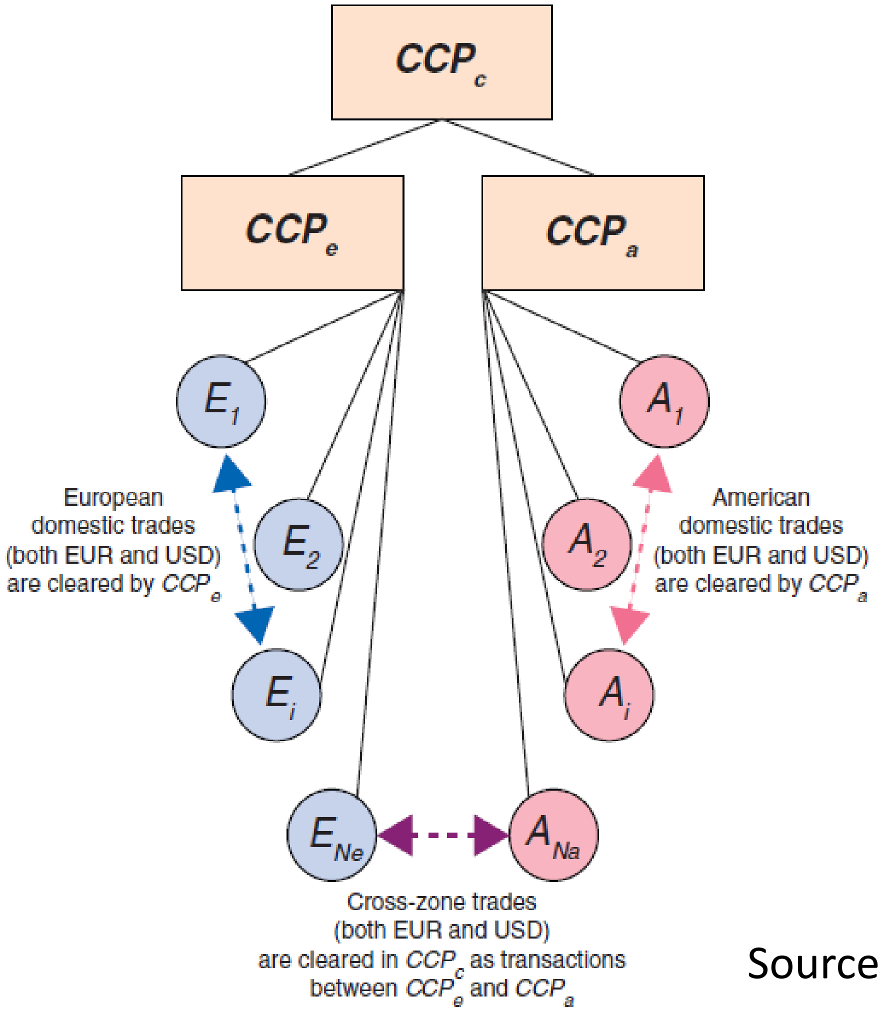

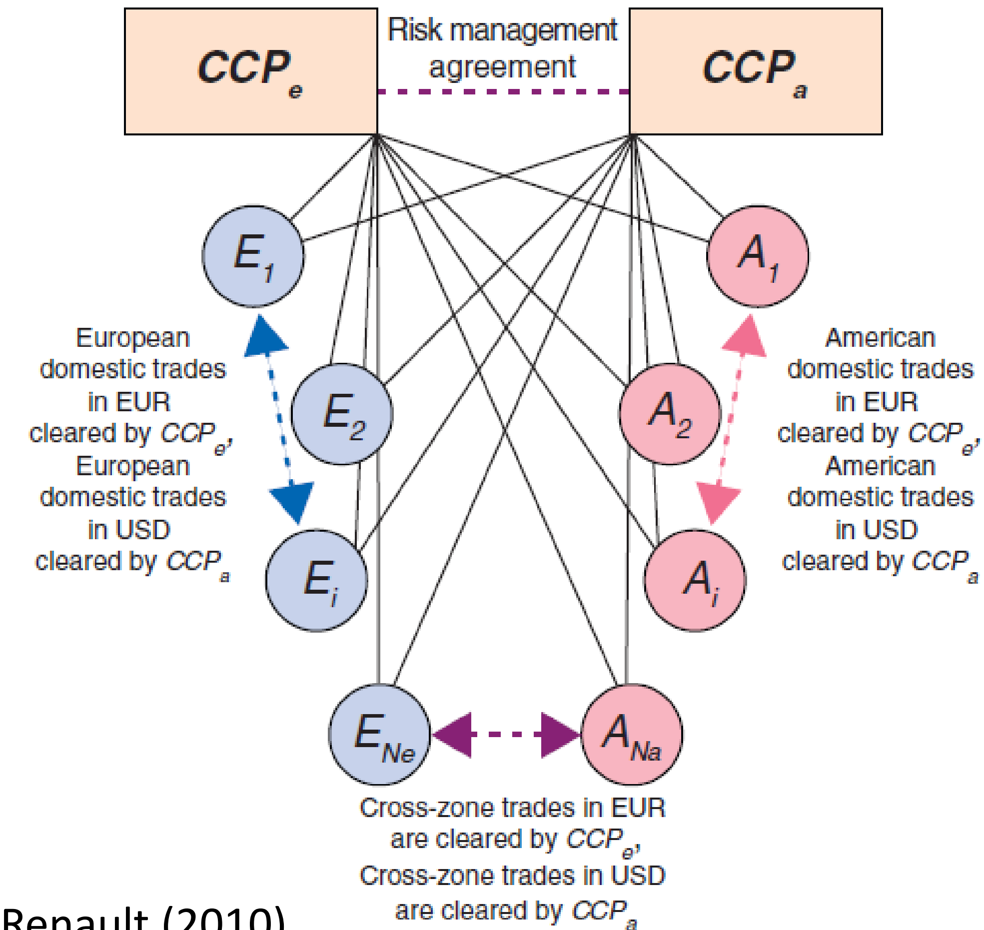

Source: Renault (2010).

- The impact of clearing set-up on net exposure depends (in particular) on:
  - Level of funding available to CCPs.
  - Level of competition among CCPs.
  - Degree of integration among participants.
  - Particular risk profiles.
  - Margin requirements.
- Derivatives research needs experts in market design and industrial organization.

A few Myths and a bit of Reality about Derivatives

DERIVATIVES TOMORROW AND BEYOND…

Derivatives are here to stay

- Losses caused by derivatives misuses are countable. Less countable are:
  - Day-to-day benefits of hedging for end-users.
  - Day-to-day benefits of reallocating risk for financial intermediaries.
- Obligation to hedge?
  - Implied obligation to hedge exists in jurisprudence since Brane vs. Roth, Indiana, 1992.
  - But its scope is determined by business judgment rule, and in particular, by industry practice.

Convergence of OTC and ET markets

- OTC -> ET:
  - CCPs.
  - Margin requirements.
  - Transparency.
- ET -> OTC:
  - Profit-making exchanges offer non-standard products.
  - Get active in clearing business (e.g. CDCC in Canada).
- Concern for the regulator:
  - Convergence could provide incentives for new opaque markets (« dark pools »).

Capital and liquidity

- Regulation of OTC markets impacts on banks liquidity:
  - Margin requirements.
  - Collateral.
- New tension between capital and liquidity in future banking regulation (Hull, 2014)?
  - VaR, CVaR, LaR…?

A new macro role for derivatives markets?

- Derivatives markets as mechanism to extract fundamentals.
  - Inflation risk (Longstaff, 2014).
  - Weather derivatives and global warming.

Thank you for your attention.

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