

La finance comme technologie sociale

Tarik Roukny

KU Leuven

Académie Royale, 2019 - Bruxelles

Mauvaise presse

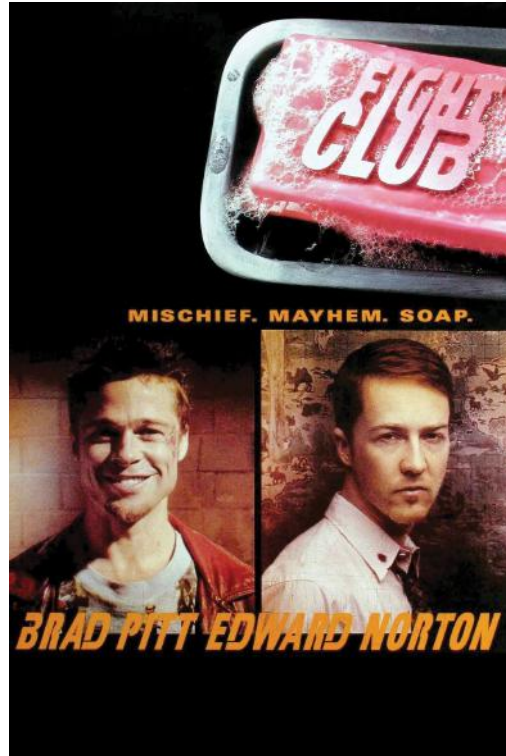


Bernard Madoff

Occupy Wall Street



Fight Club



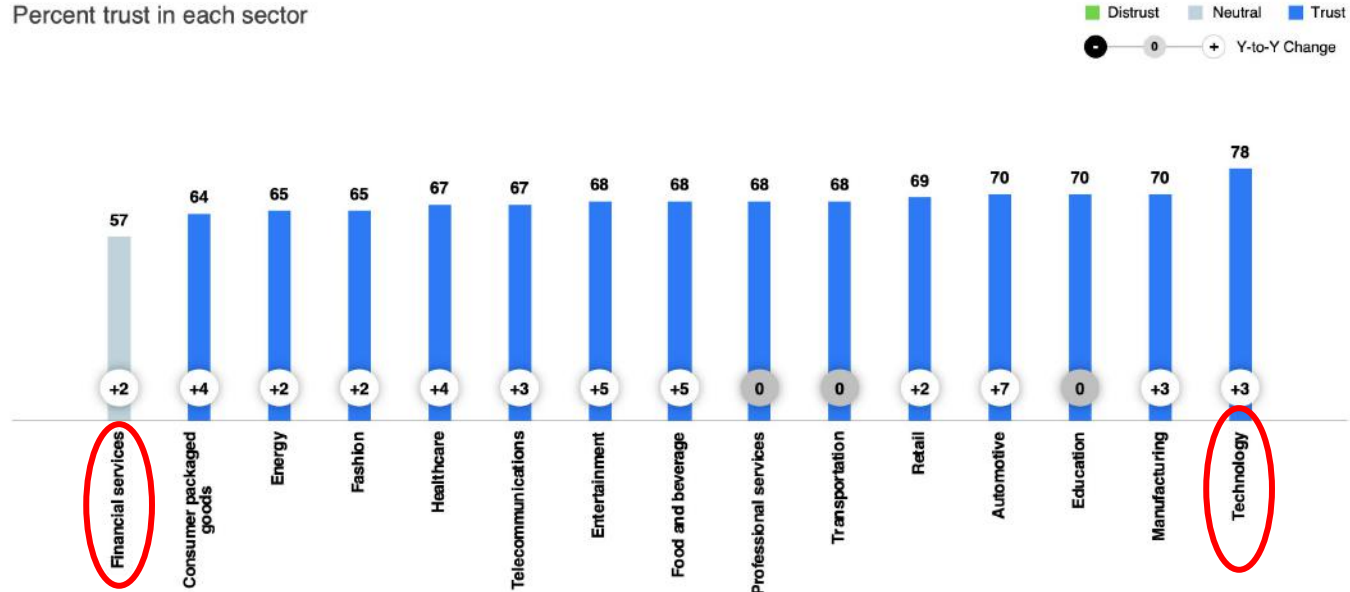
Fight Club



Absence de confiance

TRUST INCREASES IN 12 OF 15 SECTORS

Percent trust in each sector



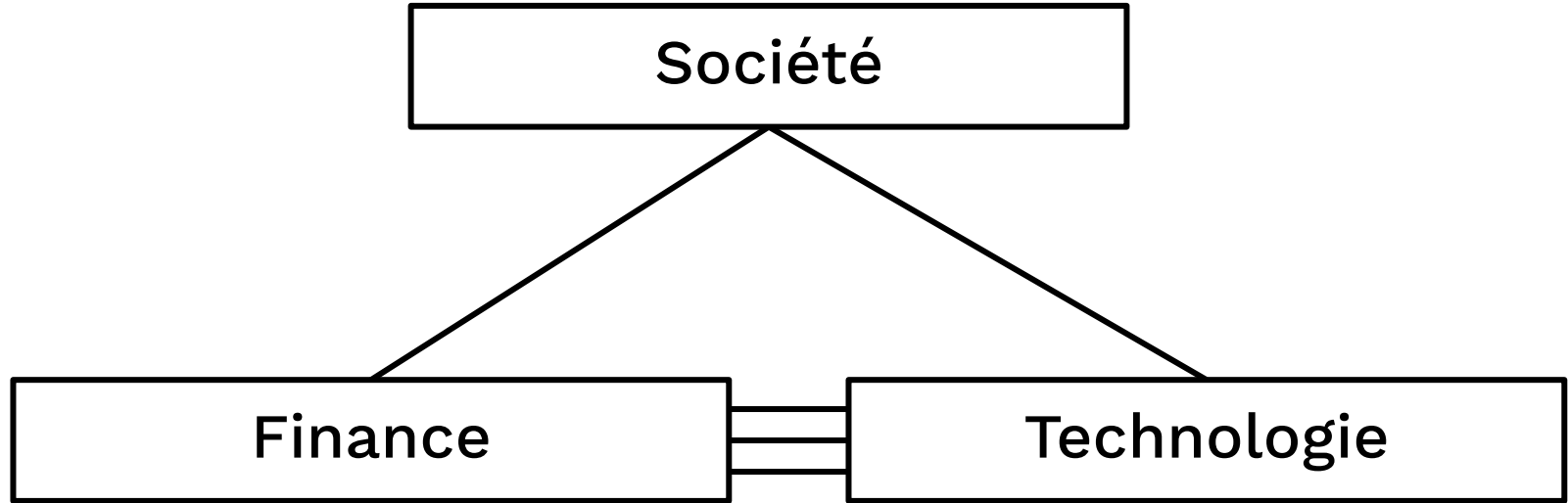
2019 Edelman Trust Barometer, TRU_IND. Please indicate how much you trust businesses in each of the following industries to do what is right. Again, please use the same nine-point scale where one means that you "do not trust them at all" and nine means that you "trust them a great deal". 9-point scale; top 4 box, trust. Industries shown to half of the sample. General population, 25-market average.

Héritage historique

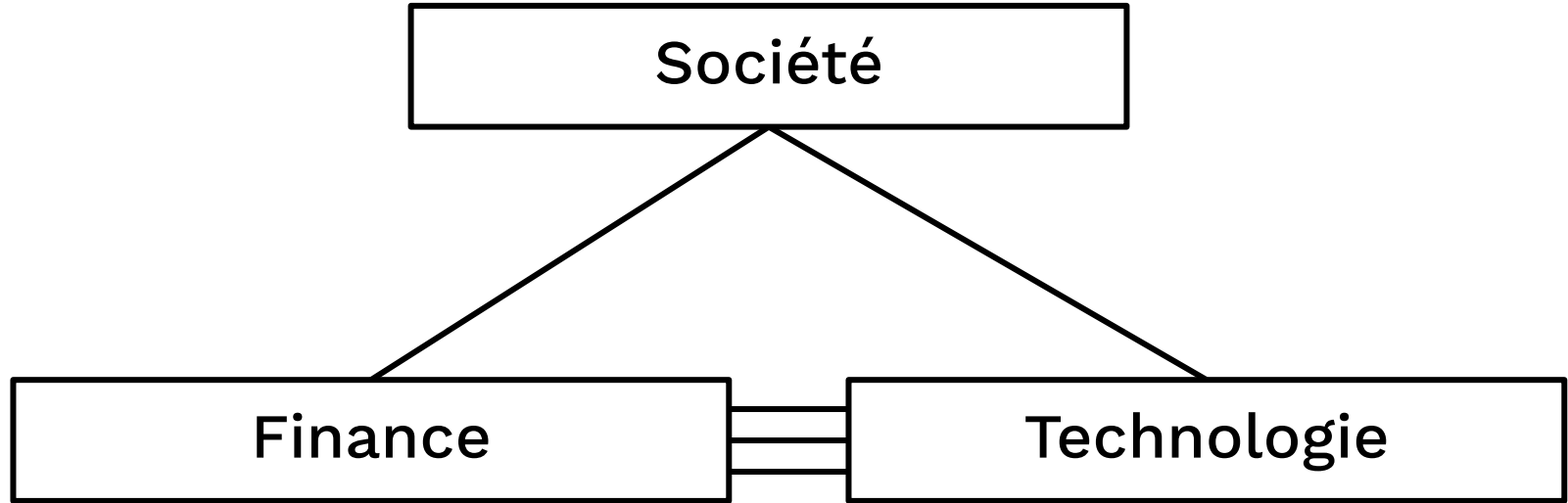


Grand miroir de la Folie
John Law
1720

Plan



Plan



Aujourd'hui

1. Finance comme technologie sociale

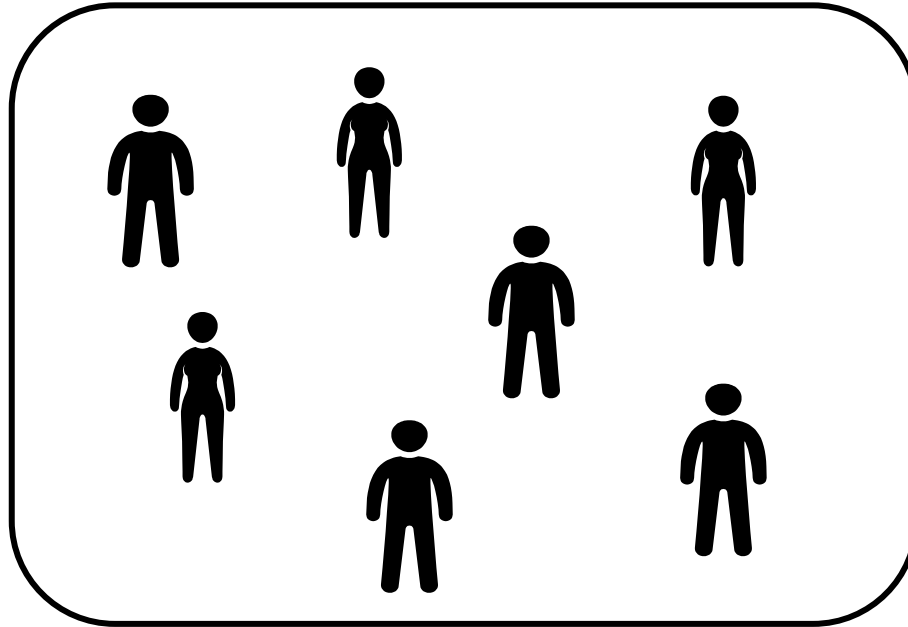
2. Illustration des challenges en place

Dédale et Icare

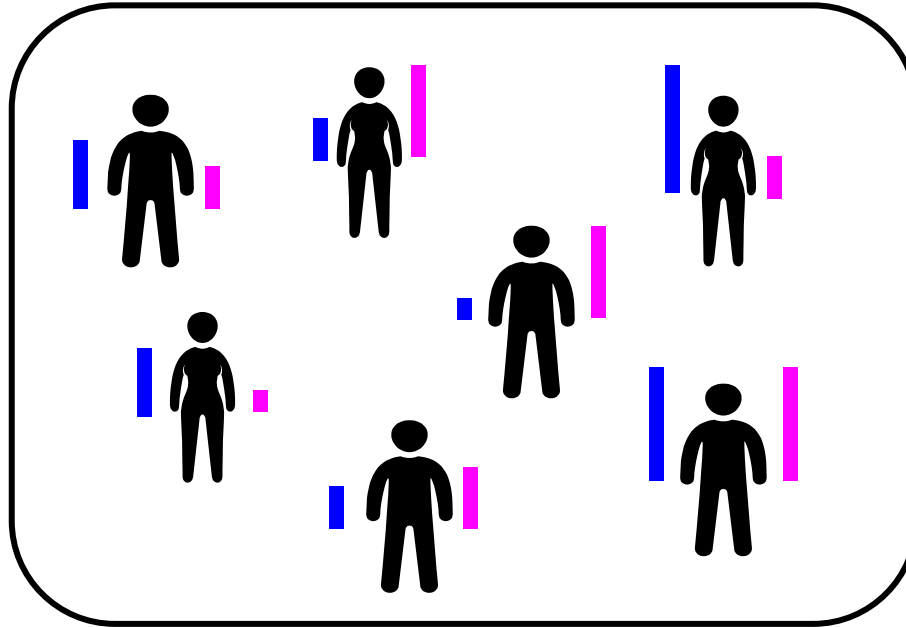


La chute d'Icare
Jacob Peter Gowdy
1636 - 1638
Anvers

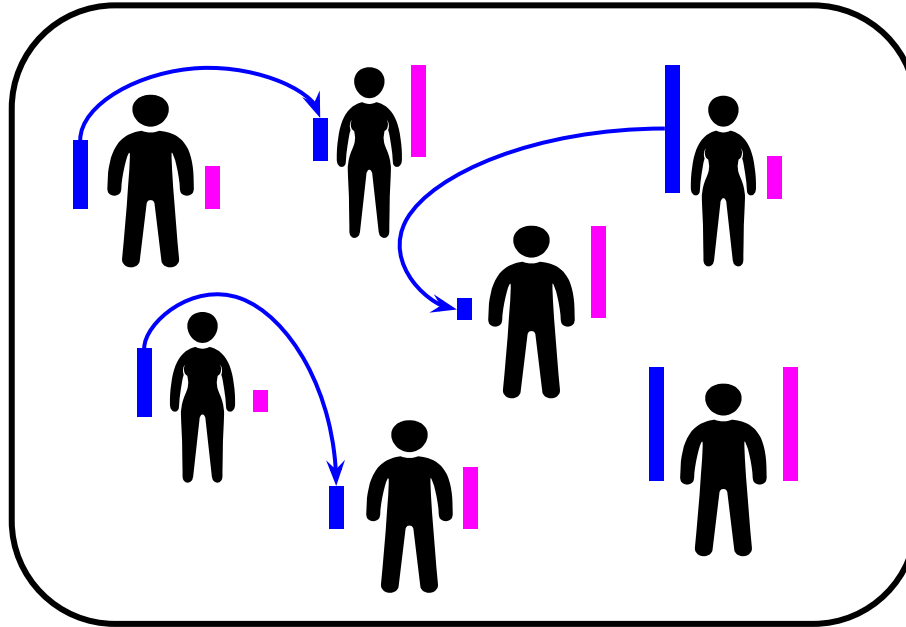
Société embryonnaire



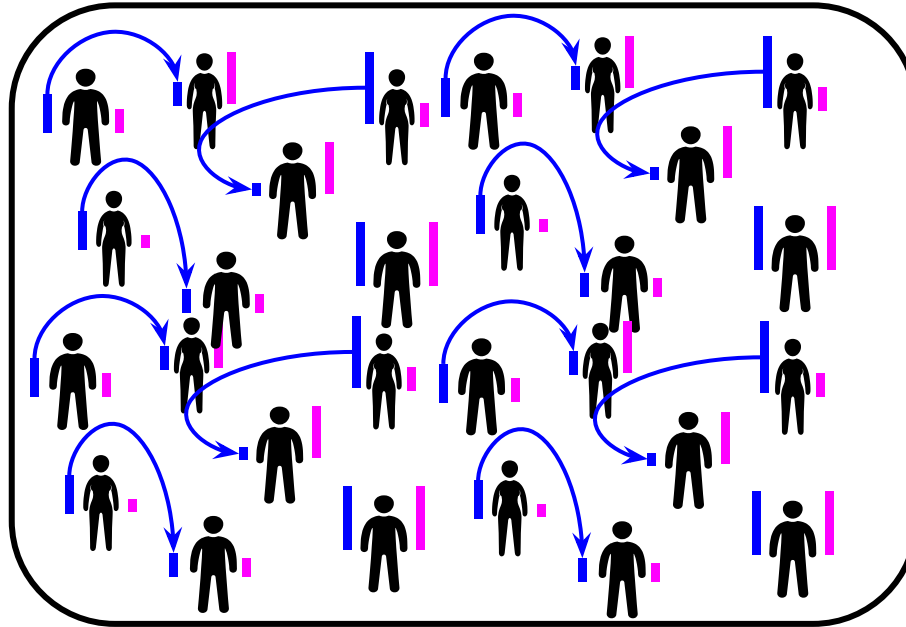
Société embryonnaire



Société embryonnaire



Société embryonnaire



Société embryonnaire



Société embryonnaire



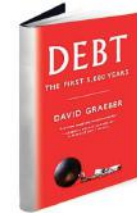
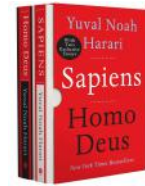
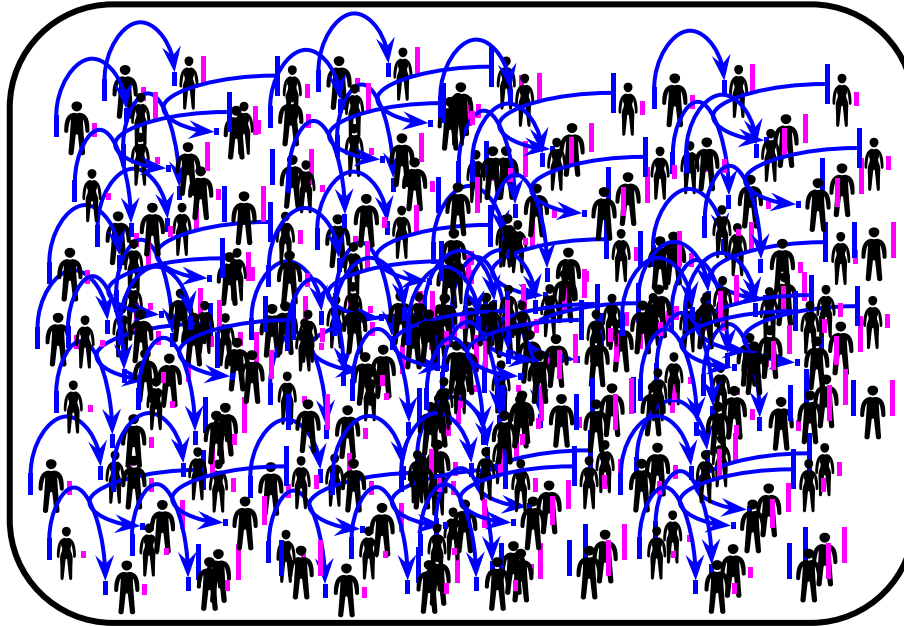
Finance

Technologie

Société embryonnaire



*"In essence, financial technology is a **time machine** we have built ourselves. It can't move people through time, but it can move their money."*



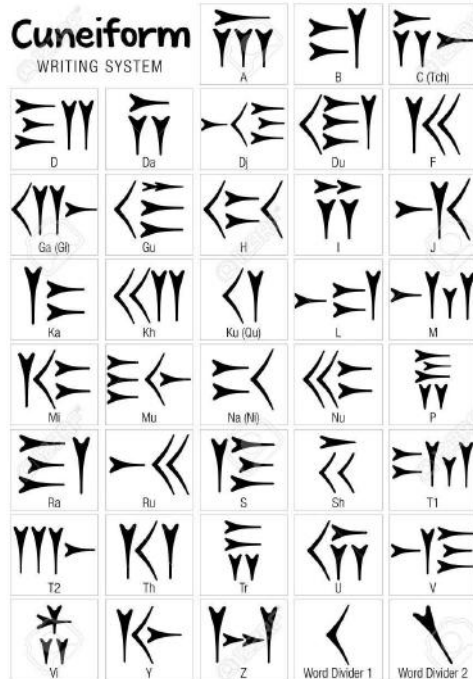
Finance

Technologie



Uruk

Finance et technologie

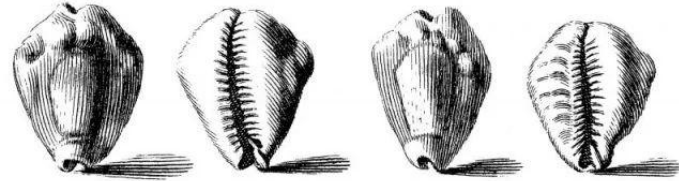


When people started living in large communities like Uruk , they shared their lives with strangers as well as friends . It may have been possible to know everyone in a large farming village , but not in a vast city , such as Uruk . **What were once implicit agreements among neighbors now became explicit contractual agreements among strangers .**



The connection between the tablets and the tokens helps explain the function of each. Virtually all of the earliest tablets from Uruk were accounting documents recording the transfer of goods and commodities.

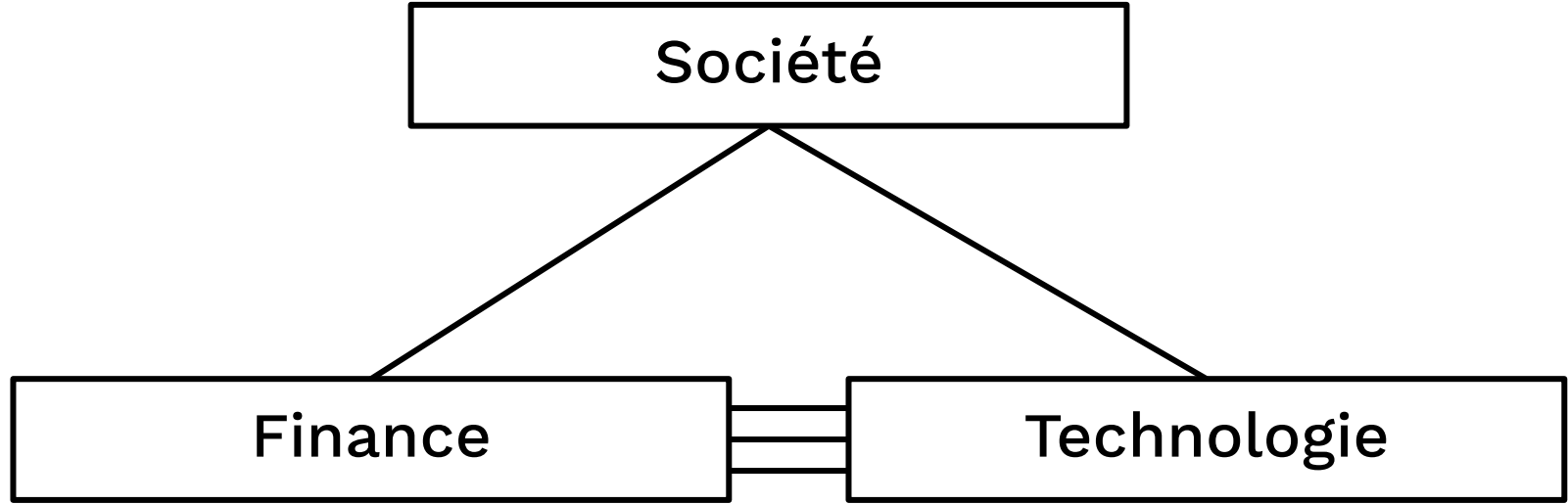
Finance et technologie



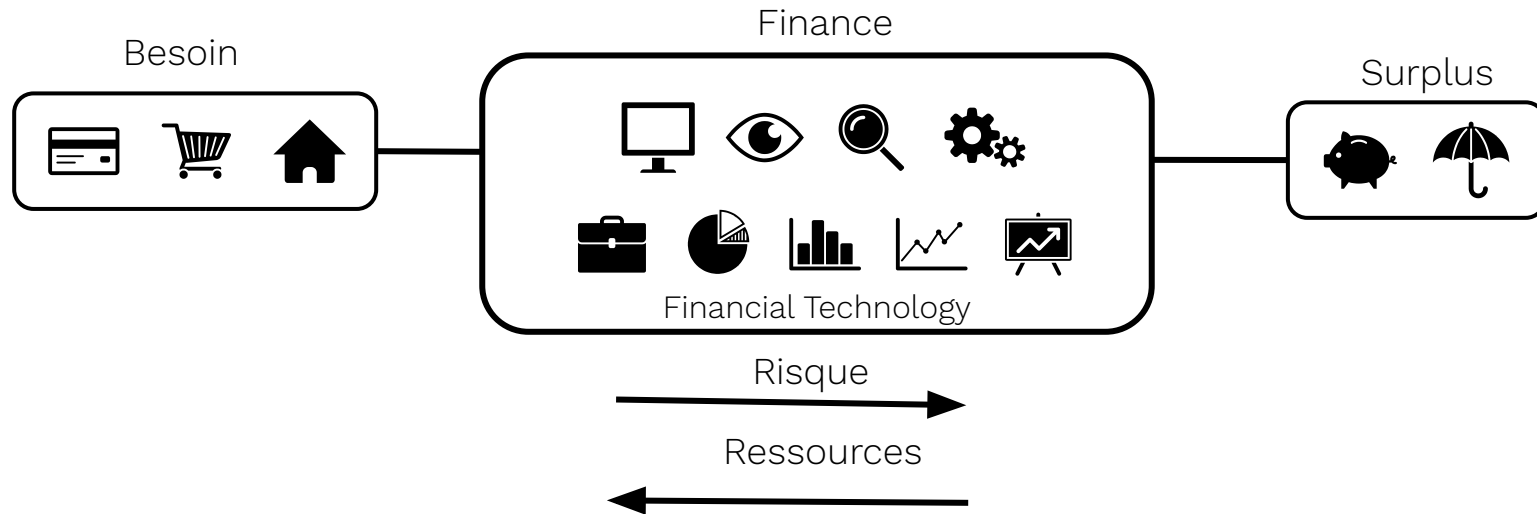
Finance et technologie

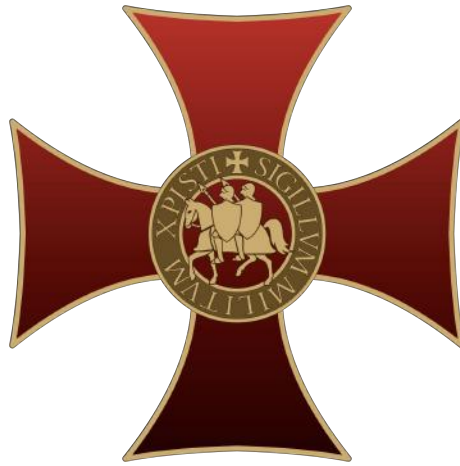
D'autres exemples historiques

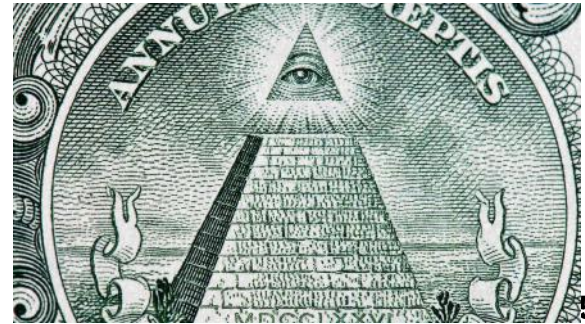
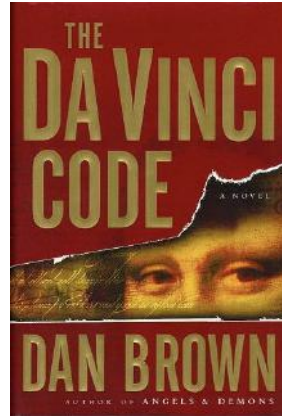
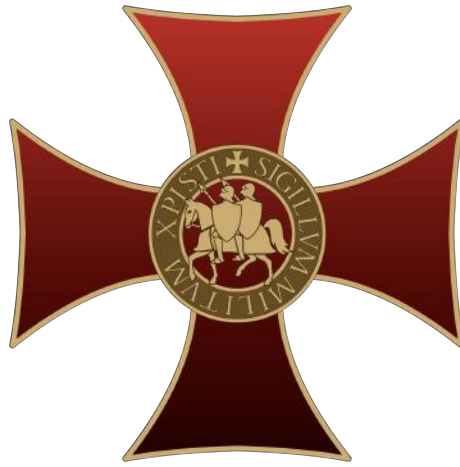
- Invention de l'écriture au Moyen-Orient pour l'établissement de contrats financiers
- Établissement des premiers modèles complexes de risque et de temps principalement initiés par des besoins financiers
- L'âge d'or d'Athènes fut en partie construit sur sa gestion des litiges financiers
- L'organisation du vaste empire de la Chine antique ne fut possible que grâce à sa tradition financière unique
- Les vagues d'exploration européenne ne furent possibles que grâce aux analyses poussées de risque et des mécanismes financiers correspondants
- L'invention de nouvelles structures financières telles que la société par actions ont permis l'agrégation de capitaux pour une économie internationale
- La finance fut un cofacteur principal de la Révolution Industrielle
- Au 20^{ème} siècle, les marchés de capitaux ont démocratisé l'investissement et stimulé des solutions pour les problèmes sociaux majeurs: sécurité sociale, fonds souverains, comptes d'épargne, etc.



Finance Moderne







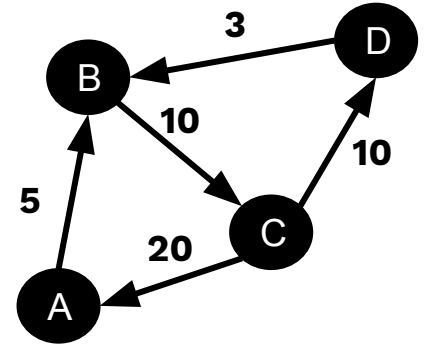
Les Templiers



Les Templiers



Les Templiers

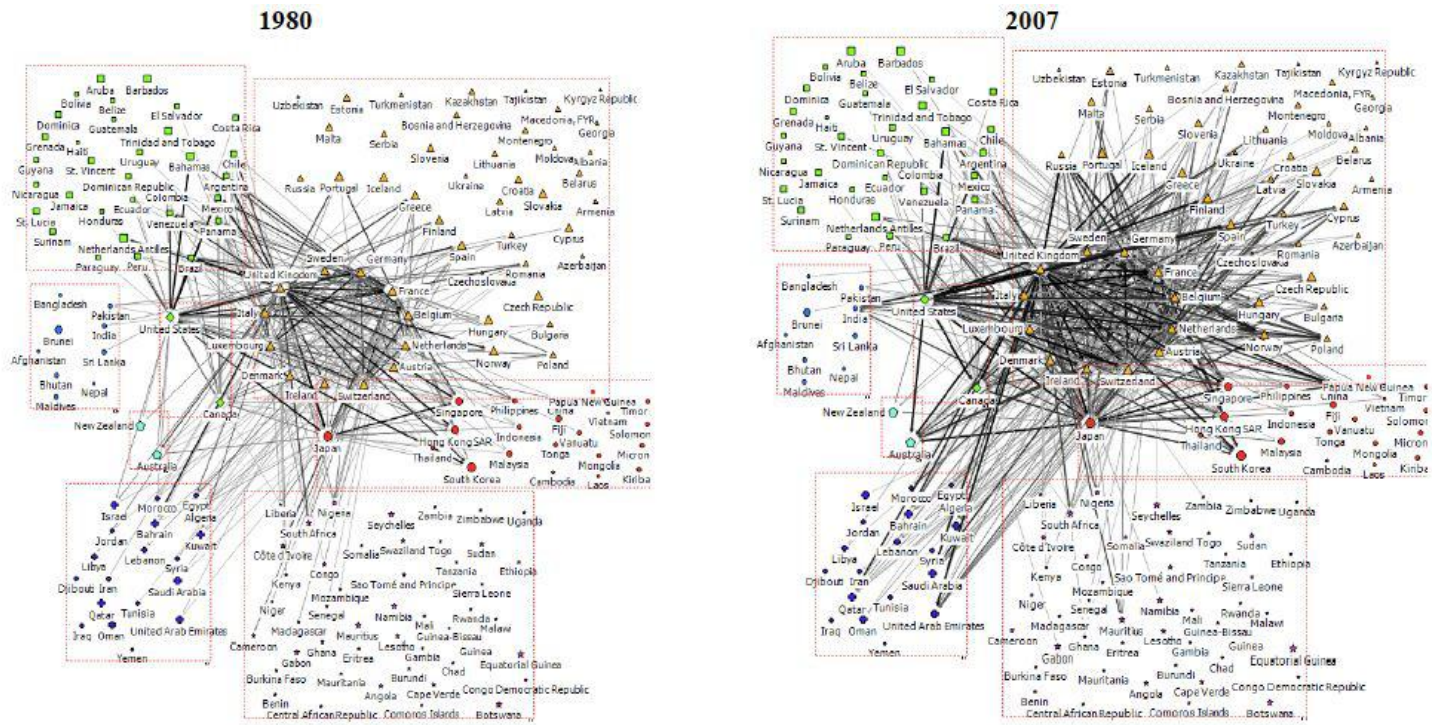


Finance moderne

2017

PIB Mondial	~ 80 Tr \$	World Bank
Dette Mondiale	~ 170 Tr \$	McKinsey
Dérivés Mondiale	~ 520 Tr \$	BIS

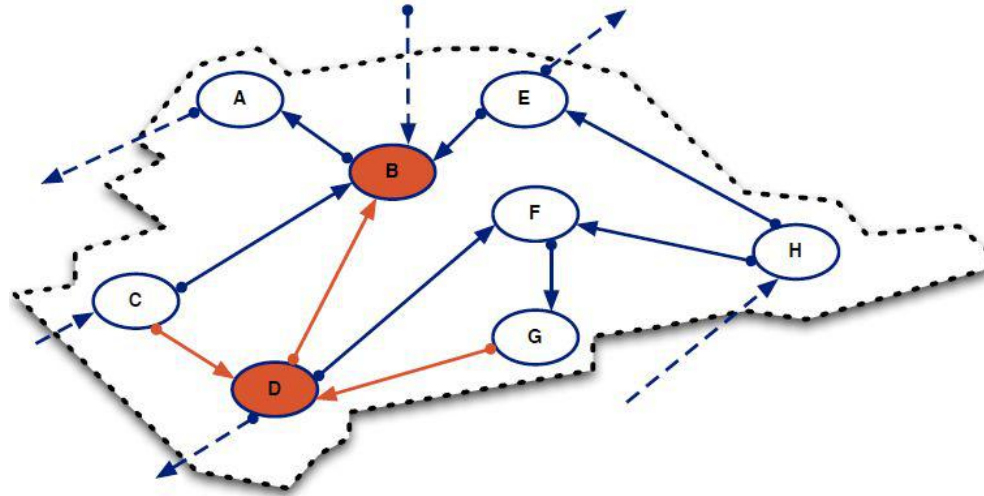
Finance moderne



Crise financière



Risque systémique

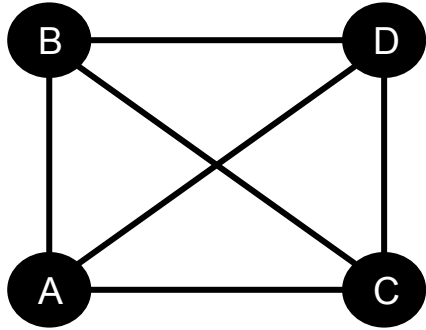


Default cascades in complex networks: Topology and systemic risk.

Roukny, Tarik, Hugues Bersini, Hugues Pirotte, Guido Caldarelli, and Stefano Battiston.

Nature Scientific reports 3 (2013): 2759.

Risque systémique

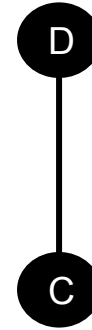
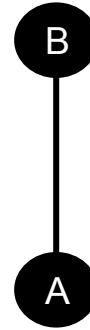
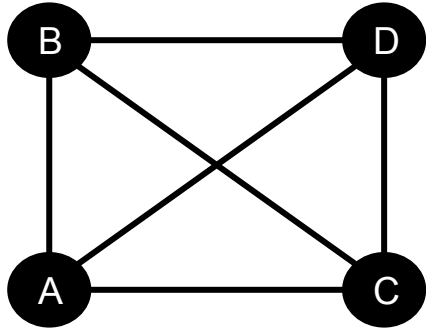


Default cascades in complex networks: Topology and systemic risk.

Roukny, Tarik, Hugues Bersini, Hugues Pirotte, Guido Caldarelli, and Stefano Battiston.

Nature Scientific reports 3 (2013): 2759.

Risque systémique



Robuste-mais-fragile

Default cascades in complex networks: Topology and systemic risk.

Roukny, Tarik, Hugues Bersini, Hugues Pirotte, Guido Caldarelli, and Stefano Battiston.

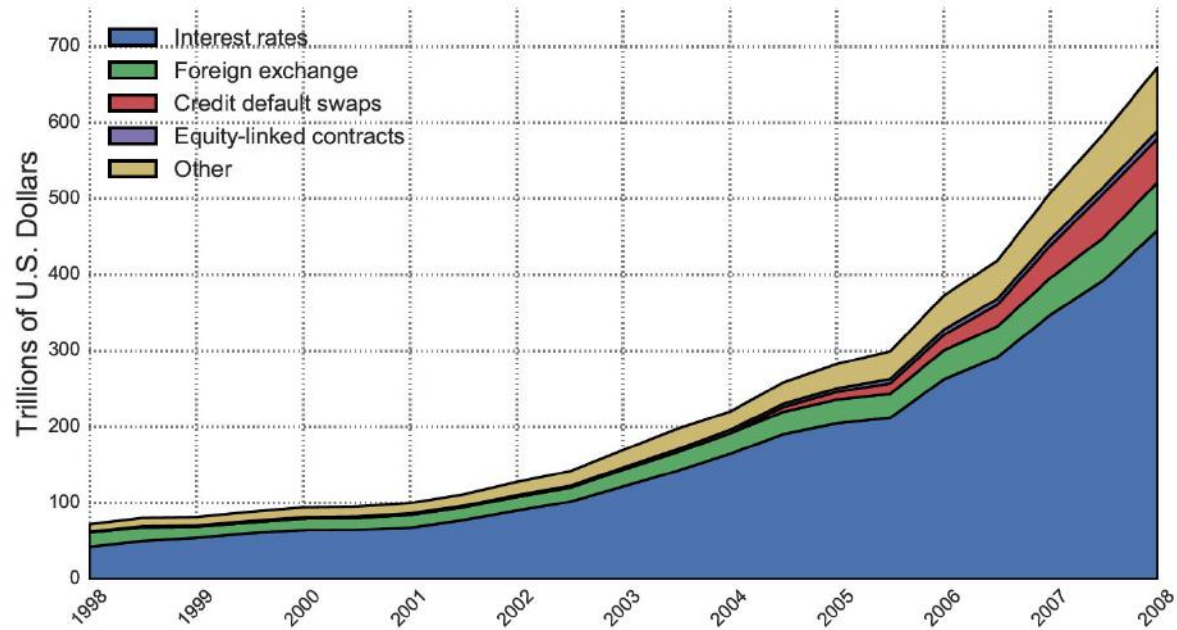
Nature Scientific reports 3 (2013): 2759.

Réforme globale



Transparence des marchés

Size of OTC derivatives markets

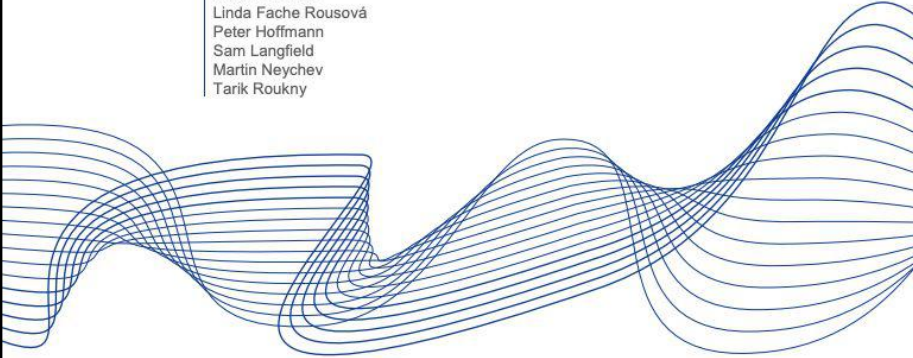



Transparence des marchés

Occasional Paper Series
No 11/ September 2016

Shedding light on dark markets:
First insights from the new EU-wide
OTC derivatives dataset

by
Jorge Abad
Iñaki Aldasoro
Christoph Aymanns
Marco D'Errico
Linda Fache Rousová
Peter Hoffmann
Sam Langfield
Martin Neychev
Tarik Roukny

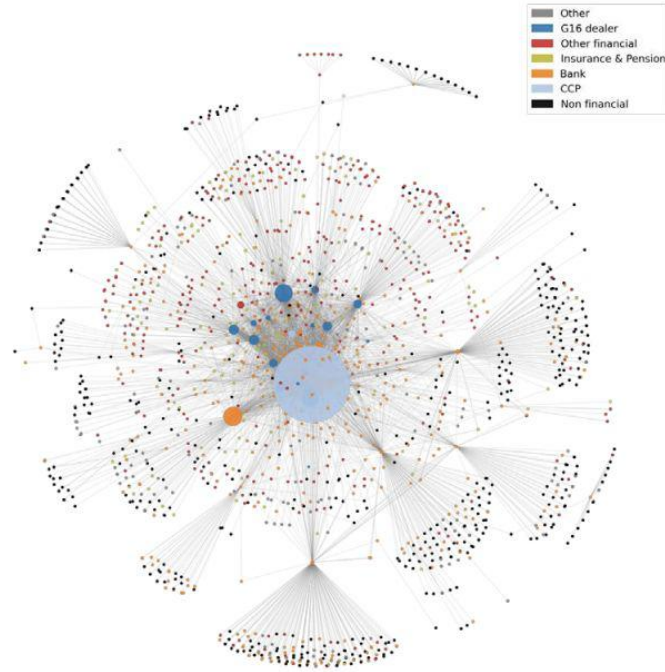


 **ESRB**
European Systemic Risk Board
European System of Financial Supervision

Transparence des marchés

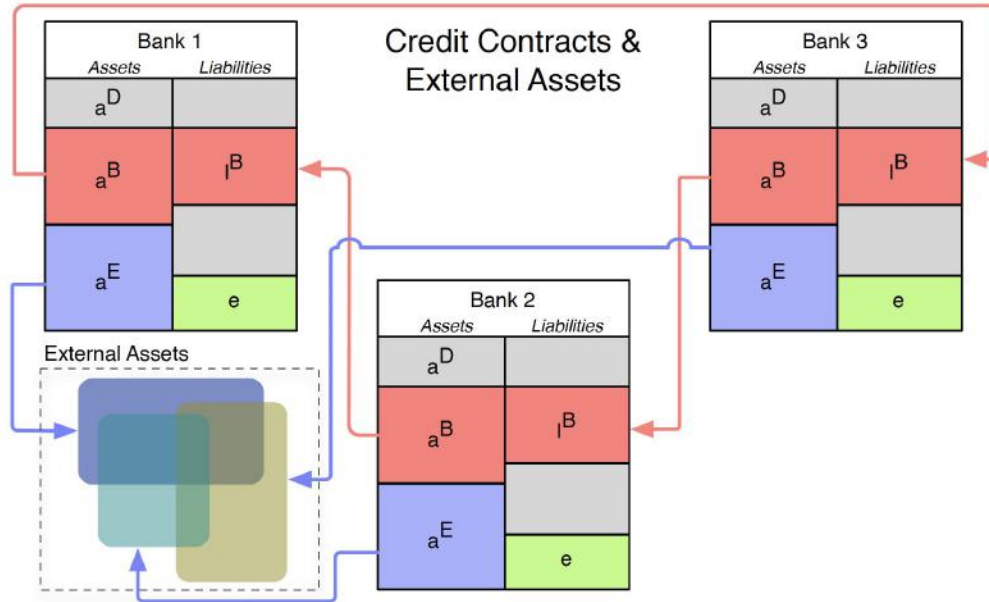
Chart 15

Network of gross notional links between counterparties in a subset of the IRS market
(based on Euribor 6M interest rate swaps with an original maturity of 10 years)

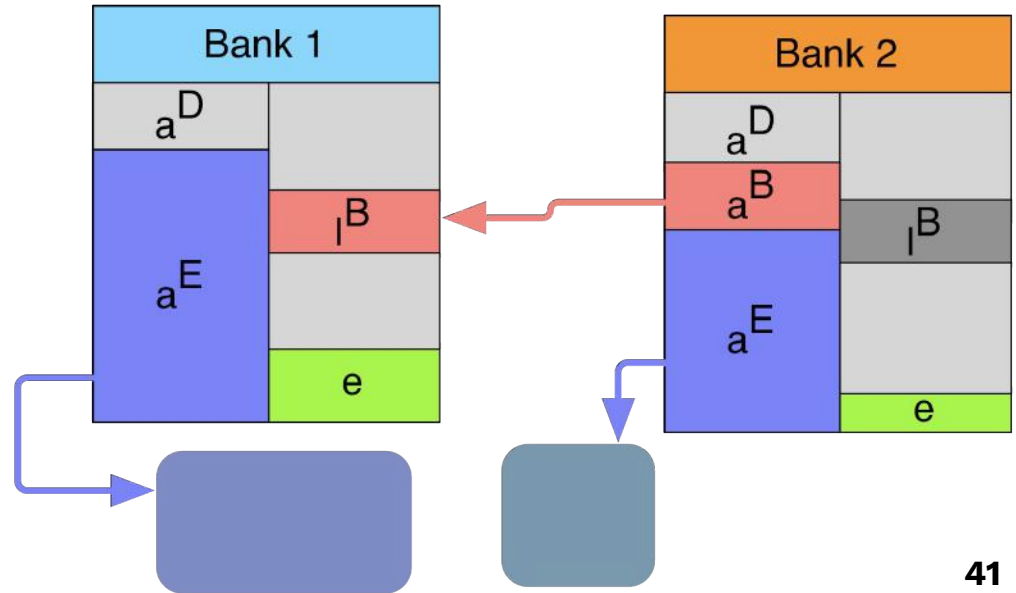


Note: Undirected unweighted network representation of 10-year plain-vanilla 6M Euribor IRS with a 10-year maturity. Source: DTCC OTC interest rate derivatives dataset (based on the 02/11/15 trade state report).

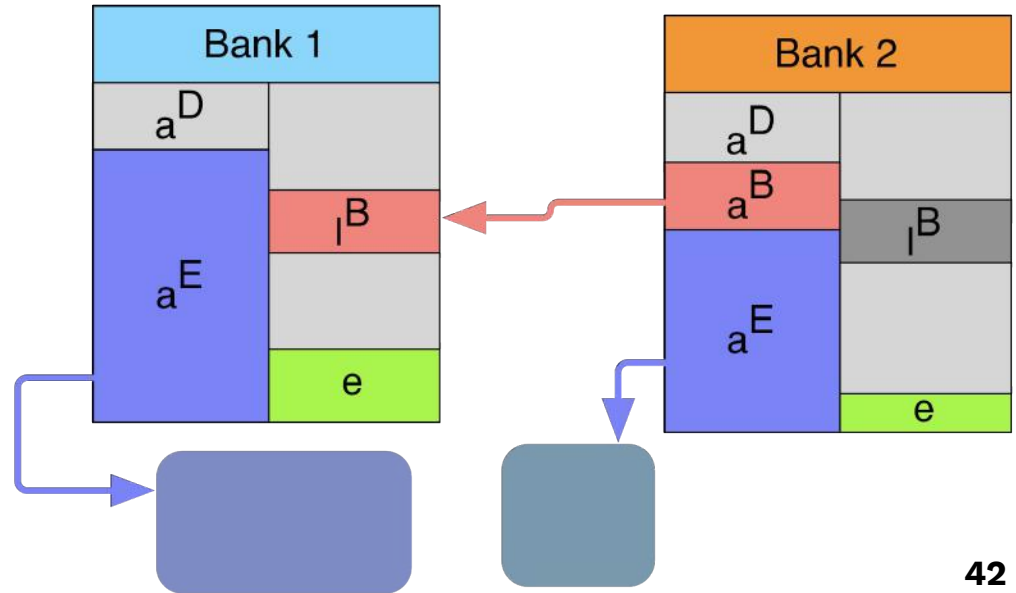
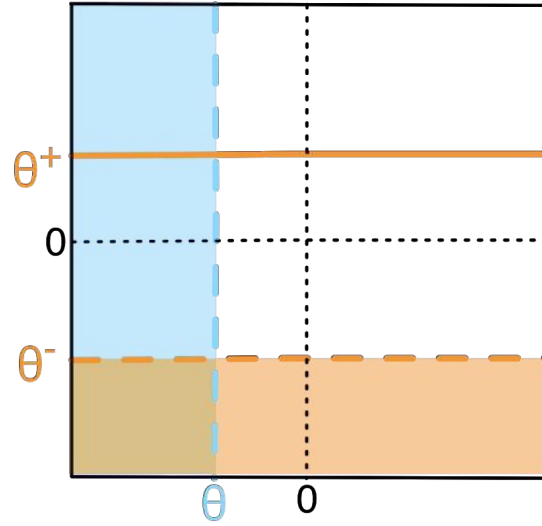
Observation du système



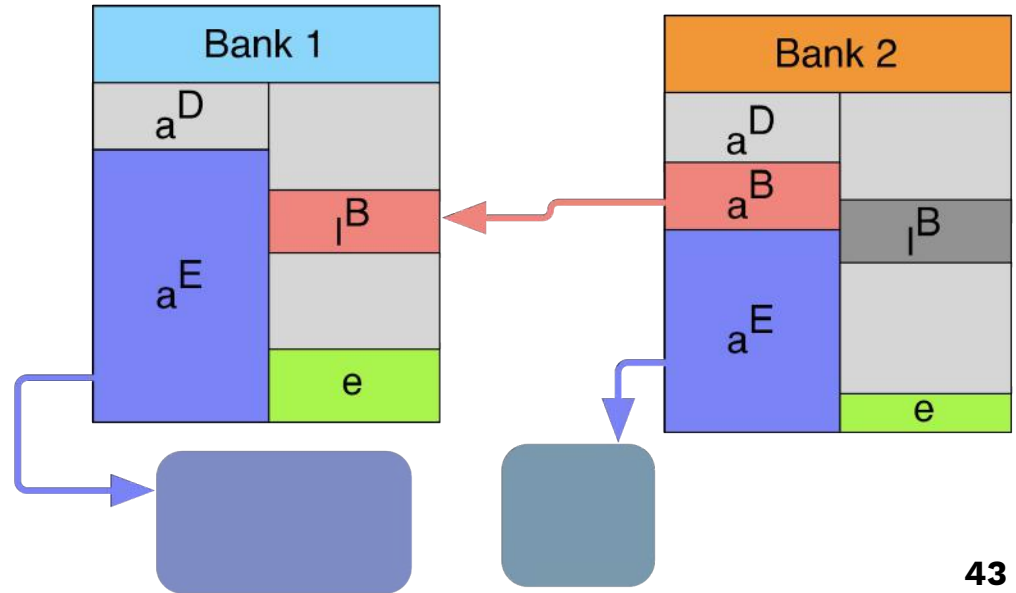
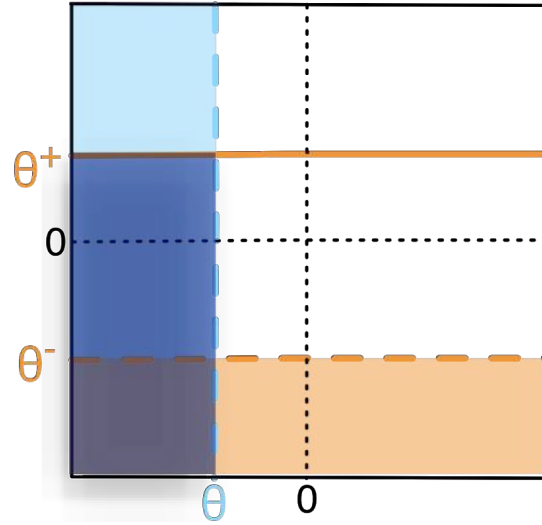
Interconnectedness as a source of uncertainty in systemic risk
 Roukny Tarik, Stefano Battiston and Joseph Stiglitz
 Journal of Financial Stability



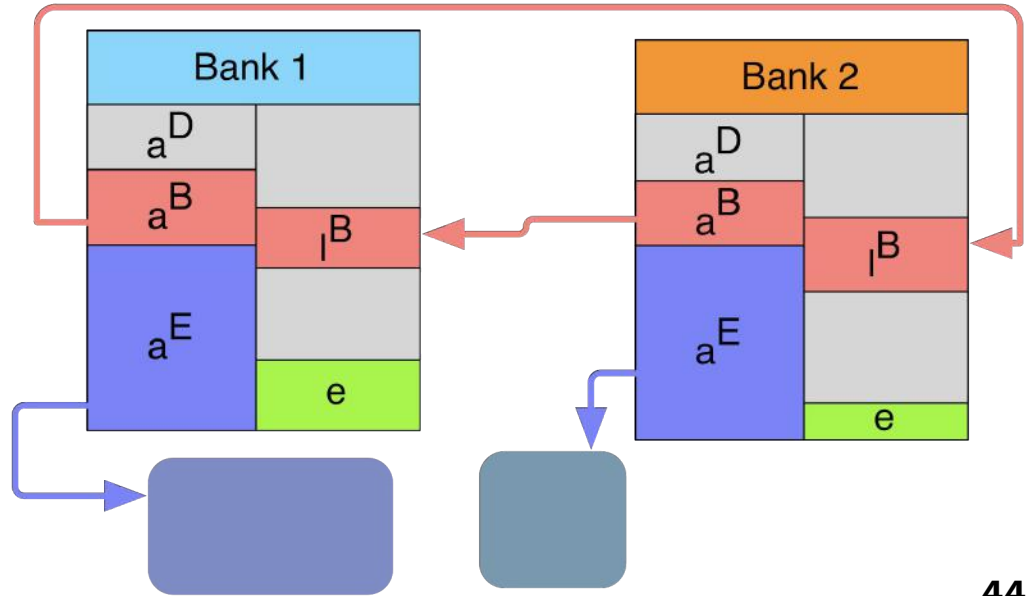
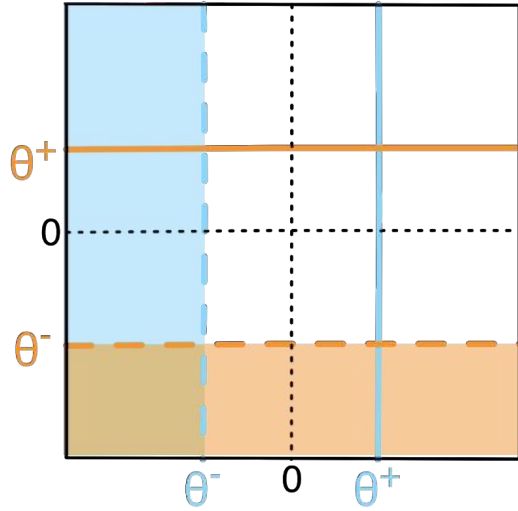
Shock Space



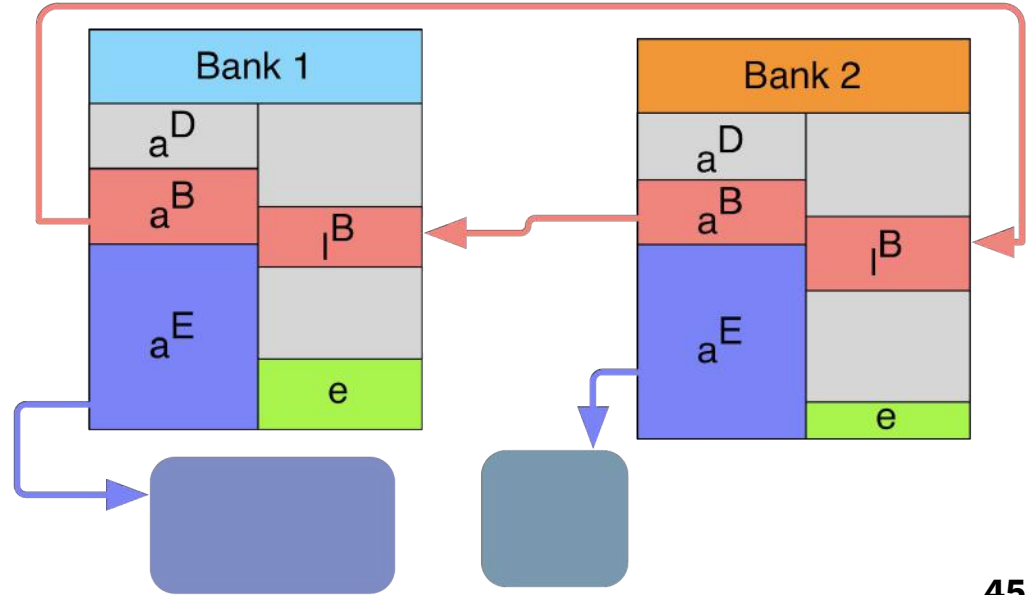
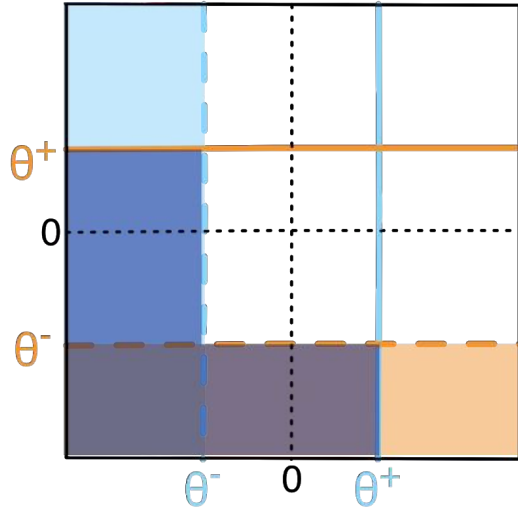
Shock Space



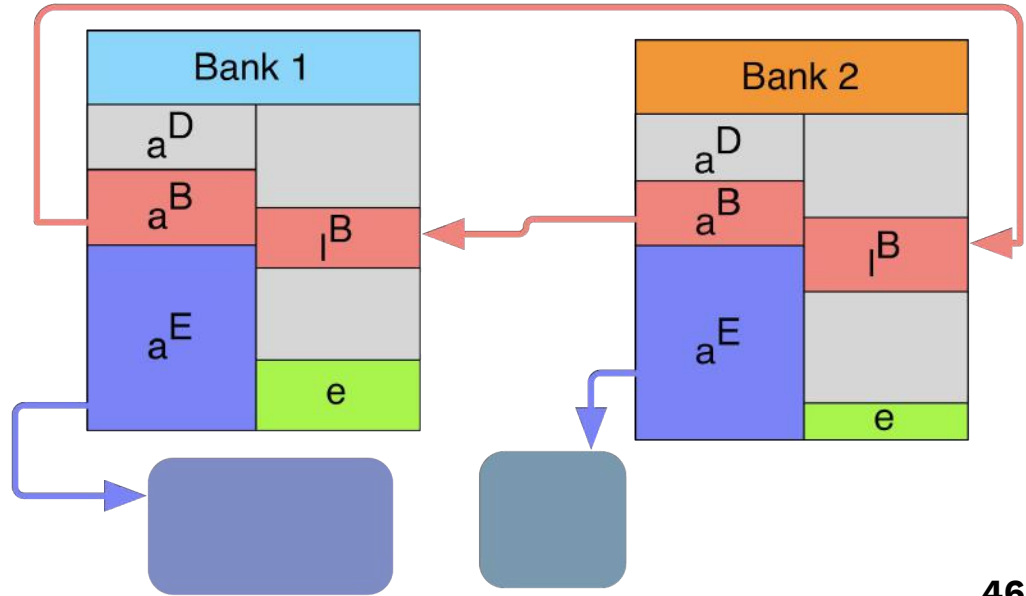
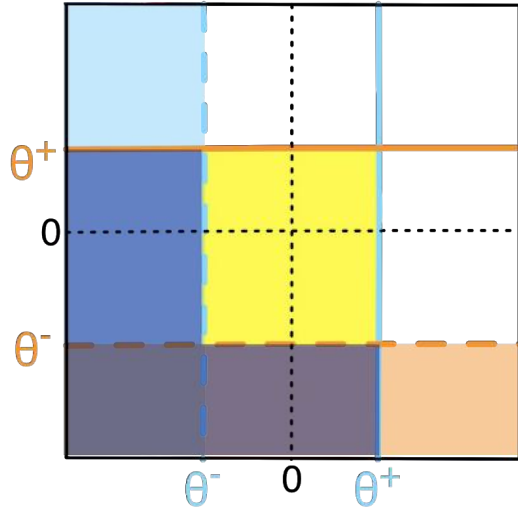
Shock Space



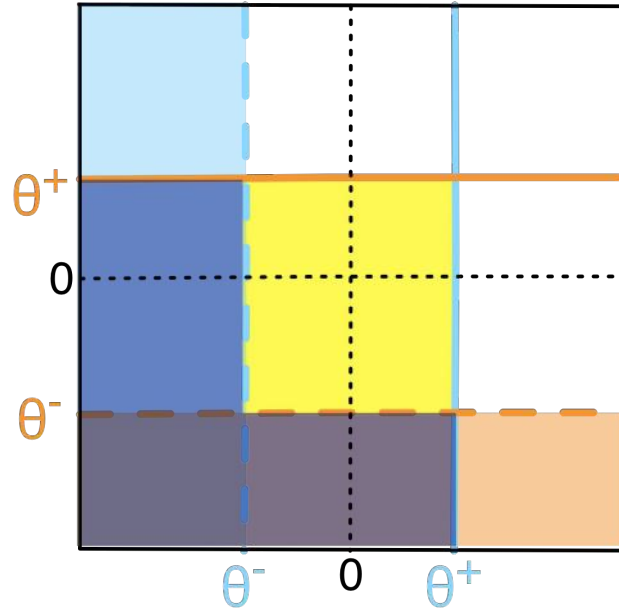
Shock Space



Shock Space



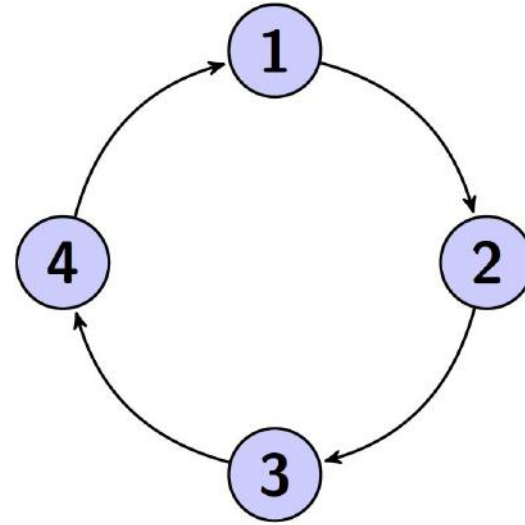
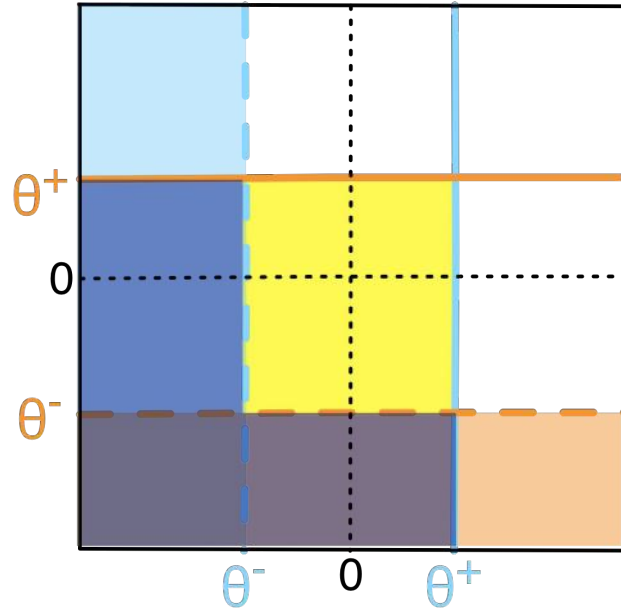
Shock Space



We will do whatever it takes

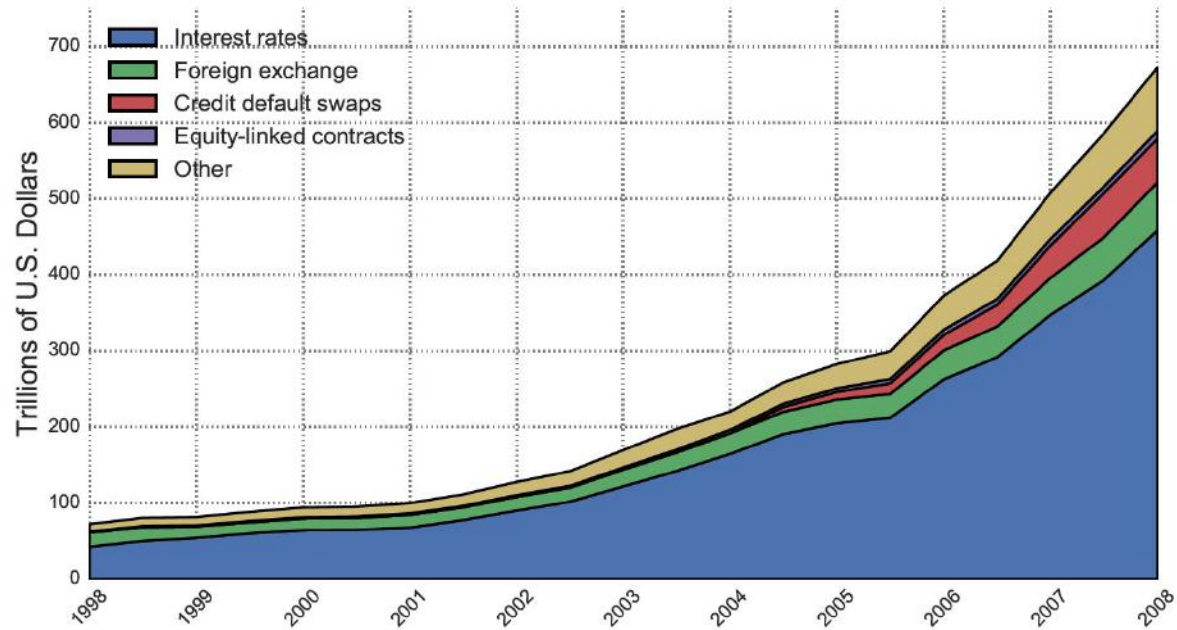


Shock Space

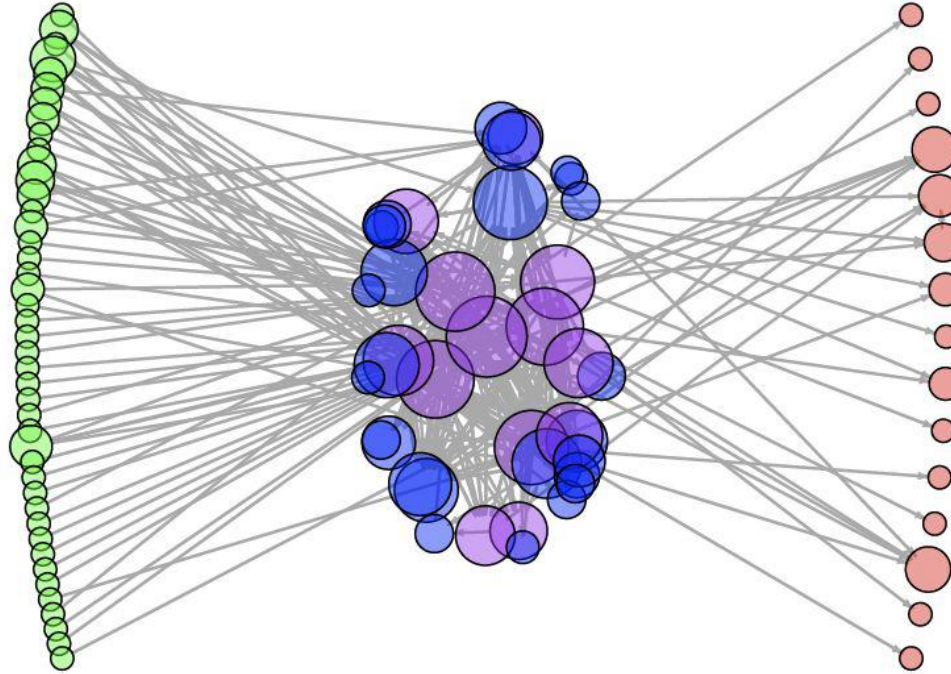


Map des marchés

Size of OTC derivatives markets

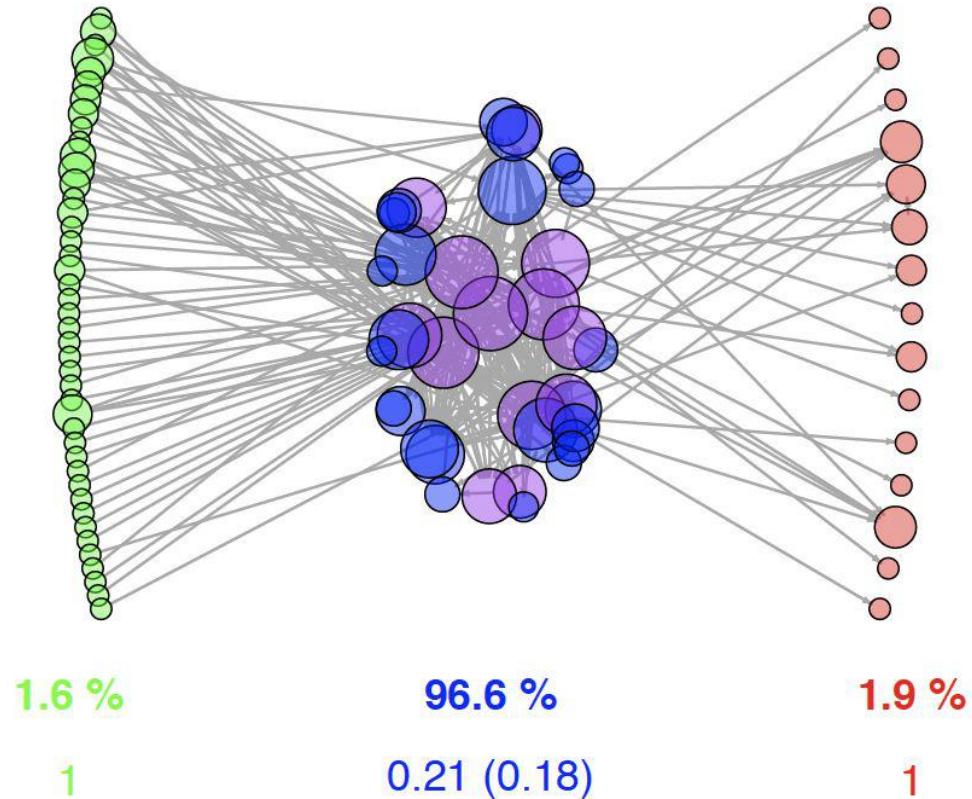


Map des marchés

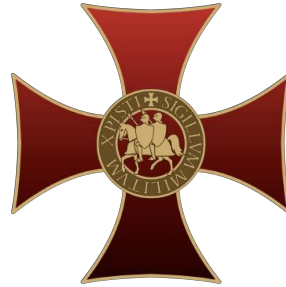


Compressing over-the-counter markets
D'Errico Marco and Roukny Tarik
European Systemic Risk Board Paper

Map des marchés



Solution Templiers



Clearing and settlement [+ Add to myFT](#)

OTC derivatives shrink to lowest level since financial crisis

Banks utilise trade compression strategy which has been 'key driver' in fall, according to BIS

BANK FOR INTERNATIONAL SETTLEMENTS
BANQUE DES RÈGLEMENTS INTERNATIONAUX
BANK FÜR INTERNATIONALEN ZAHLUNGS AUSGLEICH
BANCA DEI REGOLAMENTI INTERNAZIONALI

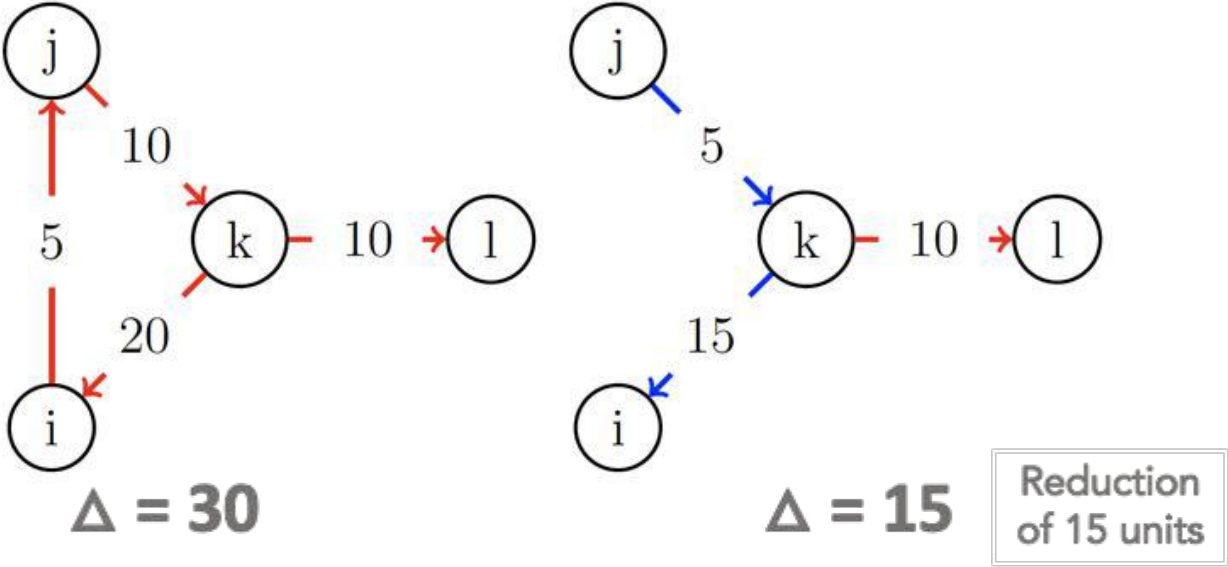
© Getty

Joe Rennison in New York MAY 5, 2016

Credit derivatives

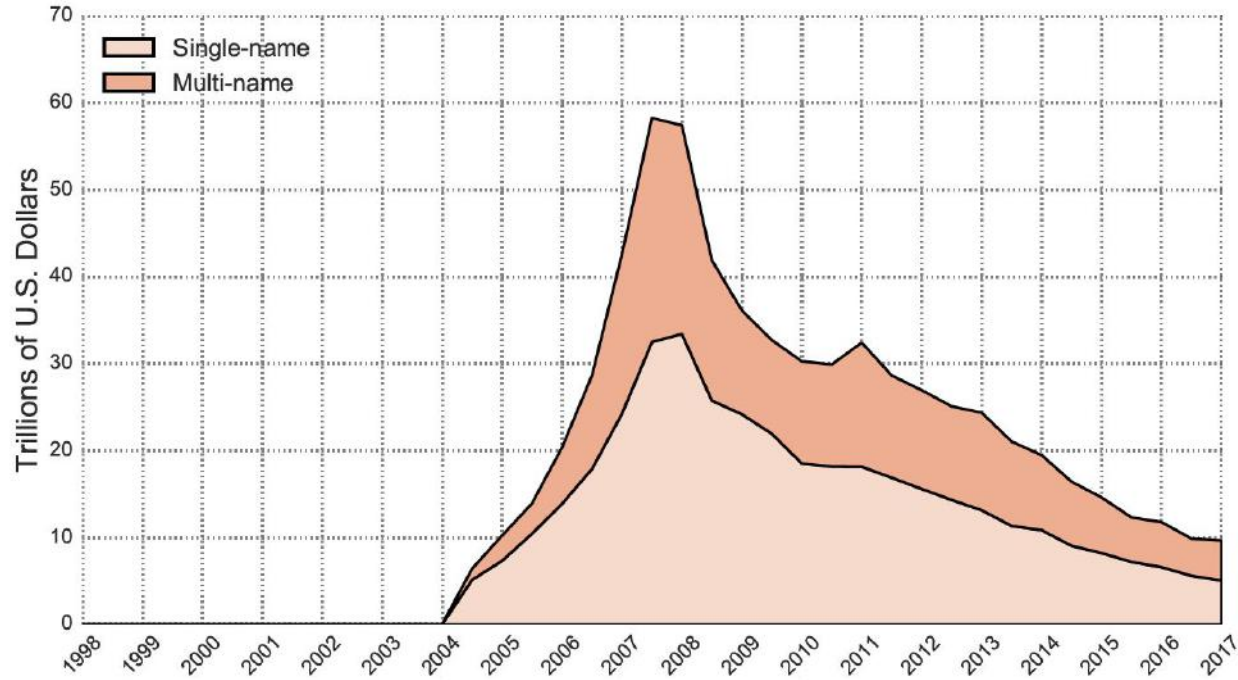
The great untangling

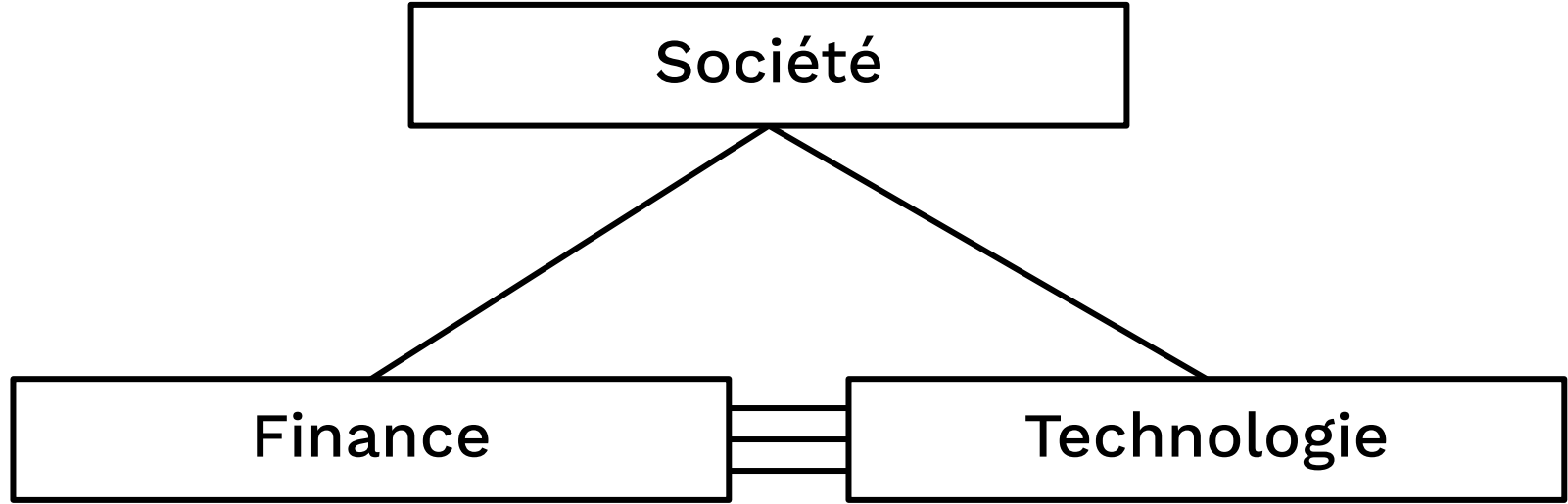
Compression des marchés



Compression des marchés

Size of OTC CDS markets





La suite ...



La suite ...



Bitcoin



Ethereum



Ripple



Litecoin



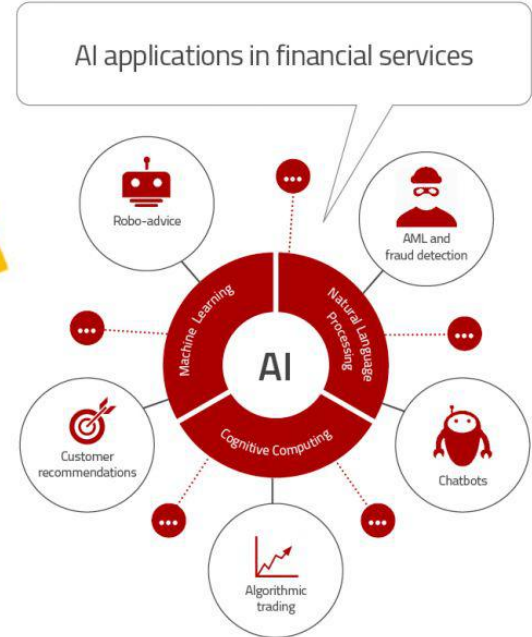
Dash



IOTA



Monero



Merci!