The Financial Crises of the 21st Century

Workshop of the Austrian Research Association
(Österreichische Forschungsgemeinschaft)

18. - 19. 10. 2012

Towards a Unified European Banking Market

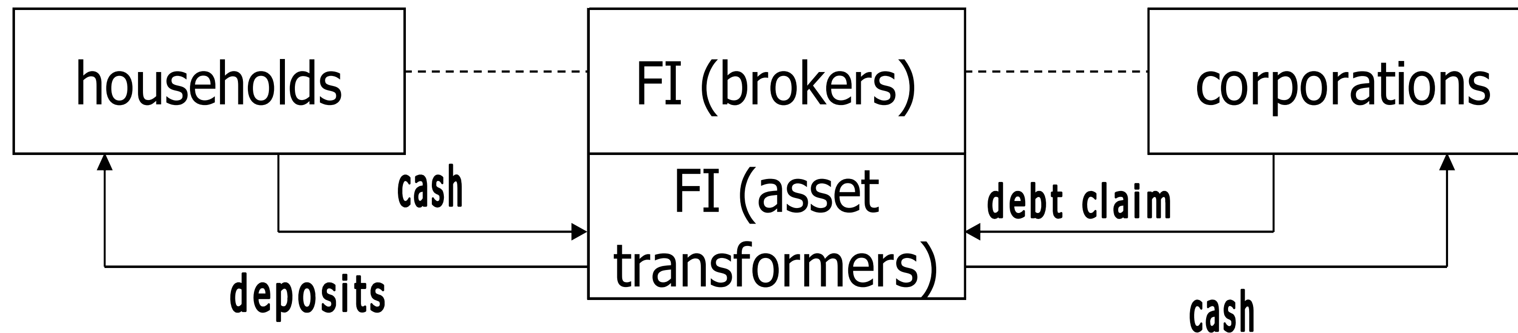
Univ.Prof. Dr. Josef Zechner
Institute for Finance, Banking and Insurance
Vienna University of Economics and Business
josef.zechner@wu-wien.ac.at

Agenda

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Traditional versus modern banking
- The case for bank regulation
  - Dealing with „limited liability“
    - Capital requirements
    - Bank resolution
  - Dealing with „Too big to fail“
    - Regulating SIFIs
    - Restricting universal banking
    - Bank resolution
    - Improving trading platforms
- Conclusion

Traditional Banking



- Banks intermediate between transactors in financial claims with complementary needs.

- Banks are “asset transformers”. They “purchase” debt claims from firms and pass them on to households in the form of secondary securities. Secondary securities exhibit more attractive features for investors (shorter maturities, more liquidity; borrowers are monitored etc.).

Traditional Banking and the Case for Regulation

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- "Asset Transformation" subject to intrinsic instability: if many investors simultaneously rely on the asset transformation promised by the bank, e.g. withdraw deposits, then the bank is insolvent → asset transformation breaks down
- Given that many other bank customers "run", it becomes individually rational for the remaining customers to "run" → withdrawal of deposits → bank insolvency.
- Standard regulatory response: deposit insurance!

EFMD EQUIS ACCREDITED

Today’s banking model

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Today we face different “Bank Run“ risks due to new banking business models.
- Important business areas:
  - Brokerage (market making) in primary and secondary securities markets
  - Brokerage (market making) in the OTC derivatives market
  - Prime brokerage business, securities sales

EFMD EQUIS ACCREDITED

Today’s banking model: Relying on the Repo market

- Many of these new business lines imply that banks must hold large inventories of securities
- The lion‘s share of these inventories is funded via REPOs, i.e. loans, where the securities are used as collateral; usually a clearing bank is in between:
- Initiation of a Repo:

- Closing the Repo:

Asset Transformation "New" and the Fragility of Banking

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Market Making: up to 98% (=Haircut) of securities can be funded via Repos.
  - Rumors about bank's solvency → some counterparties may refuse to roll over the REPO.
  - → fire sales of securities– price effect → higher hair cuts → death spiral.
- Prime-Brokerage as a funding source:
  - Rumors about bank's solvency→ some clients look for a different prime broker → refinancing gap increases.
- OTC business
  - Rumors about bank's solvency → some counterparties of OTC contracts wish to reduce exposure to the bank (novation)
  - → withdrawal of collateral and cash, → refinancing gap increases
- → default

EFMD EQUIS ACCREDITED

Asset Transformation "New" and the Fragility of Banking

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- New types of „bank Runs": not linked to bank loans or deposit runs.
- Cannot be addressed via deposit insurance
- → new challenges for regulators and supervisors.

EFMD EQUIS ACCREDITED

The problem with bank regulation: Time inconsistency

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- If a bank is in distress: Regulator/supervisor wishes to avoid a "run". Message: keep your deposits, keep rolling your REPOs, if something goes wrong, we will bail out the bank and you will be safe!
- Ex ante: this creates adverse incentives: depositors or other debtors have no incentive to monitor and/or mitigate the bank's risk taking ex ante!
- But equityholders generally like more risk due to limited liability → too much leverage, too risky investments, excess transformation
- This effect is exaggerated if banks are "too big to fail" (TBTF), i.e. if government/regulator is unwilling to let a bank default due to systemic risk, lobbying etc.

EFMD EQUIS ACCREDITED

Regulating banks

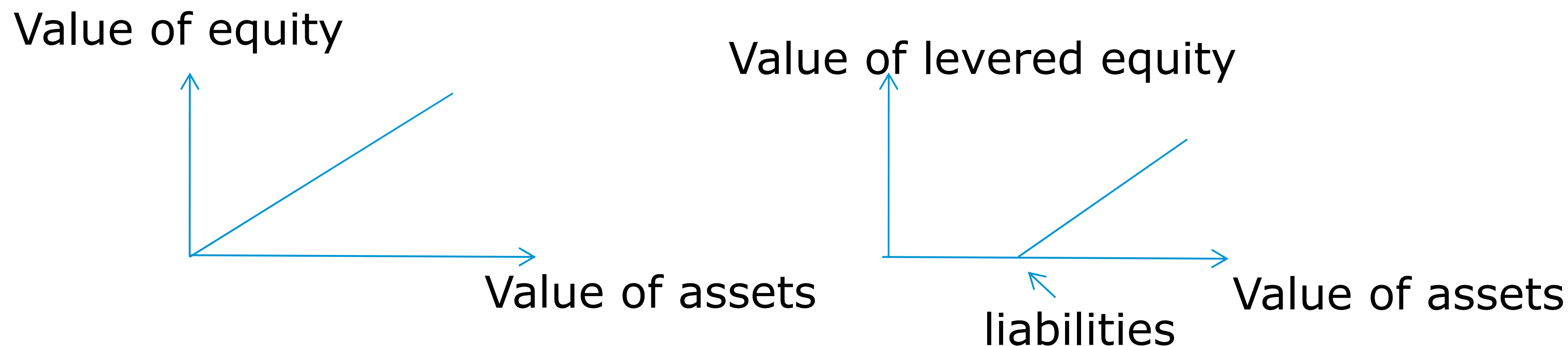
WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Good bank regulation requires dealing with
  I. limited liability and
  II. too big to fail

EFMD EQUIS ACCREDITED

Limited Liability and leverage

- Unlevered vs. levered equity: levered equity is an option!



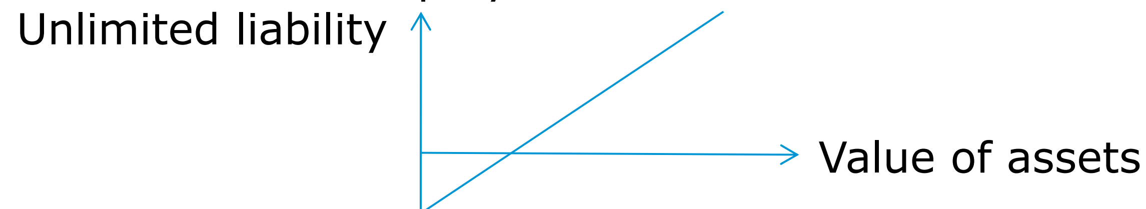
- Value of an option increases with risk!!!
- → limited liability increases risk incentives
- The higher the leverage, the stronger this risk incentive becomes. Banks are highly levered!

Limited liability: a relatively young phenomenon!

WU WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- 1840: equity financing of US Banks > 50%! Since then proportion of equity financing ↓
- UK: until 1855 limited liability corporations only possible via decision of parliament
- Limited Liability Act 1855 did not apply to banks and insurance companies. USA: frequently unlimited liability by shareholders until 1944.

Value of levered equity:



- Eliminates risk incentives BUT: unlimited liability makes securities markets very opaque!

EFMD EQUIS ACCREDITED

Dealing with limited liability risk incentives

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

a. More equity
b. Contingent capital (CoCos)
c. Early resolution of bank distress

EFMD EQUIS ACCREDITED

Mitigation of Limited Liability Effects: More Equity Capital!

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Why not just more equity?
- Banks have very high leverage – does this have to be so?
- Admati et al (2012): No!
- Starting point: Modigliani Miller theorem → without frictions, capital structure is irrelevant! True even if $r_E > r_D$.
- But: bankers argue that this is not true in practice!

EFMD EQUIS ACCREDITED

Is equity too expensive in practice?

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Higher equity requirements→ credit crunch?

  "More equity might increase the stability of banks. At the same time however, it would restrict their ability to provide loans to the rest of the economy. This reduces growth and has negative effects for all."

  -- Josef Ackermann, former CEO of Deutsche Bank

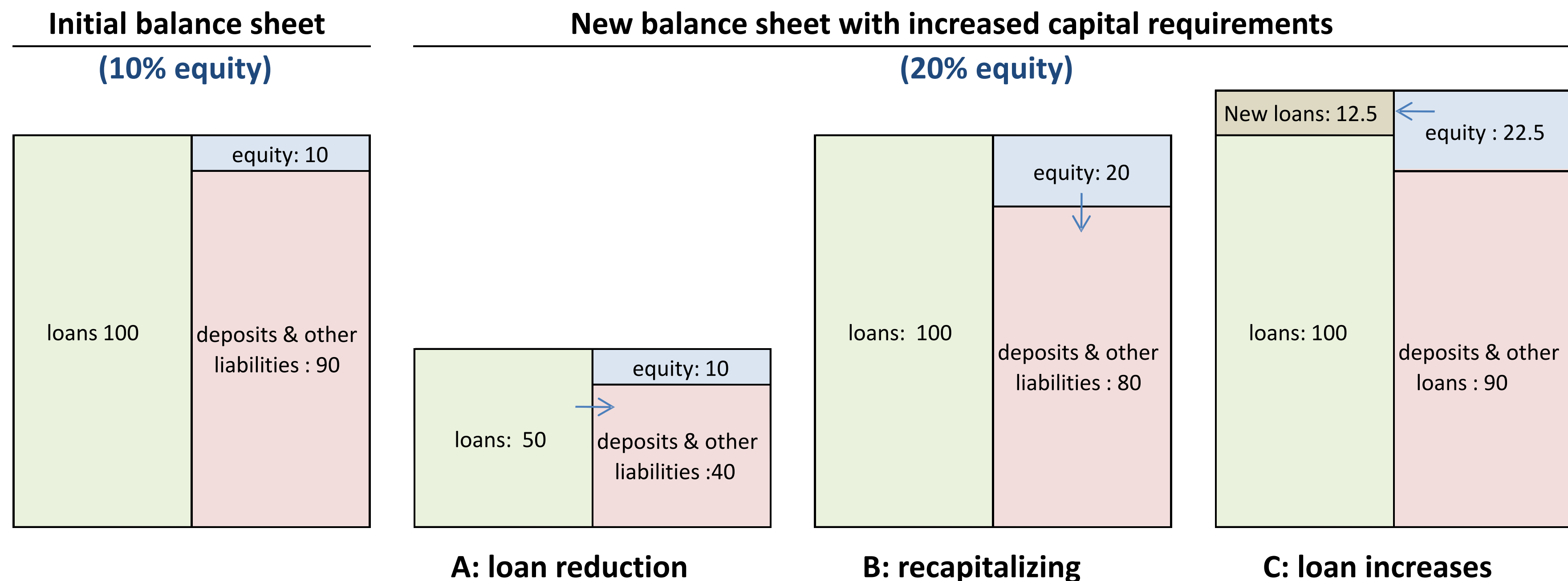
  "Demands to increase capital will require the UK's banking industry to hold an extra 600bn pounds of capital that might otherwise have been deployed as loans to businesses or households."

  -- British Bankers' Association

EFMD EQUIS ACCREDITED

Capital structure: fallacies

- Increased capital requirements do NOT need to imply loan reductions:



But: There are good arguments why equity is "more expensive" than debt for the individual bank

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Tax benefits of debt (why is this not discussed more?)
- The "Putoption" that society has written on large banks (Bailout).
- Both arguments are relevant for the individual bank but not so for society!

EFMD EQUIS ACCREDITED

Dealing with limited liability risk incentives

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- ✓ More equity
- b) Contingent capital (CoCos)
- c) Early resolution of bank distress

EFMD EQUIS ACCREDITED

Contingent Convertibles (CoCos)

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Banks issue debt that converts to equity if certain triggers are reached
- → no new capital needs to be raised in bad times!
- But how should the „triggers” be defined?
- Simple trigger:
  - E.g. if balance sheet equity violates a lower bound
  - Or: if market value of equity violates a lower bound
- Dual trigger:
  - Bank specific: balance sheet equity or market value of equity violates a lower bound
  - *AND* sector specific: if the banking sector in general performs poorly

EFMD EQUIS ACCREDITED

Problems with triggers

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Balance sheet based:
  - Only annual data! Backward looking; political pressure, subject to manipulation,
- Rating-based triggers:
  - ratings have questionable quality; agencies may not rate such a security
- Markt-based triggers:
  - May be subject to manipulation
  - Prices may reflect multiple equilibria
- Trigger defined by supervisory agency (Liikanen Group)
  - May create additional “run” risk

EFMD EQUIS ACCREDITED

Dealing with limited liability risk incentives

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- ✓ More equity
- ✓ Contingent capital (CoCos)
- c. Early intervention and resolution

EFMD EQUIS ACCREDITED

Dealing with limited liability effects: improving recovery and resolution

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Problem: if a bank gets into distress, default is usually very complicated
  - Not clear which other institutions would be adversely affected
  - General bankruptcy rules are not well suited for banks: Banks are forced into default very late!
  - → application of regular bankruptcy rules makes government bailouts more likely ex post → makes limited liability effects worse ex ante!

EFMD EQUIS ACCREDITED

Recovery and resolution of credit institutions

- Early resolution (i.e. when asset value > liabilities) leads to lower risk incentives ex ante
- Bank equity is partly concave in asset value → risk averse

- If junior debtholders are also (partly) "loss absorbing" during early resolution → they also have more incentives to mitigate risk ex ante
- Probably main issue: many banks are viewed to be too big to fail! i.e. regulator does not dare to trigger early resolution, even if the legal basis is there!

Regulating banks

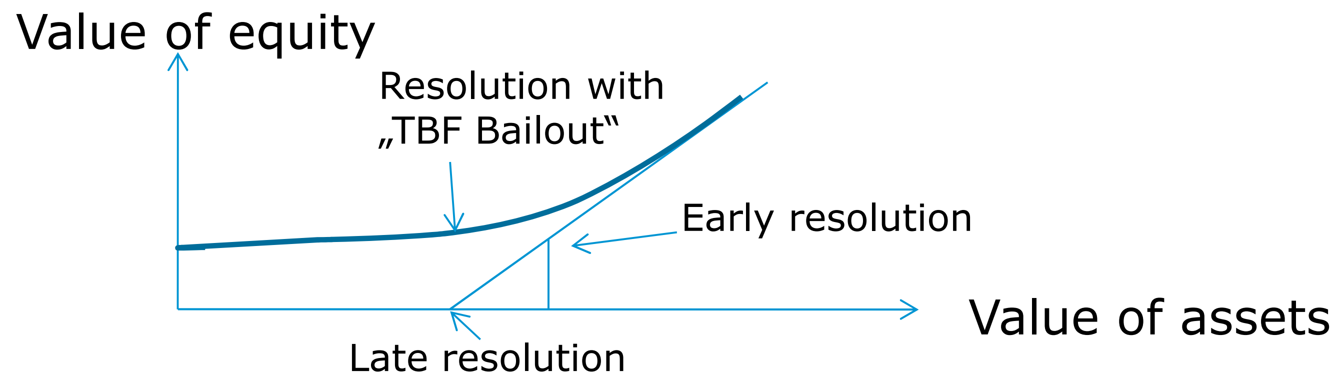
WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Good bank regulation requires dealing with
  - ✓ limited liability and
  - II. too big to fail

EFMD EQUIS ACCREDITED

Effect of TBTF

- Too big to fail



- TBTF → equityholders have even more risk shifting incentives and lenders (depositors etc.) also have no incentive to limit risk taking

Dealing with "Too Big to Fail" (TBTF)

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

1. Limit the scale of institutions
2. Limit scope of institutions
3. Make recovery and resolution of banks in distress "smoother", i.e. mitigate effects on the "system"
4. Improve trading platforms (remember the new banking model…)

EFMD EQUIS ACCREDITED

Dealing with TBTF: Limit the scale of institutions

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Suggested definition of global systemically important financial institutions (G-SIFIs) by Basel Committee: size, interconnectedness, complexity, lack of substitutability, global scope
- Proposal: up to 2.5% extra capital
- Is this enough? Remember: being classified as a G-SIFI or a G-SIB will also generate benefits (everybody knows: this is an institution TBTF!)

EFMD EQUIS ACCREDITED

Dealing with TBTF

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

✓ Limit the scale of institutions
2. Limit scope of institutions
3. Improve recovery and resolution of banks in distress
4. Improve trading platforms

EFMD EQUIS ACCREDITED

Dealing with TBTF: Limit scope of institutions (1)

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

Limit scope of institutions

- U.S.: Dodd-Frank Act/Volcker Rule: Prohibits banks from engaging in proprietary trading that is not at the behest of its clients, and from owning or investing in a hedge fund or private equity fund. ("Glass Steagall lite").
- Europe: no specific rules approved yet.

EFMD EQUIS ACCREDITED

Dealing with TBTF: Limit Scope of institutions (2)

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Liikanen Group: proprietary trading and all assets or derivative positions incurred in the process of market-making must be assigned to a separate legal entity, if the activities amount to a significant share of a bank's business.
- → separation into a deposit bank and a trading entity
- Both would individually be subject to all the regulatory requirements, such as capital requirements

EFMD EQUIS ACCREDITED

Dealing with TBTF: Limit Scope of institutions (3)

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Important: trading entity cannot be funded via deposits! And the liabilities of trading entities should not be allowed to be held by other banks!
- Note: Proposal of the Liikanen Group goes beyond the Volcker Rule, by including trading for market making / brokerage in activities that need to be separated

EFMD EQUIS ACCREDITED

Problems with limiting the scope of banks

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

▪

"These new regulations will fundamentally change the way we get around them."

Dealing with TBTF

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- ✓ Limit the scale of institutions
- ✓ Limit scope of institutions
- Improve recovery and resolution of banks in distress
- Improve trading platforms

EFMD EQUIS ACCREDITED

EU Directive: establishes a framework for the recovery and resolution of banks

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- Member States must appoint one or more "resolution authorities"
- Directive requires banks to draw up 'recovery plans' that set out the management actions that could be taken in the event of a deterioration
- Directive requires resolution authorities (not supervisors) to draw up a 'resolution plan' for each bank.

EFMD EQUIS ACCREDITED

Early intervention powers

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- **Early intervention powers (by supervisors)**
- if a bank does not meet the capital requirement:
  - require management to contact potential purchasers of the business.
  - appoint a "special manager"….etc.
- no specific quantitative benchmark that would trigger the availability of early intervention
- **Resolution tools (resolution authority)**
  - The sale of the business tool
  - The bridge institution tool
  - The asset separation tool
  - The bail-in tool.
- **Financing resolution**
- funds should be built up over a ten year period equal to at least 1% of the deposits of all banks in the member state.

EFMD EQUIS ACCREDITED

Dealing with TBTF

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

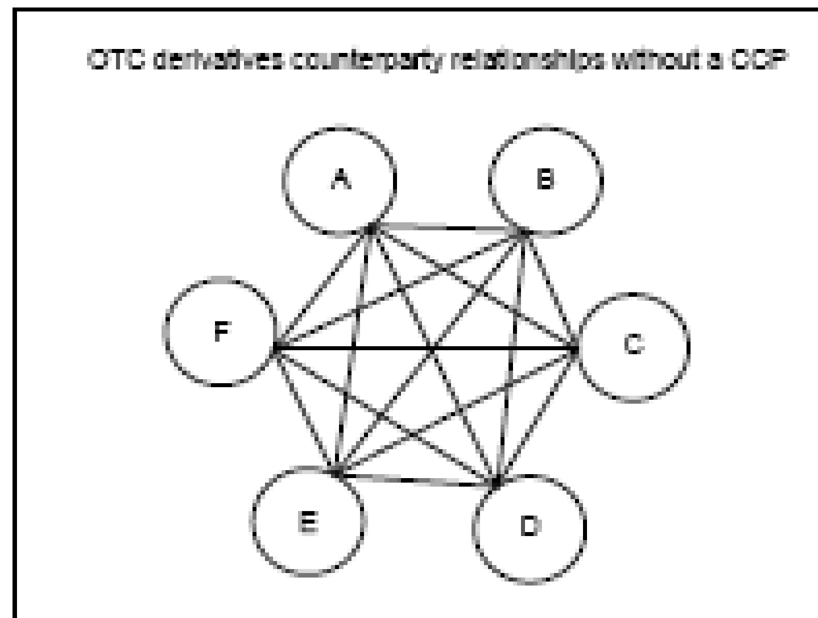
- ✓ Limit the scale of institutions
- ✓ Limit scope of institutions
- ✓ Improve recovery and resolution of banks in distress
- Improve trading platforms

EFMD EQUIS ACCREDITED

Improving trading platforms: more transparency in the OTC market

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

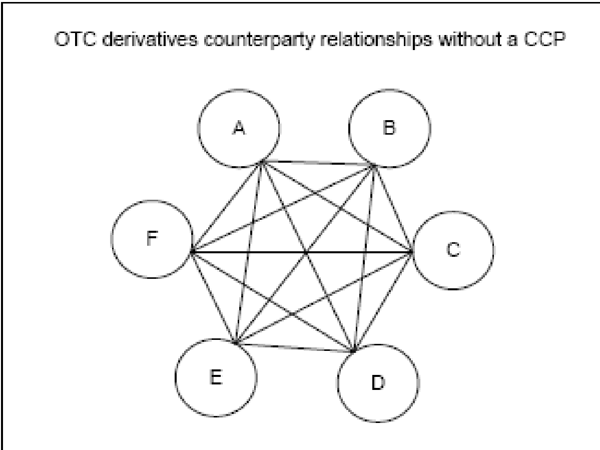
- Important problem: OTC Derivatives → opaque net of relationships→ contagion if one bank has a problem.

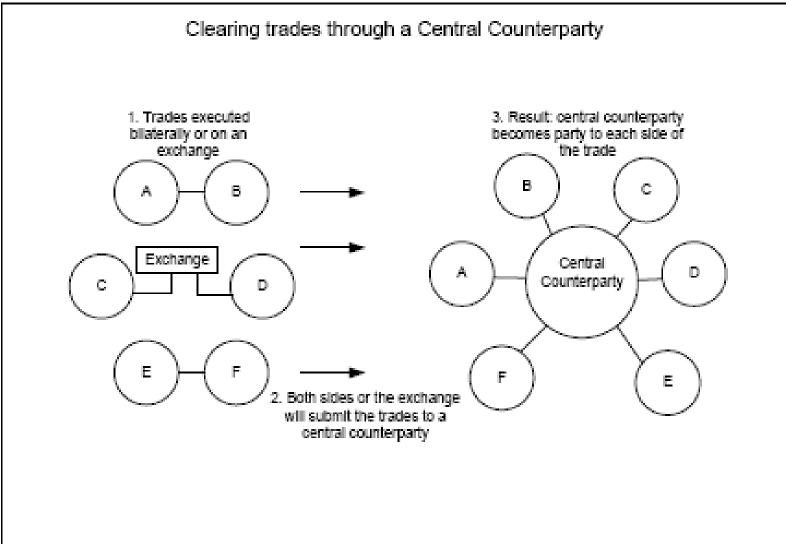


EFMD EQUIS ACCREDITED

OTC Market with a Central Counterparty

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS





EFMD EQUIS ACCREDITED

Create incentives to migrate towards markets with CCPs

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- → CCPs can create transparency and stability!
- Dealers currently have little incentive to transform OTC markets into exchange traded markets
- BASEL III will create such incentives: higher capital requirements for OTC positions without CCP; netting allowed
- **BUT**: If illiquid derivatives are traded via one or few CCPs this may create new systemic risks!
- May require special intervention and resolution rules!
- Required: Robust risk management by CCP

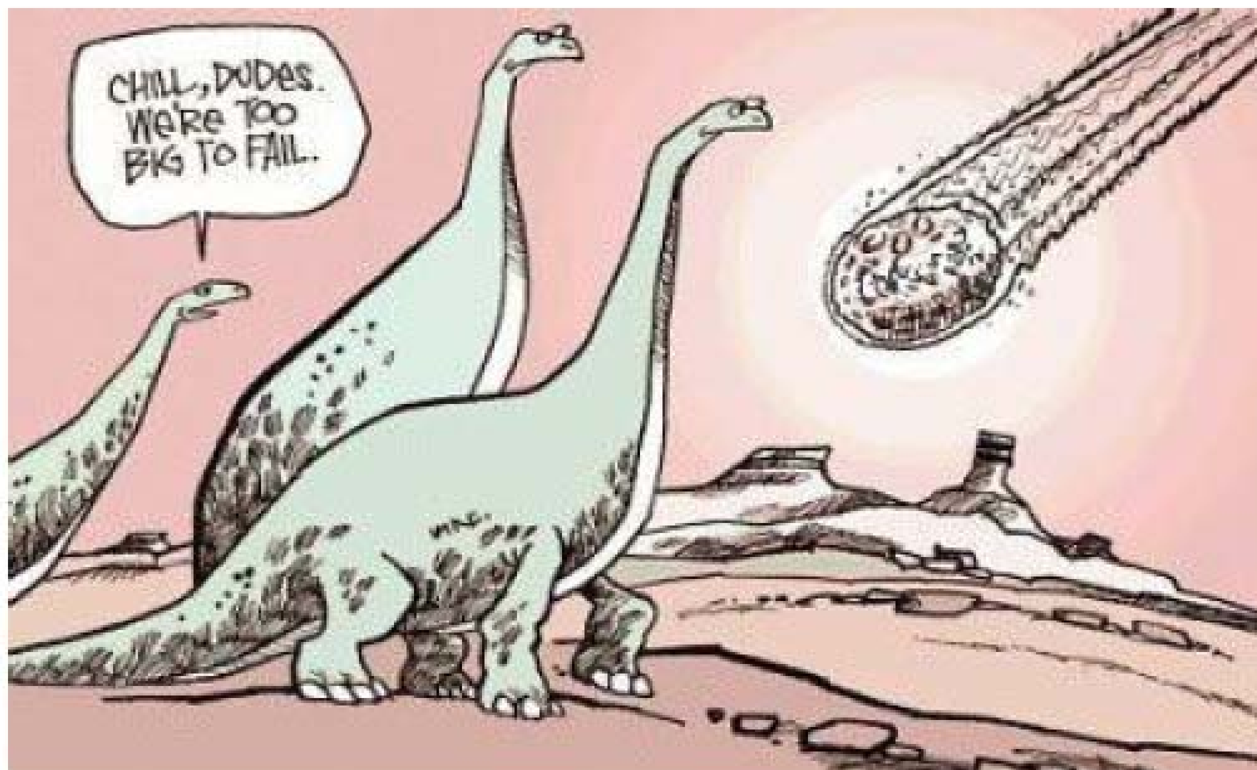
EFMD EQUIS ACCREDITED

Conclusions

WU WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

- We must deal with limited liability and too big to fail effects on a European level
- Important building blocks:
  - Fast and consistent implementation of new equity capital requirements (Basel III) with extra charges for SIFIs
  - Fast and consistent implementation of EU-harmonized bank supervision
  - Provide EU-wide legal basis for early intervention and resolution
  - Limit deposit funding of trading activities (separate trading from commercial banking)
  - Provide EU-wide incentives to improve trading infrastructures (more transparency, encourage derivatives trading via CCPs, provide appropriate regulatory basis for CCPs)
  - Keep things as simple as possible!

EFMD EQUIS ACCREDITED


CHILL, DUDES. WE'RE TOO BIG TO FAIL.