

Systemic People Risk – Dr. Patrick Mc Connell

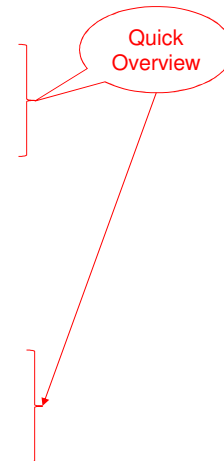
Systemic People Risk The Final Frontier?

ESRC People Risk Seminar – 26th March 2014 Trinity College

Dr Patrick McConnell

Agenda

1. People Risk Losses
 - Operational Risk Loss data (BIS & ORX)
 - Operational Risk Losses due to People
 - 4Is Model
2. Systems Thinking
 - Systems Thinking
 - System of Systems
 - Systems Thinking – LIBOR
 - Systems Thinking – The Liquidity Crisis
3. Systems Thinking – The Global Financial Crisis
 - Mortgage Securitization as a System
 - Systems Thinking – The Sub-Prime Crisis
4. People Risk
 - People Risk – The Sub-Prime Crisis
 - People Mapping – A Tool for managing People Risks
 - People Risk – Biases and Rationalizations
 - People Risk – Research Agenda and Questions



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1. People Risk Losses

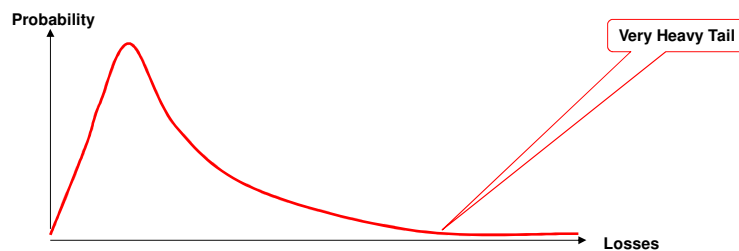
What are People Risk Losses?

And why are they important?

Operational Loss Data

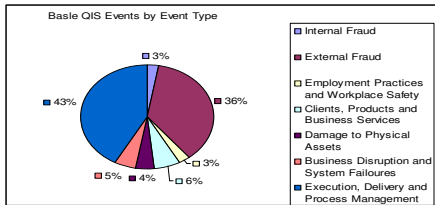
- It is a stylised fact that Operational Risk Losses are very heavy tailed
- In study after study, >75% of **loss value** is in the tail

[Bank For International Settlements (BIS) www.bis.org]



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2001 - BIS QIS 2 Summary – Losses by Event Type

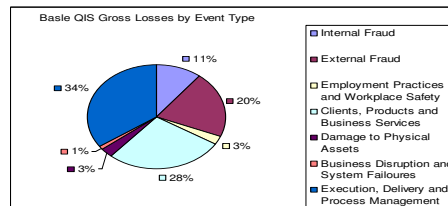


80% of loss “events” occur in just two areas

- Execution, Delivery and Process Management
- External Fraud

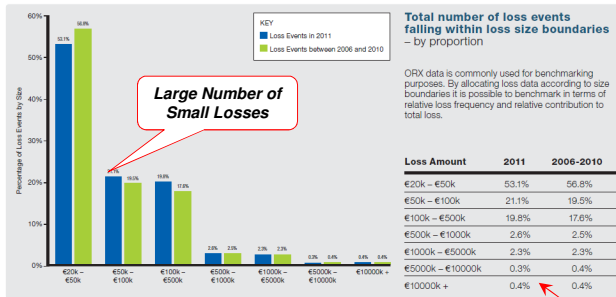
Over 80% of loss “value” incurred in just three areas

- Execution, Delivery and Process Management
- Clients Product and Business Services
- External Fraud

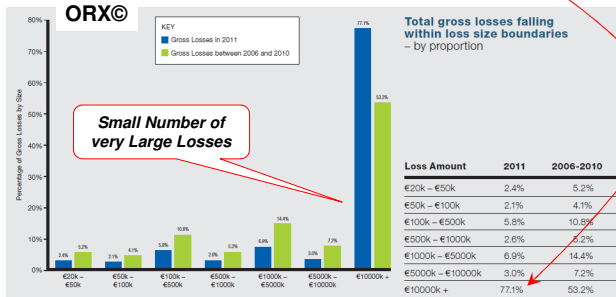


QIS reported that 1% of losses account for >75% of value - **Not Changed**

ORX Data 2006-2011



NOTE
Changes between 2006-2010 and 2011 are **NOT** due to more losses but **LARGER** losses due to the fallout from the GFC



>77% of loss value in <0.5% of cases in 2011

www.orx.org
The Operational Riskdata eXchange Association (ORX) is a not-for-profit industry association dedicated to advancing the measurement and management of operational risk in the global financial services industry.

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Where are these losses happening?

- Very busy ORX Table BUT most losses due to People

Gross losses by business line and event type – reported to ORX during the year 2011												ORX®	
€ Million	Corp. Finance	Trading & Sales	Retail Banking	Private Banking	Commercial Banking	Clearing	Agency Services	Asset Mgmt.	Retail Brokerage	Total	% of Total		
Internal Fraud	€1	€26	€187	€77	€2	€1	€3	€15	€13	€325	1.32%		
External Fraud	€29	€103	€983	€606	€5	€6	€29	€11	€32	€1,807	7.33%		
Employment Practices & Workplace Safety	€11	€44	€304	€14	€4	€3	€5	€35	€10	€430	1.75%		
Clients, Products & Business Practices	€118	€585	€13,891	€344	€203	€149	€67	€380	€211	€15,949	64.72%		
Disasters & Public Safety	€4	€8	€53	€5	€0	€0	€0	€0	€1	€72	0.29%		
Technology & Infrastructure Failures	€0	€32	€53	€29	€1,041	€2	€6	€2	€1	€1,165	4.73%		
Execution, Delivery & Process Mgmt.	€35	€1,303	€2,746	€398	€78	€121	€108	€37	€71	€4,896	19.87%		
Total	€199	€2,102	€18,218	€1,474	€1,332	€281	€218	€481	€339	€24,644			
% of Total	0.81%	8.53%	73.92%	5.98%	5.41%	1.14%	0.88%	1.95%	1.37%				

People (75%)



Process (25%)



- 65% in the category ‘Clients, Products & Business Practices’ i.e. mainly **Fines** for bad practice

Does not cover all losses!

- BIS/ORX only covers *Operational Risk Losses* for regulated banks
- Does **not** cover losses due to bad strategic decisions (e.g. RBS)
- Does **not** cover losses due to **credit risks** resulting from bad strategic decisions, e.g. Anglo Irish Bank (AIB), Washington Mutual, HBOS
- Does **not** cover losses suffered by non-banks
- Does **not** include fines in 2012-2013, e.g. LIBOR
- Not computed are losses aggregated by source of fines, e.g.:
 - PPI estimated total £ 22 billion to date
 - LIBOR estimated \$ 5 billion and growing
 - LSE estimate total of all Conduct fines > £ 150 billion since GFC
 - Etc. Etc.
- In other words, the **largest losses** impact many firms **across the Industry!**

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Running Total of Large Conduct Fines end 2012

	Total Costs 2008-2012 (GBP bn)	Provisions and Contingent Liabilities as at 31 Dec 2012 (GBP bn)	Grand Total (GBP bn)
Bank of America	30.41	23.58	54.00
JP Morgan Chase & Co	18.52	6.13	24.65
UBS	23.69	0.95	24.65
Citigroup, Inc	8.71	3.13	11.84
Lloyds Banking Group PLC	5.87	3.37	9.24
HSBC	4.03	2.22	6.25
Barclays PLC	3.06	2.00	5.06
Royal Bank of Scotland	1.73	2.51	4.24
Santander	2.70	1.44	4.14
Goldman Sachs	1.76	2.19	3.95
Grand Total (GBP bn)	100.48	47.52	148.02

Usual Suspects

More to Come
- LIBOR
- GFC Mortgages
- FX Manipulation???

McCormick R (2013) "London School of Economics Conduct Costs Research" <http://blogs.lse.ac.uk/conductcosts/>

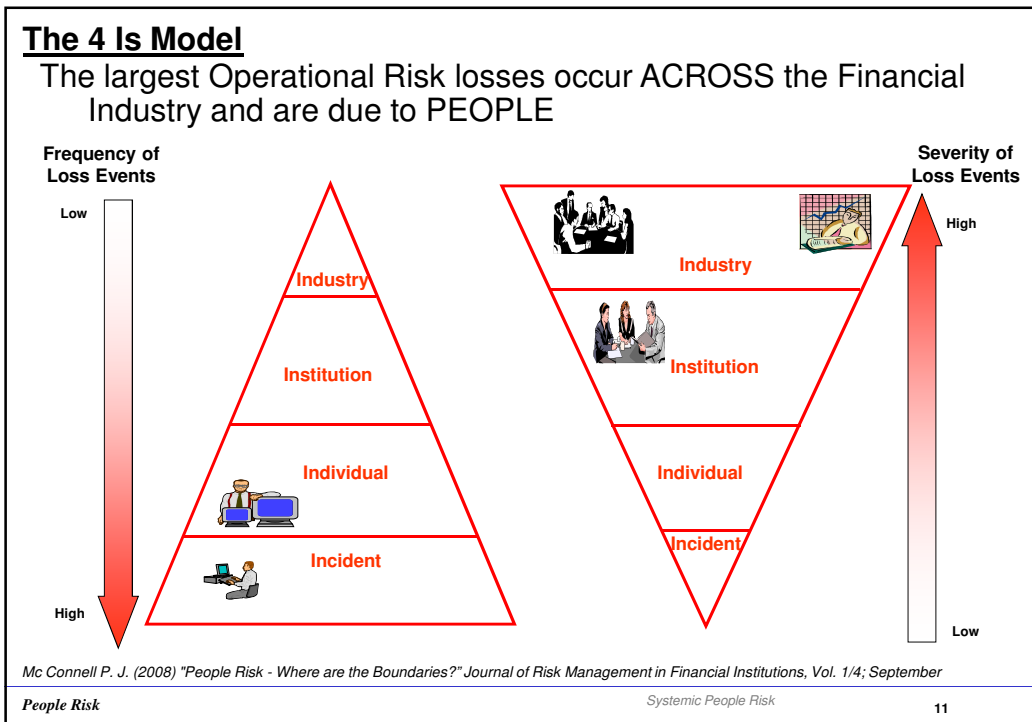
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The Safety Triangle

- Heavy tailed losses are familiar in Health & Safety (H&S)
- See Frank Bird's Safety Triangle
- Approach in H&S
 - Reduce Incidents and, as a consequence, Fatal Accidents will fall
 - **This works!**
- But will such an approach work in Financial Industry?
 - If one salesperson doesn't sell a PPI, will another also stop, and will the bank not be fined? *Only if everyone stops!*
 - If one trader does not manipulate LIBOR, will others also stop? *Highly unlikely – probably the reverse!*
 - If we stop one Rogue Trader, will that deter others? *Evidence suggests otherwise, because their motivations not fraudulent!*

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Some Big Questions

- 1) Just why do People in the Financial Industry do the 'wrong' thing?
 - Such as LIBOR, Rogue Trading, Stupid Lending
- 2) And why do People in the Financial Industry tend to do the 'wrong' thing at the exactly the same time?
 - Such as LIBOR, PPI, GFC, Irish Banking Crisis
- 3) How do we get do People to do the 'right' thing, or, at least, not do the 'wrong' thing?
 - We have *sort of* an answer to (1)
 - 'Bad' Decision-making,
 - Lack of comprehensive 'Risk Culture'
 - Lack of Individual Responsibility
 - We have *part of* the answer to (2)
 - Groupthink, Herding,
 - Ineffective Micro-Prudential Regulation and lack of Macro-Prudential Regulation
 - We have **FEW** answers to (3) – That is why we are here!

Incentives are only part of the answer

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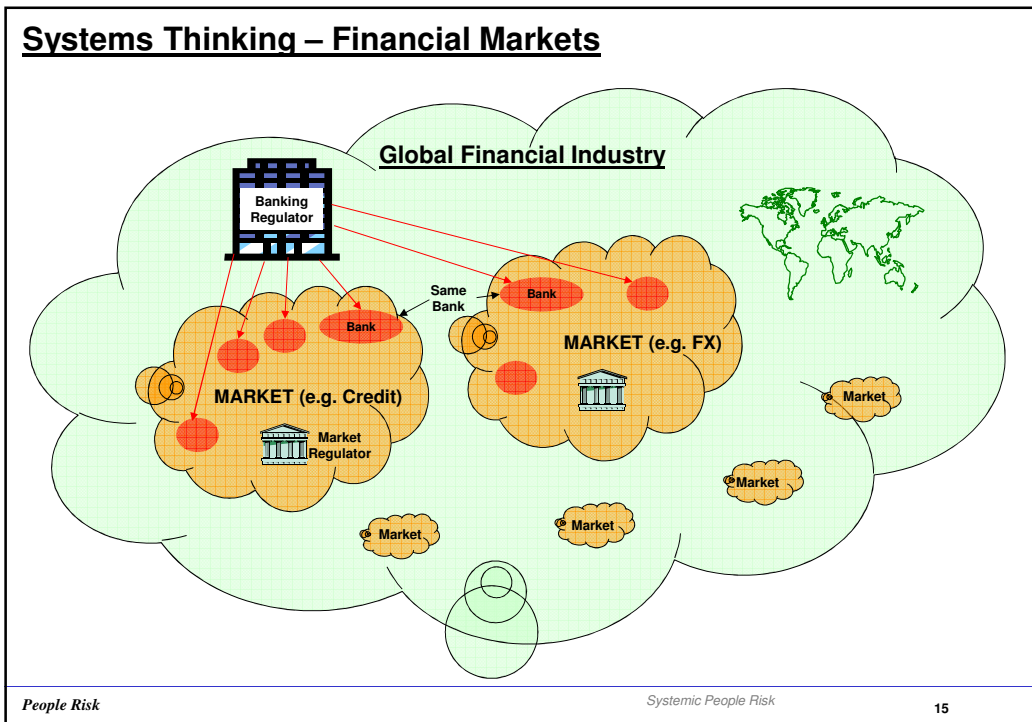
2. Systems Thinking

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Systems Thinking

- **Systems Theory** was developed in the 1950s/60s and recognised that a **“system”**:
 - Is a collection of parts (or subsystems) integrated to accomplish an overall goal;
 - Has input, processes, outputs and outcomes, with **ongoing feedback** among these various parts.
 - If one part [of the system] is removed, the nature of the system is changed.
 - A “system” is greater than the sum of its parts.
- An “Open System” is one that **interacts with** and **is influenced** by its environment.
[Note: A “Closed system”, such as a clock, is one that does not interact with its environment.]
- Organizations, such as firms in the financial industry, are **“Open Systems”**, influenced by their environment: the industry, regulators and the economy in general.
- ***This is particularly true when considering RISKS!***

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There is a Focus on Micro-Prudential Regulation

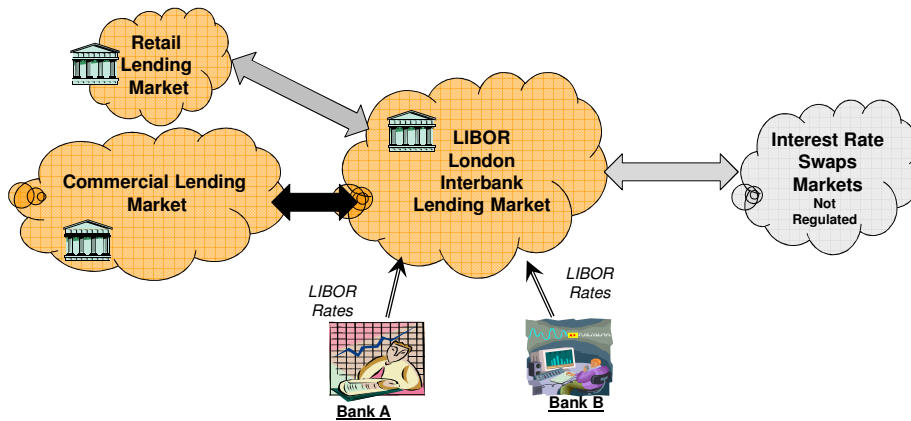
- Banking Regulators, supervise
 - **Multiple** Banks that operate in
 - **Multiple** Markets in
 - Single Jurisdictions (e.g. OCC in the USA)
- Banking Regulators, supervise
 - **Individual** Banks that operate in
 - **Multiple** Markets and do business in
 - **Multiple** Jurisdictions (e.g. FINMA In Switzerland)
- Some Markets have a Market Regulator that supervises a part of a Market (e.g. CTFC for US traded derivatives)
- Some Markets have **NO** Market Regulator (e.g. Foreign Exchange, REPO)
- But **NOBODY** has the big picture
(Note the BIS is a standards body NOT a regulator)

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Some More Big Questions

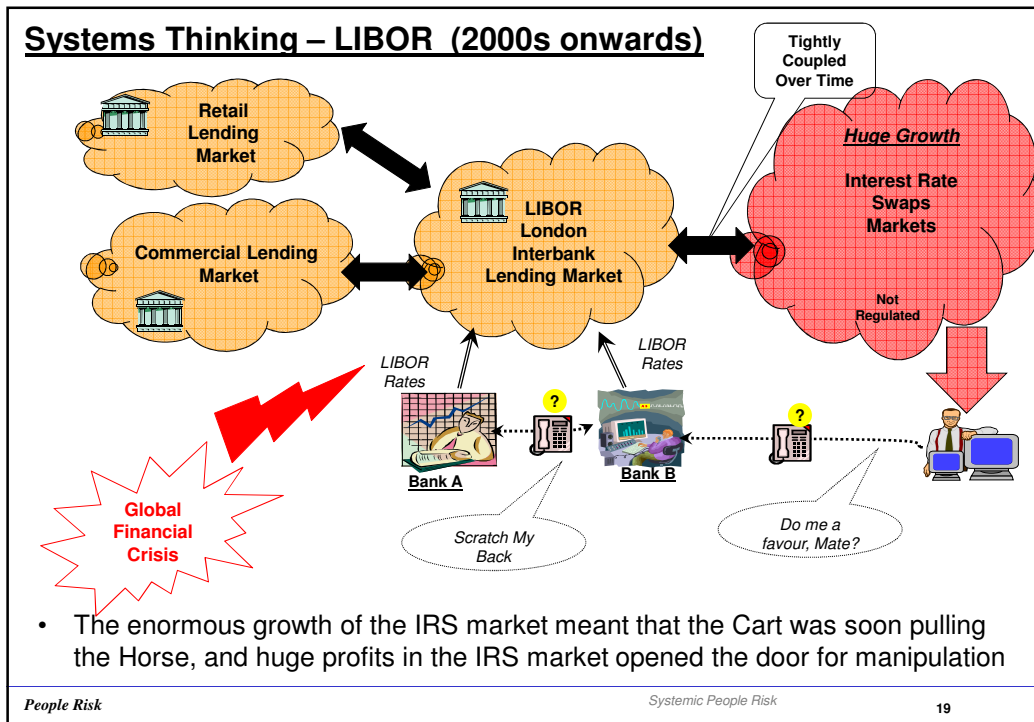
- 1) Who exactly is minding the shop?
 - Such as regulating global Universal Banks e.g. UBS, JPMorgan, etc.
 - 2) How do Financial Markets actually interact?
 - Such as the Global Credit and the Global Funding/Liquidity Markets
 - 3) Who is looking after the 'big picture' i.e. 'Systemic Risks'?
- We have *part of* an answer to (1)
 - Home – Host regulation; in theory, FINMA regulates UBS everywhere
 - We have *some* idea of the answer to (2)
 - Derivatives
 - We have **NO** answers to (3) – but working on it

Systems Thinking – LIBOR (1980s- early 2000s)



- From the mid 1980s, the LIBOR Market was the mechanism for setting Benchmark rates for Inter-Bank Borrowing and Commercial Lending
- LIBOR also supported the small Interest Rate Swaps (IRS) market

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System of Systems

- The Global Financial Industry is in fact what is called a '**System of Systems**'
- A 'System of Systems' (SOS) consists of a number of **Systems** that have the following properties:
 - 1) Operational independence ✓
 - 2) Managerial independence ✓
 - 3) Evolutionary development ✓
 - 4) Emergent behaviour ?
 - 5) Geographic distribution ✓
- The markets that make up the Global Financial Industry satisfy those criteria!
- Emergent behaviours are actions that "cannot be localized to any single component of the system but instead produce effects that *arise from the cumulative action and interactions of many independently acting components*"

[Fisher D. A. (2006) "An Emergent Perspective on Interoperation in Systems of Systems" www.sei.cmu.edu/publications/pubweb.html]

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Systems of Systems are Difficult to Manage

- Systems of Systems are difficult to manage/control because of
 - **Influences**: mechanisms by which one entity interacts with another in a way that *changes the physical, informational, or emotional state of the other*;
 - **Cascade effects**: the means by which influence and emergent effects are *propagated throughout a system of systems*;
 - **Epidemics**: occur when the number of constituents that are influenced [by cascade effects] *increases at each step*;
 - **Emergent composition**: mechanism by which the effects of autonomous entities are combined to produce configurations or patterns that *cannot be expressed as a simple summation or combination of their parts*;
 - **Emergent properties**: characteristics of a system that *cannot be localized* to a single independently acting constituent or to a small constant number of constituents; and
 - **Tight Coupling**: the more ‘closely connected’ the system(s), the more likely failures are to influence each other - *resulting in a higher risk of accidents/disasters*.

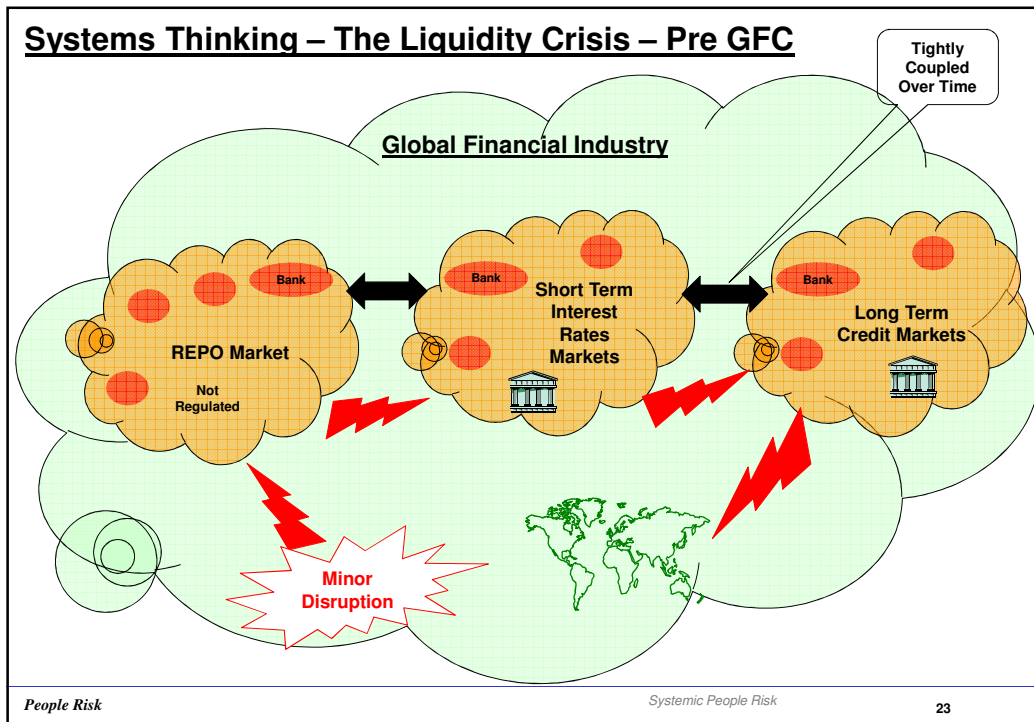
[Fisher D. A. (2006) “An Emergent Perspective on Interoperation in Systems of Systems” www.sei.cmu.edu/publications/pubweb.html]

- **Complicated?** ; Remember how the seizing up of the REPO market caused a liquidity crisis that triggered the GFC.

An Example of an Emergent Property

- Over the past decade, global Investment Banks have started to evaluate the Credit Risks of Derivatives on a **NET** rather than a **GROSS** basis
And also the major banks now agree to post **Collateral** on these Net differences.
- Because the risk is **Net**, this has resulted in an enormous increase in the **Gross** value of derivatives traded between large banks, for example the Interest Rate Swaps (IRS) market in 2011 had a Gross value of over \$300 trillion!
[McConnell P. J. (2013) ‘Systemic Operational Risk – The LIBOR Scandal’ *Journal of Operational Risk* Vol 8 No 3 Fall]
- This situation is fine, until one of the main Swaps dealers becomes or threatens to become bankrupt, where the *Gross* value becomes important as counterparties start to ‘cherry pick’ swap contracts! (Example, Lehman, AIG)
- The situation is also fine until Collateral starts to lose value and counterparties take a ‘Flight to Safety’ or alternatively ‘Pile in’ (e.g. the JPMorgan Whale)
- Then problems Cascade and an Epidemic runs through the System of Systems

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What are People to do with this Meltdown?

- The Liquidity Crisis that was a trigger for the GFC (not the cause) and was caused by **PEOPLE**.
- **People** (mainly Investment Managers) decided to pull out of the REPO markets, because added-return on cash not worth the risk!
Perfectly Rational! Here we are dealing with fractions of a basis point.
- **Traders** started to pull out of the Short Term Interest Rate (STIR) market because they were unable to hedge overnight, through the REPO market!
[O'Sullivan D. (2012) 'Does Participation in Tri-party Repo Markets Contribute to Systemic Risk?' Masters Thesis, Trinity College Dublin]
- **Treasurers** were having liquidity problems when STIR market started to dry up! (Lehmans, nearly everyone!)
- **Bankers** who had loaned on the assumption of a forever-liquid STIR market, could no longer fund their loans! (Northern Rock, HBOS, nearly everyone!)
- It was all down to **People who made the wrong assumptions and bad decisions!**

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Who's to blame!

- It's not a natural Disaster!
- It's not the Economy!
- It's not the Government!
- It's not the Regulators!
- It's not Technology!
- It's not Process Breakdown!
- It's not an Accident!
- Nor is it Deliberate!
- It's not a calculated Risk!
- It's not[Fill in the blanks]

• ***It's People – Stupid!***

- It's Board directors who do not 'oversee'
- CEOs who pursue their own arrogant, optimistic agendas with
- Senior Managers who are quite happy to 'get with the program' to placate
- Investors who only have short term horizons ('pass the parcel')
- It's Staff who don't ask questions
- And it's Control functions interested in ticking boxes to placate
- Regulators, who are fighting the last war, for
- Governments whose ideologies trump reality

Irish Banking
Crisis?

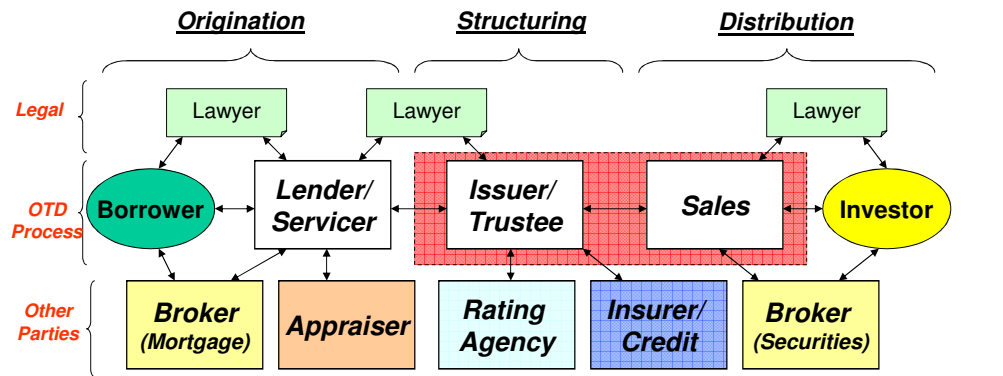
3. Systems Thinking - The Global Financial Crisis

An Example of Systemic People Risk

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Mortgage Securitization in the USA

- Although complicated, the system for creating Residential Mortgage Backed Securities (RMBS) worked very well for 75 years after the Great Depression *because of due-diligence!*

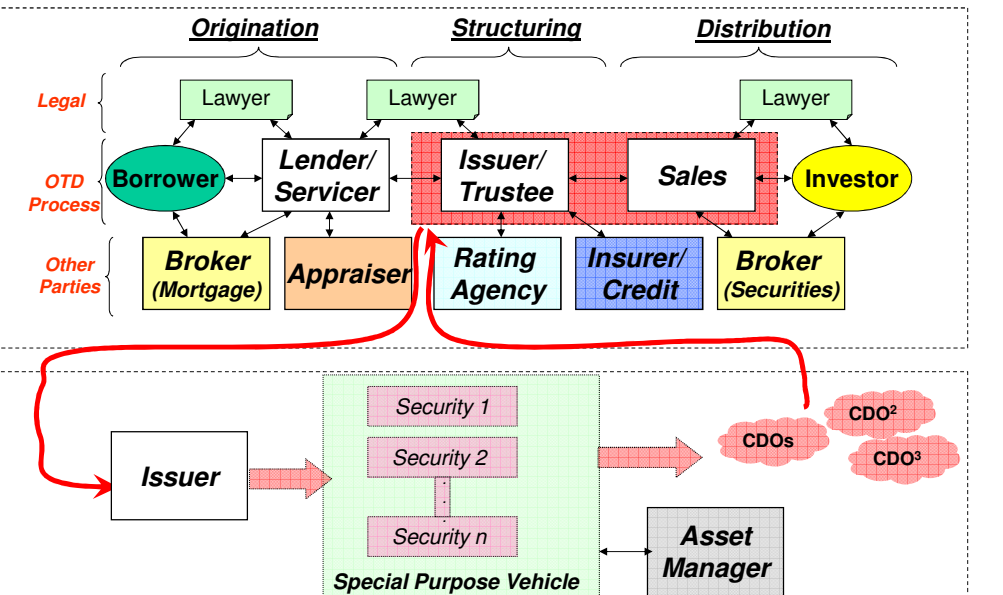


[McConnell P. J. and Blacker K. (2011) 'The role of Systemic People Risk in the Global Financial Crisis' Journal of Operational Risk, Vol. 6/3 Fall pp 65-123]

- **Note:** An awful lot of People involved in the OTD system!

People Risk

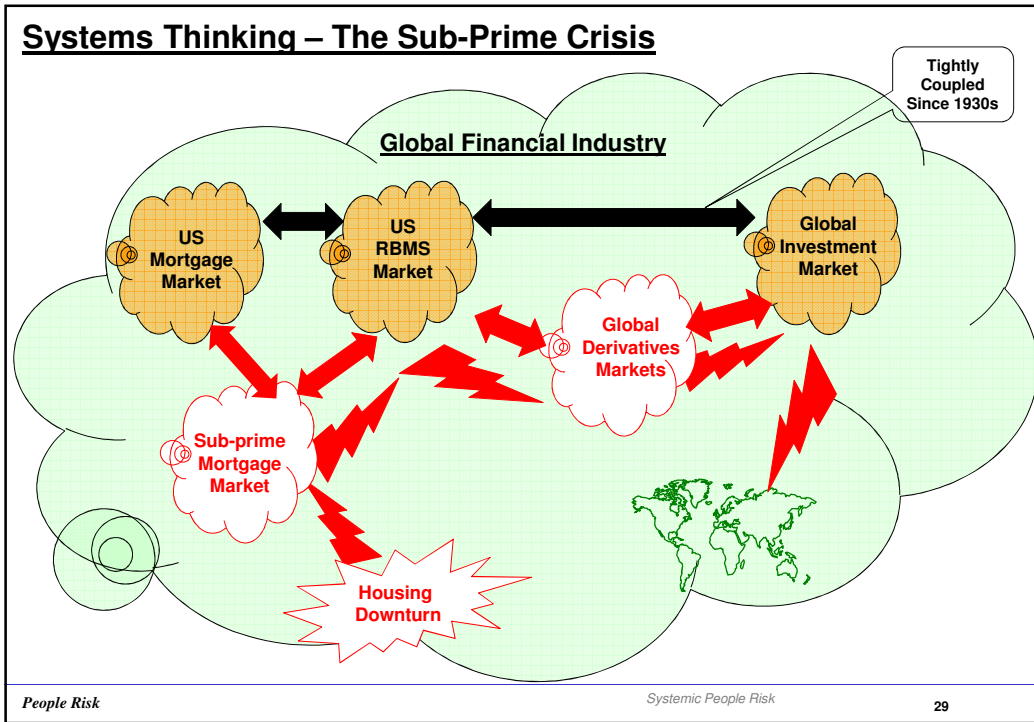
Enter Derivatives in the early 2000s



McConnell P. J. and Blacker K. (2011) 'The role of Systemic People Risk in the Global Financial Crisis' Journal of Operational Risk, Vol. 6/3 Fall pp 65-123

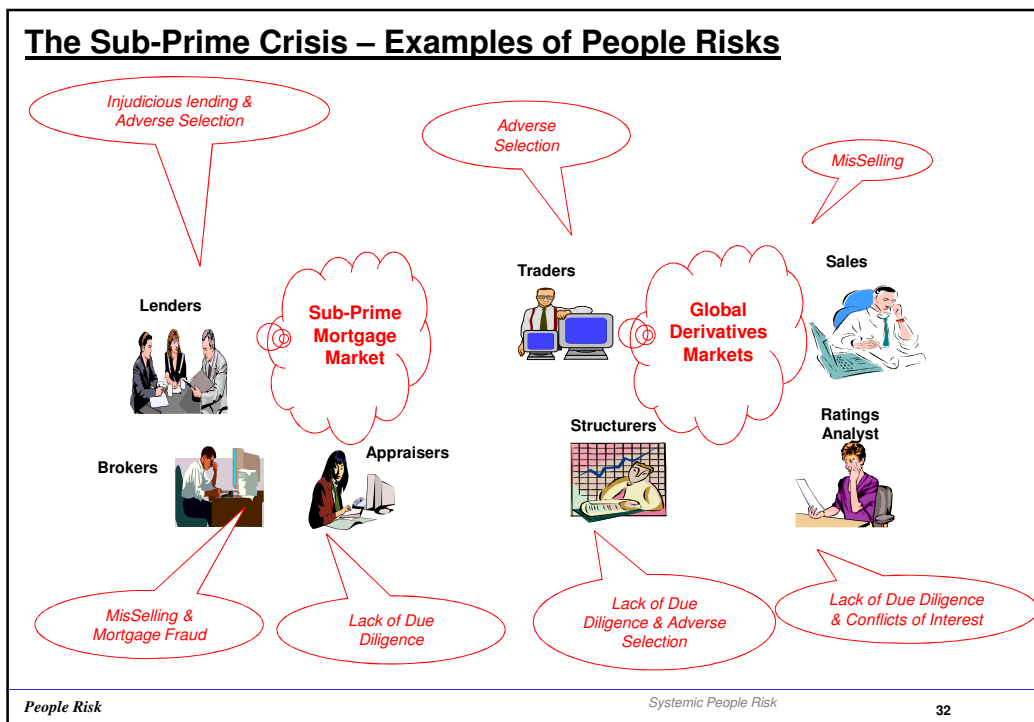
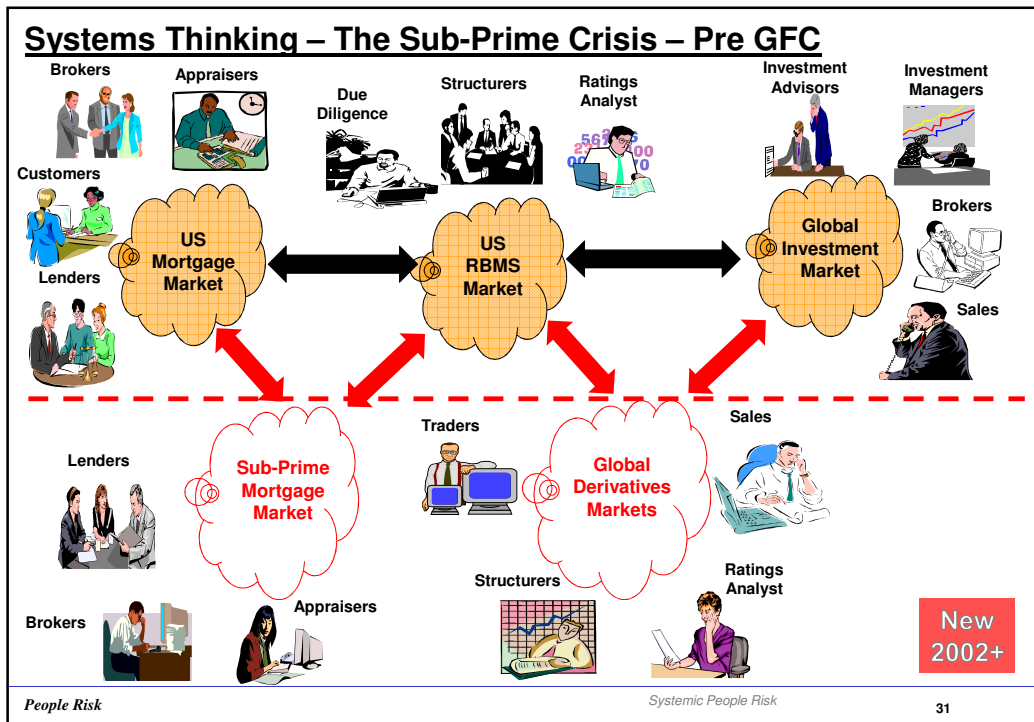
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4. People Risks

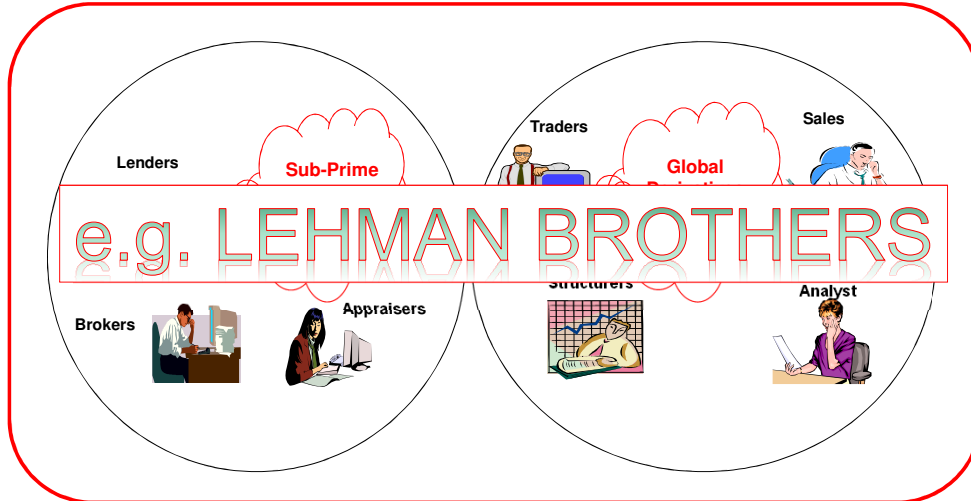
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Post Glass Steagall – Even Tighter Coupling

- After the repeal of the Depression era Glass Steagall Act in 1999, barriers between retail and investment bankers were broken down.



- Even more Tightly Coupled, making Cascades & Epidemics more likely

People Risks

- Throughout the Sub-Prime Crisis, the People Risks were evident:
 - US Mortgage Market – **many**
 - Customers Lied
 - Brokers Lied and missold properties
 - Appraisers did not do their Due Diligence
 - Lenders loaned injudiciously and securitised risky loans (Adverse Selection).
 - RMBS Market – **many**
 - Structurers did not do their Due Diligence
 - Traders cherry picked securities (Adverse Selection)
 - Credit Risk Analysts did not do their Due Diligence and mis-rated sub-prime securities
 - CDO Market – **many**
 - Structurers did not understand CDO products
 - Credit Risk Analysts did not understand CDO products and mis-rated them
 - Sales did not understand CDO products and mis-sold them
- Throughout the System of Systems, the **SAME** People Risks were evident

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More Big Questions?

- Some Questions
 - So why should someone lying about a loan in California, end up with a run on the Northern Rock bank in Newcastle, UK?
 - So why should a Credit Analyst mis-rating a CDO, cause AIG (the biggest re-insurer in the world) to have to be rescued?
 - So why should bad lending in Anglo Irish Bank cause the collapse of other Irish Banks?
[See Dowling M & Lucey B. M. (2014) 'From Hubris to Nemesis: Irish Banks, Behavioral Biases, and the Crisis' Journal Of Risk Management in Financial Institutions (forthcoming)]
 - And So On
- The answer has *something* to do with:
 - **Individuals**: bad decision-making and lack of individual responsibility;
 - **Influence**: one individual affects another, who affects another etc. - Groupthink;
 - **Cascades**: products/ideas become 'flavour of the month', Herding;
 - **Emergent properties**: everyone is seemingly making money – Golden Goose!
 - **Epidemics**: out-of-control very quickly – no one has any idea of what's happening;
 - **Tight Coupling**: Universal Banking and standardisation of legal contracts (ISDA);
 - **Inattention**: Nobody looking at the Big Picture (the System of Systems)

People Risk

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People Mapping – A Tool for Managing People Risk

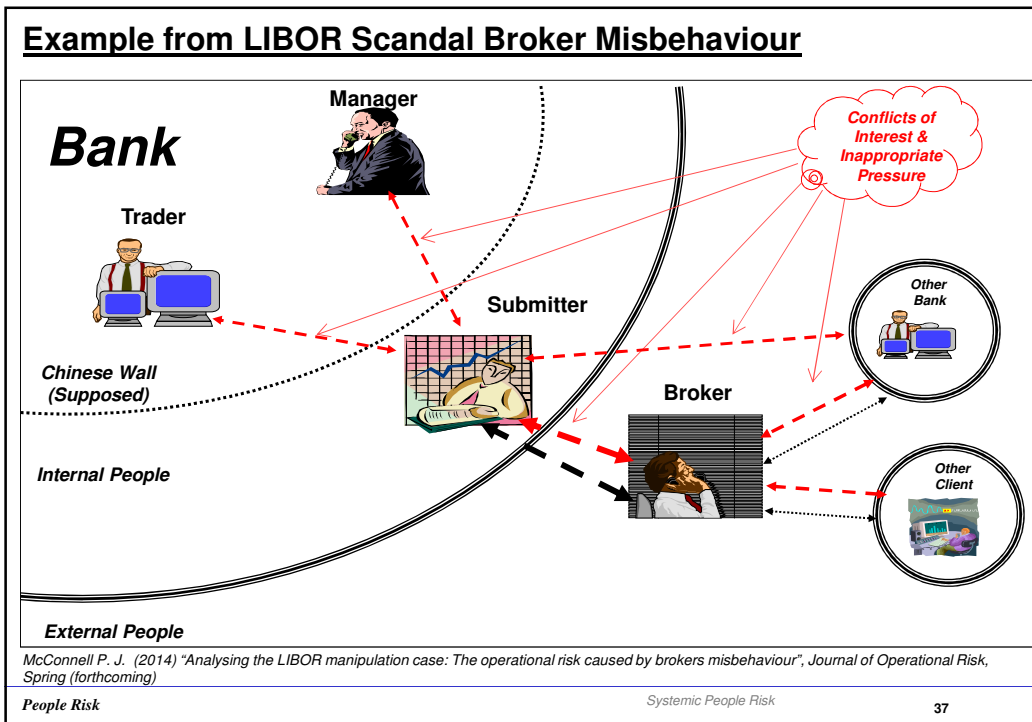
- Process Mapping is widely used to identify information flows in industrial and business Processes
- **What if we mapped the 'interactions' between People?**
- Most People interacts with multiple other People as part of their work.
- All of these interactions have one or more '*official purposes*'
 - For example, to provide products, services, advice, information etc. etc.
- But **ALL** of these interactions also have the **potential** to be '*inappropriate*'
 - For Example, bullying, discrimination, undue influence, etc. etc.
 - **Hint**: think of all of the potential problems between Lecturers and Students?
- Having identified potentially inappropriate interactions (i.e. People Risks), by 'People Mapping', they can hopefully be Risk Managed.

People Risk

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Biases and Rationalizations

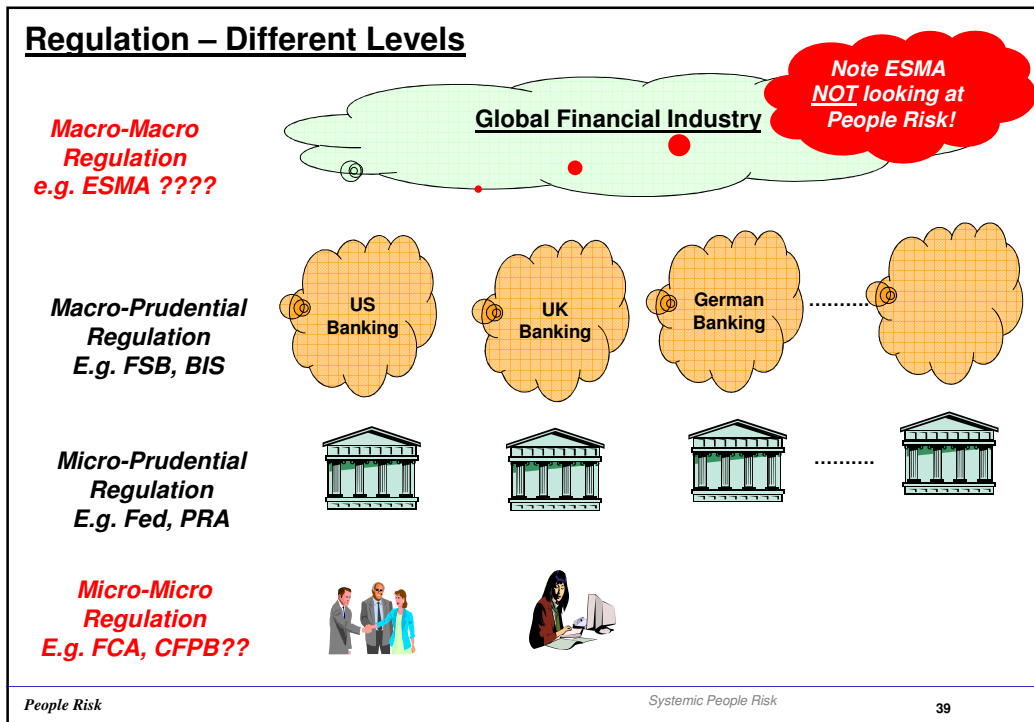
"Humans are not a rational animal, but a rationalizing one" *Leon Festinger*

- **Common Biases** *evident in People Risk events*
 - **Overconfidence** – No Problem - we have done it before!
 - **Groupthink** – Everyone in the firm/industry agrees it is a good idea!
 - **Loss Aversion** – We have to keep on track, we will bounce back!
 - **Attentional** – Analysts told me that it's the next big thing!
 - **Confirmation** – We did it this way before and it worked!
 - **Planning Fallacy** – What we are doing is unique, state of the art!

Such Biases need to be challenged!
- **Common Rationalizations** *evident in People Risk events*
 - **Ubiquity** – Everyone's Doing it!
 - **Victimless Crime** – No one is harmed by this!
 - **Distrust of Law** – Regulations are out-of-date, Regulators don't understand us!
 - **Temporary Use** – We will do this until we get back on track!
 - **Just Desserts** – We deserve this because[Fill in the blanks] !
 - **Economic Necessity** – We need to do this because[Fill in the blanks] !

Such Rationalizations need to be challenged!

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Research Agenda

- We know People are bad at decision-making (Biases etc.)!
- But what causes a few People behaving badly to spread chaos through a whole system?
- Yes, we can **tell** People and Firms to conduct themselves better! **But will they?**
- And will that stop massive losses being generated in the complex, heterogeneous System of Systems called the Global Financial Industry?
- Andy Haldane and Robert May in “Systemic risk in banking ecosystems”
“The rapid growth in the size and complexity of the derivatives market contributed importantly to the destabilizing dynamics of the system under stress during the recent financial crisis”

Growth + Complexity = Systemic Risk

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GROWTH + COMPLEXITY

+ LACK OF INDIVIDUAL RESPONSIBILITY

+ UNCHALLENGED BIASES & RATIONALIZATIONS

= SYSTEMIC PEOPLE RISK

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Postscript – Very Recent Paper

“Why the Federal Reserve Failed to See the Financial Crisis of 2008: The Role of “Macroeconomics” as a Sensemaking and Cultural Frame”, Fligstein N., Brundage J.S., Schultz M. Feb 2014

<http://sociology.berkeley.edu/sites/default/files/faculty/fligstein/Why%20the%20Federal%20Reserve%20Failed%20to%20See%20the%20Crisis%20of%202008%20v.2.6.pdf>

Method: Textual Analysis of Fed Open Market Committee (FOMC) minutes

Conclusion:

*“Our [research] demonstrates quite clearly **the power of culture** in shaping actors’ ability to make sense of the external world.*

*The backgrounds of the participants [the FOMC] , the words they use **to frame their arguments**, and the literal way they “measure” what is going on “out there” affect their interpretation and **construction of reality**.*

*While most sociologists would not find this very surprising, **the fact that the group of experts whose job it is to make sense of the direction of the economy were more or less blinded by their assumptions about how reality works, is a sobering result.**”*

In other words, the Global Financial System is subject to People Risks!

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Questions?

References

- *Mc Connell P. J. (2008) "People Risk - Where are the Boundaries?" Journal of Risk Management in Financial Institutions, Vol. 1/4; September*
- *McConnell P. J. and Blacker K. (2011) 'The role of Systemic People Risk in the Global Financial Crisis' Journal of Operational Risk, Vol. 6/3 Fall pp 65-123*
- *McConnell P. J. (2013) 'Systemic Operational Risk – The LIBOR Scandal' Journal of Operational Risk Vol 8 No 3 Fall*
- *McConnell P. J. and Blacker K. (2013) 'Systemic Operational Risk - Does it exist, and if so how do we regulate it?' Journal of Operational Risk, Vol 8 No 1 Spring*
- *McConnell P. J. (2014) "Analysing the LIBOR manipulation case: The operational risk caused by brokers misbehaviour", Journal of Operational Risk, Spring (forthcoming)*

Other relevant Papers

- *McConnell P. J. (2014) 'Reckless Endangerment – The Failure of HBOS' Journal of Risk Management in Financial Institutions, Vol. 7 No. 2 (forthcoming)*
- *McConnell P. J. and Blacker K. (2012) 'Systemic Operational Risk the UK payment protection insurance scandal' Journal of Operational Risk, Vol. 7/1 Spring pp 1-60*
- *McConnell P. J. (2013) 'Northern Rock - The Group That Thinks Together, Sinks Together' Journal of Risk and Governance Vol. 2/2*
- *McConnell P. J. (2013) 'Improving Risk Governance - A Proposal on Board Decision-Making' Journal of Risk and Governance Vol. 2/3*