Changing financial sector interconnectivities and their impact on regulatory frameworks

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Changing Financial Sector Interconnectivities

- Background and aims of Workshop
- Similarities and differences between different sectors
- Attitudes towards systemic risk and macro-prudential policy
- The technological and societal environment
- Other regulatory drivers and trends
- Common strands

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Malcolm Kemp

- 2009-now: Managing Director, Nematrian, and Adjunct Professor, Imperial College Business School where he teaches Enterprise Risk Management
- 1996-2009: Head of Quantitative Research, Threadneedle Asset Management
  - Responsible for Threadneedle's derivatives, investment risk management, performance measurement, LDI and other quantitative investment activities. Director of two of Threadneedle's hedge funds and of its insurance subsidiary, Threadneedle Pensions Limited (TPEN). Malcolm is still Actuarial Function Holder (AFH) of TPEN (and now AFH of Mobius Life)
- Before 1996: Partner in investment consulting practice of Bacon & Woodrow
- Author of books on Market Consistency (2009) and Extreme Events (2011)
- Co-author of Impavido et al. (2011) "Possible Unintended Consequences of Basel III and Solvency II". IMF Working Paper No 11/187

Aims of Workshop (1)

- To explore changing interactions and interconnections between different sectors of the financial services industry
- And to explore how regulatory frameworks and risk management modelling toolsets are likely to adapt to these changes
  - In a hopefully interactive and collaborative way, to gain your insights
  - Hopefully with you gaining insights in return
- Preliminary ideas contained in a draft paper titled "*Changing Financial Sector Interconnectivities and their impact on regulatory frameworks*"
  - Aim is to refine paper based on insights raised at the Workshop

Aims of Workshop (2)

- Deliberately wide-ranging, including:
  - Banks
  - Insurers
  - Asset managers (and the funds that they create for others)
  - Pension funds
  - Investment intermediaries
  - Financial market infrastructure organisations
  - Shadow banks
- With a bias towards developments most relevant in Europe

Initial working thesis of paper

- Current financial service regulatory strands can be grouped into three main strands:
  - Increased focus on systemic risk following the recent financial crisis
    - By which we mean the 2007-09 Credit Crisis, see e.g. Kemp (2009)
  - Increased scepticism amongst regulators and governments that different parts of the financial services industry are inherently different (or at least as different as some in individual parts of the industry might claim)
  - Continuing societal change driven by IT and other technological developments and by how societies interpret ‘fairness’
- But is this a helpful grouping? Are there other strands not covered in the draft paper or in this presentation?

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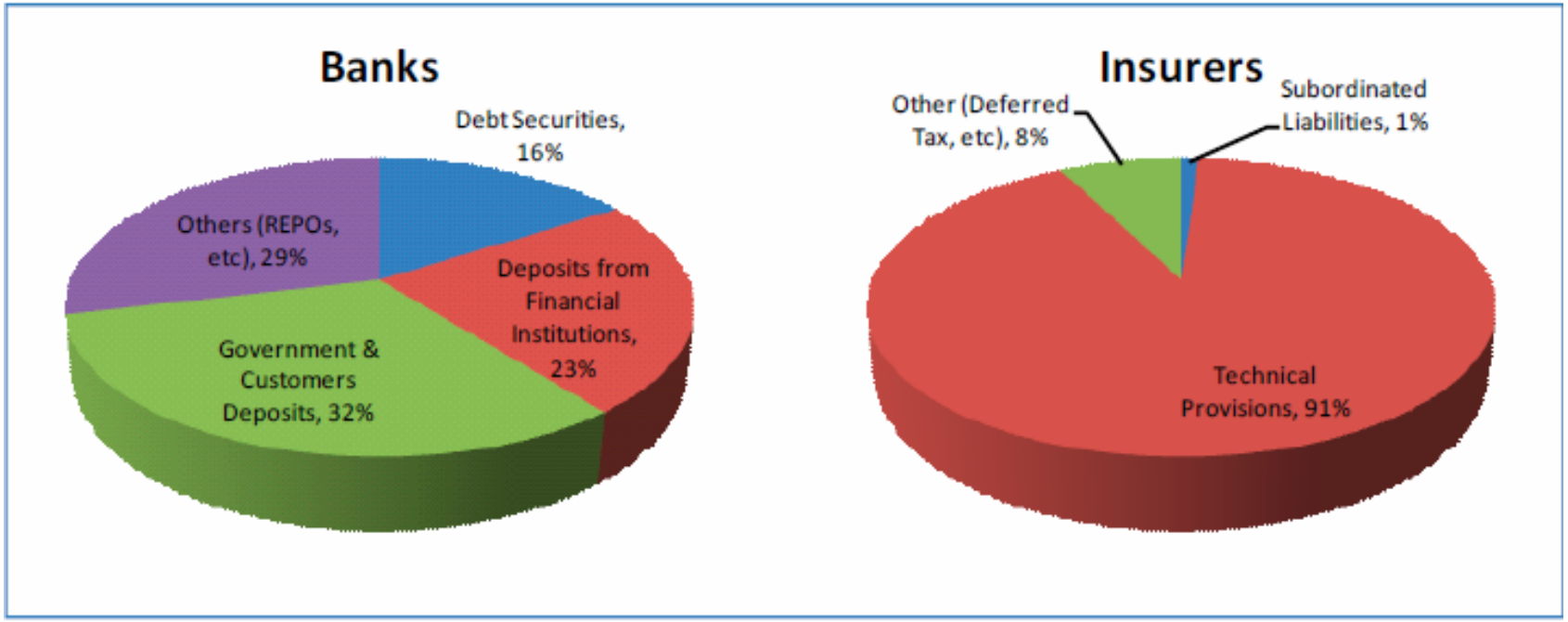
Similarities and differences between different sectors

- Similarities and differences between banks and insurers
  - Based partly on Impavido et al. (2011)
- Other financial services entities
- Staff skillsets
- Impact of firms (and other entities) across the financial services industry being viewed as a single ‘industry’
- Possible outlier status of (DB) pension funds

Typical bank and insurer business models differ

	Banks	Insurers
Monetary role industry mainly fulfils	A means of payment in exchange for goods and services	A store of value, permitting deferred consumption and smoothing
Other roles	Financial services	Risk pooling
Comparative advantage	Screen and finance short-term projects	(as investors) invest long-term and gain from illiquidity premium
Core business activities	Largely asset-driven, often supported by leveraged balance sheets	Mainly liability-driven, less leveraged and often less exposed to 'runs'
Exposure to systemic risk from any one firm?	Higher	Lower
Risk that safety net costs fall on government?	Higher (more 'essential' to current economic activity)	Lower

They also have different funding bases (excluding equity) …



Source: IMF Staff calculations on CEA data

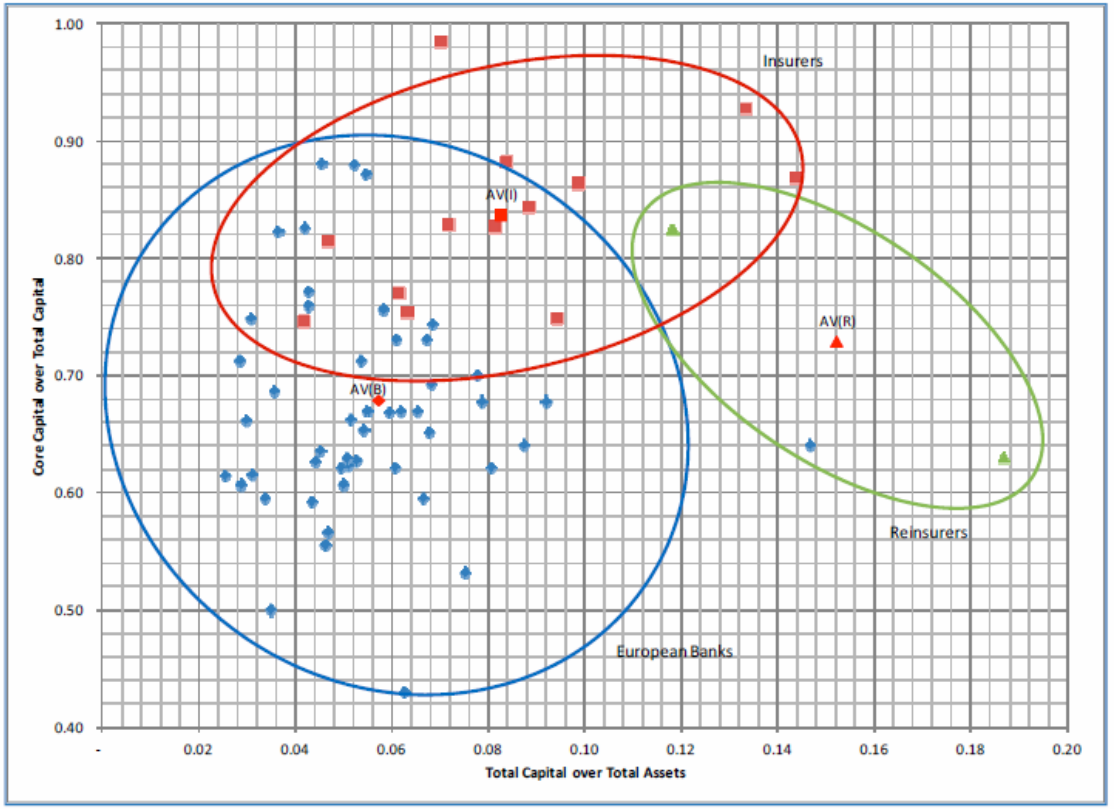
Showing percentages of total liabilities (excluding equity)

- Banks more interconnected (at individual firm level)

Different capital levels …

	Average total capital / total assets (%)	% of 'high-quality' core capital
Large European banks	6	67
Large insurers (worldwide)	8	84
Large global reinsurers	15	73

N.B. Ideally comparison should adjust for risk, e.g. by reference to VaR at the same confidence level and time horizon



Source: SNL and IMF Staff estimates

For banks: Total Capital = Regulatory Capital; Core Capital = Core Tier 1 capital

For insurers: Total Capital = Total Equity + Subordinated Debt; Core Capital = Total Equity

Different accounting bases …

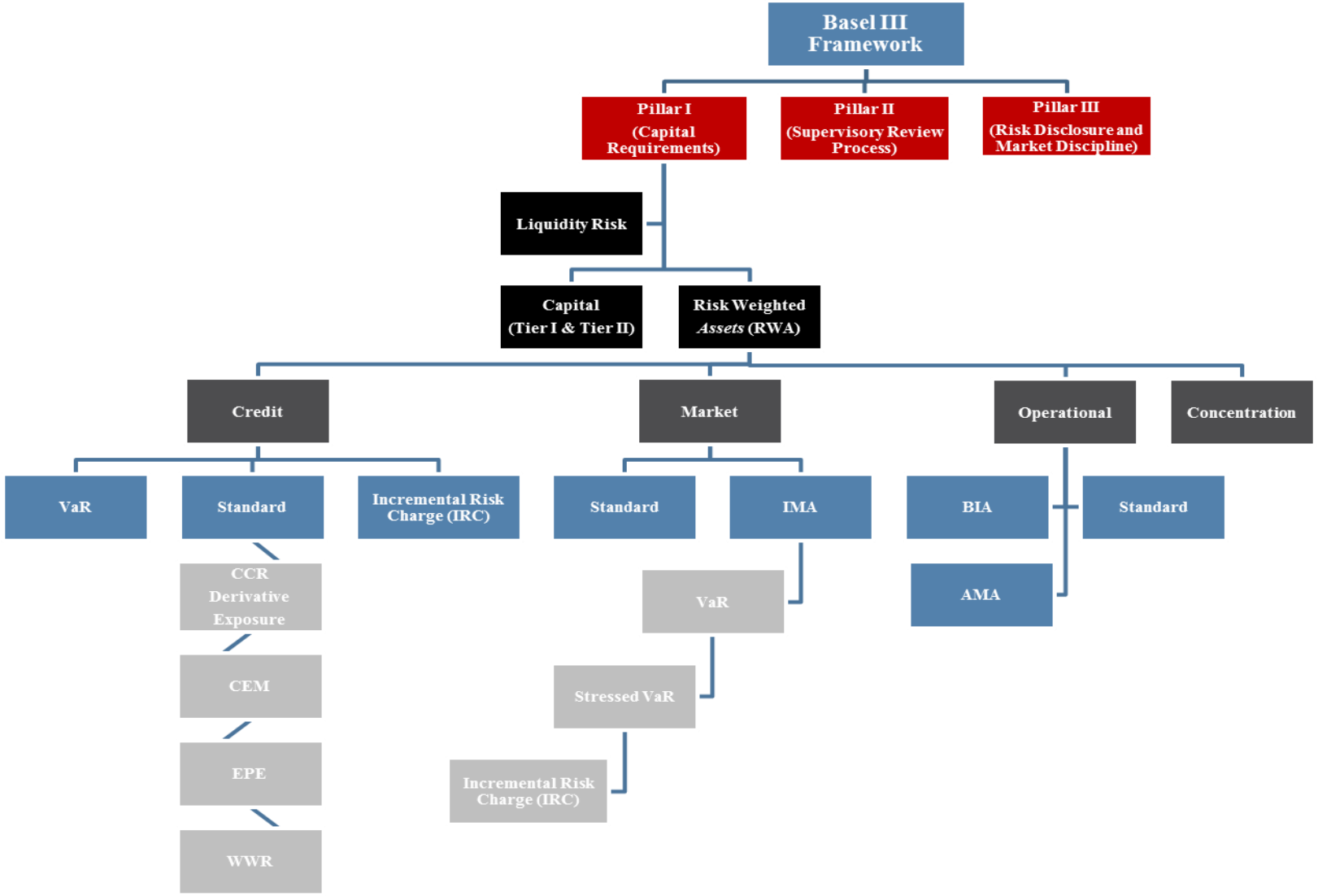
	Banks	Insurers
Assets	Often IFRS, bank loans deemed financial instruments, IAS 39, loan provisioning generally retrospective, IFRS 9 amortised cost or fair value	Solvency II uses market consistent, i.e. fair, values (and less reliance on general purpose accounting)
Liabilities	Also typically at amortised cost or fair value	Transfer/settle cost, approximated by best estimate + risk margin or MV of replicating portfolio, more prospective
Own credit risk	Basel III will effectively disallow benefit previously available under Basel II	No

- More retrospective (hence stable in the short term) for banks than insurers
- Relevant to design of counter-cyclical elements, but counter-cyclical versus what?

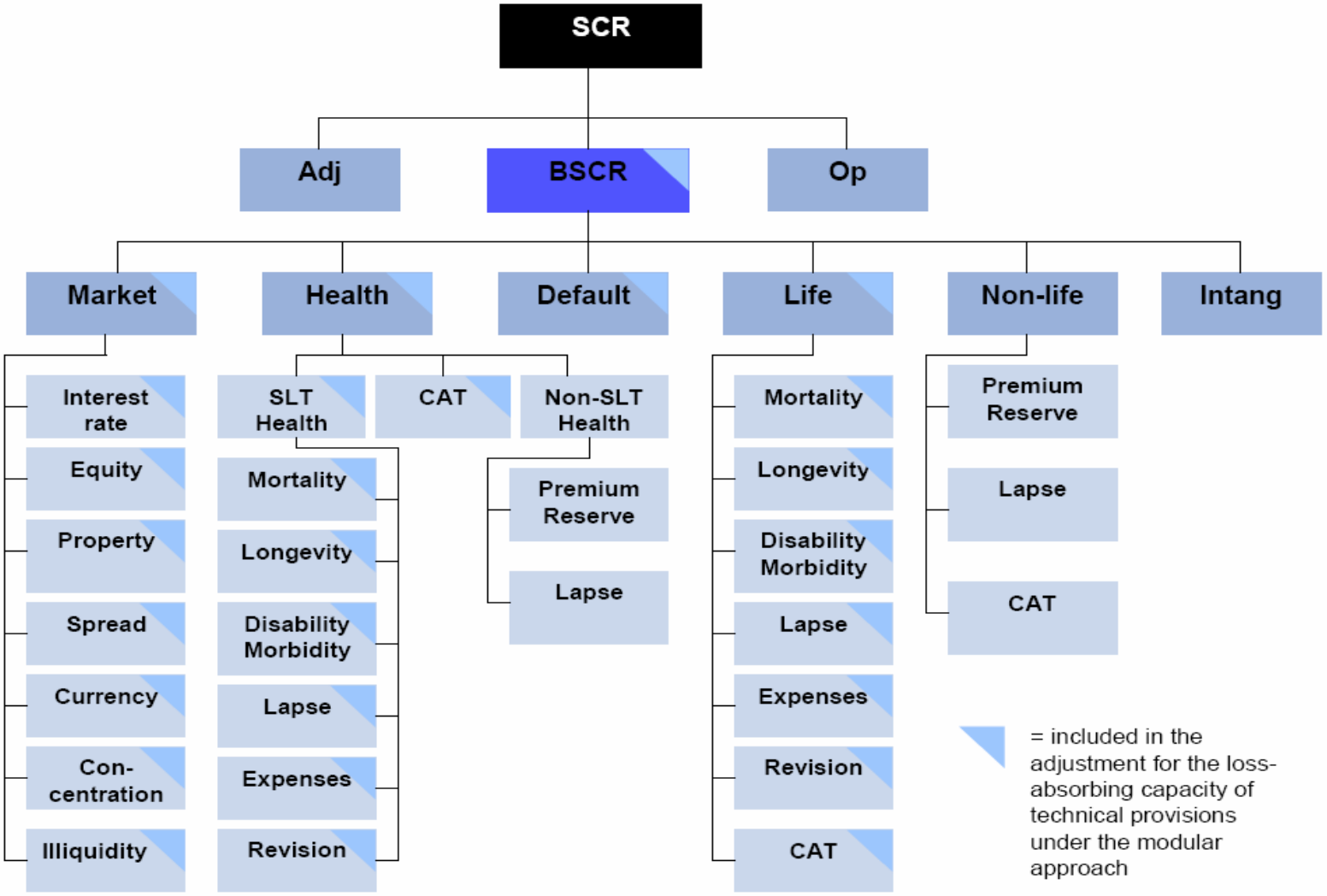
Somewhat different looking Pillar 1 structures …

- Or at least somewhat different emphases on different risks
- Banks more focused on credit risk and liquidity risk
- Insurers more focused on market risk and insurance risk
- Both offer scope for internal models
  - Full versus partial internal models

Basel III capital requirements



Solvency II SCR: Standard Formula



And different perspectives on Pillar 1 versus Pillar 2

- Insurers often pay less attention to Pillar 1 and more attention to Pillar 2 than banks
  - Banks are currently often more capital constrained than insurers on a Pillar 1 basis
- Banks often enjoy liquidity underpins from their central bank
  - Part of the deposit protection arrangements that have developed over the last century or so
- N.B. Impavido et al. (2011) concentrates on Pillar 1 position (easier to analyse)

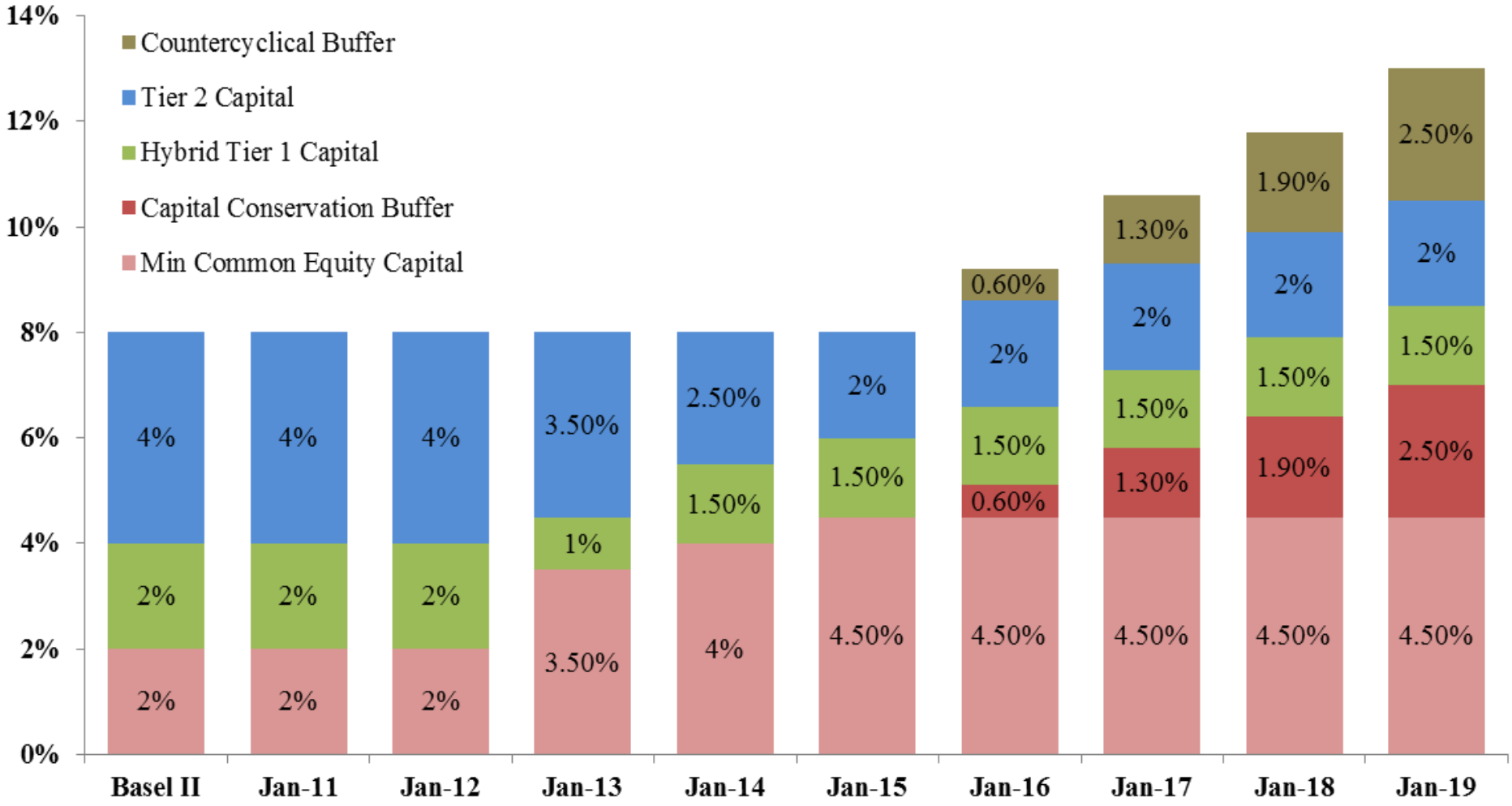
However some business overlaps (and conglomerates!)

- Investment / savings products, e.g.:
  - Investment bonds
  - Term deposits offered by banks and term-certain annuities offered by insurers
- Protection products
  - Investment guarantees and options written by investment banks versus variable annuities written by insurers
  - Trade finance offered by banks and surety bonds offered by nonlife insurers
- Both may buy or write CDS
- And both may be subsidiaries of each other or of holding companies spanning both sectors

Basel III and Solvency II: Different histories and drivers

	Basel III	Solvency II
Underlying source	Regulator(s) (BCBS)	EU Commission (c.f. CRD IV)
Coverage	Globally active banks	All EU insurers
Legal status	Must be transposed into local legislation	EU Directive
Main drivers	Refines Basel II in reaction to recent financial crisis - Raised capital requirements (and quality of capital) - Harmonised liquidity standards - Capital buffer	- Harmonise across Europe - Create comprehensive principles-based regulatory framework - Make capital requirements more risk-responsive and in line with underlying economic capital
Transition period	Relatively long	Shorter but has been growing
Further reforms?	E.g. BCBS reviewing trading book and securitizations	Broader in scope than Basel III, but still many details outstanding

Basel III capital requirements



Nematrian

The fundamental importance attached to systemic risk

- Given this backdrop you might be forgiven for assuming that capital adequacy requirements across banking and insurance might be diverging
- Yet perhaps the opposite is happening, driven by:
  - Convergence of staff skill-sets
  - Existence of unitary regulators
  - Direction of academic thought leadership
  - Risk management technology and idea dissemination
  - Greater mixing and interconnectivities between sectors
  - Most of all, increased regulatory focus on systemic risk

Human resource and other trends

- Greater value being placed on cross sector understanding
  - If only because firms' business models (and/or owners) may change through time
- Self-reinforcing effects of:
  - Unitary regulation: such regulators have vested interest in promoting harmonisation
  - Academics and other thought leaders increasingly seeking common strands between sectors
    - The entire financial services industry in some sense derives from the invention of money and the uses societies have made of this invention, so when we seek common strands there are almost certainly some to be found
  - Increasing dissemination of e.g. risk management disciplines across sectors
    - Consultants and software vendors gain economies of scale by doing so

Greater mixing and interconnectivities between sectors

- Traditional asset managers
  - Seem to have quite different business models to banks or insurers
  - But often manage their assets, are owned by them, or depend on them for business
- Hedge fund managers (and some other specialist managers)
  - Arguably akin to traditional asset managers
  - But may be replacing investment banks in provision of market liquidity
- Exchanges and CCPs
  - Financial market infrastructure organisations, facilitate trading
  - But may be disintermediated by (or disintermediate) other players

However, DB (and perhaps also CDC) pension schemes?

- Fit less well into the above picture
  - Less harmonised across jurisdictions and with other parts of the financial services industry
  - Heavy reliance on benefit security mechanisms not common elsewhere in the industry, e.g. sponsor covenant
- Is DB pensions a part of the financial service industry at all?
  - ‘Social role’
  - Is it covered by labour law (in EU reserved to the member states) or prudential regulation (part of single market, so more the remit of the EU centre)?
  - But in many respects pension promises often look and feel reasonable like some types of insurance promises?

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Importance to regulatory thought of systemic risk

- Politicians and regulators worry about systemic risk, because:
  - They have seen the system-wide impact of the recent financial crisis and don't want a repeat
  - Maybe they remember how political revolutions have often been triggered by financial crises
- They are also increasingly sceptical about the idea that different components of the financial sector are inherently different when it comes to potential to create, amplify or transmit systemic risk. Problems during the crisis included
  - Lehman, Freddie Mac, Fannie Mae and other banks
  - But also AIG, MMFs and shadow banking

Ascendancy in regulatory structures

- E.g. UK has:
  - Prudential Regulation Authority (PRA, part of Bank of England)
  - Financial Conduct Authority (FCA)
  - But top of its financial regulatory tree is its Financial Policy Committee, with its systemic risk remit
- Likewise Financial Stability Board at international level
- G20 commitments
- Linkage to macro-prudential policy goals

On macro-prudential policy Haldane (2014) notes

- "*Macro-prudential policy is gaining ground every bit as quickly as central bank independence did in the 1990s. It has quite radical implications. Pre-crisis credit cycles were allowed to operate largely unconstrained. Macro-prudential policy overturns that orthodoxy, with policy instead leaning against the credit cycle to moderate its fluctuations, both during the upswing and the downswing.*"
- He is hopeful that the financial system and economy may become less prone to the low-frequency, high-cost banking crises seen in the past. However, he thinks that the financial system could "*exhibit a new strain of systemic risk – a greater number of higher-frequency, higher-amplitude cyclical fluctuations in asset prices and financial activity, now originating on the balance sheets of mutual funds, insurance companies and pension funds*" which could in turn be transmitted to, and mirrored, in greater cyclical instabilities in the wider economy.
- He thinks it "*… likely that regulatory policy would need to be in a constant state of alert for risks emerging in the financial shadows, which could trip up regulators and the financial system. In other words, regulatory fine-tuning could become the rule, not the exception*"

Note association between systemic risk and non-banks

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G-SIFIs

- Most obvious implication is for firms that are deemed global systemically important financial institutions (G-SIFIs)
- Initially targeted banks: G-SIBs
- But also already includes some insurers: G-SIIs
- And FSB has consulted on including others, i.e. non-bank non-insurer (NBNI) G-SIFIs, see FSB (2014)
  - Proposed methodologies for assessment of (i) finance companies, (ii) market intermediaries (securities broker-dealers) and (iii) investment funds (including hedge funds)
  - Backstop methodology for all others, with market infrastructures assumed to be systemically important, at least in jurisdiction in which they are located

G-SIBs

- Global Systematically Important Banks
- 29 banks
- Too big to fail, based on: size, interconnectedness, complexity, lack of substitutability, global scope
- Negative externalities: implicit support and moral hazard
- Aim is to reduce probability of failure and impact of failure
- Additional capital requirements of between 1% and 2.5%
- Will cost of additional capital be offset by lower funding costs?

G-SIIs

- 9 insurers deemed Global Systematically Important by Financial Stability Board in July 2013 based on IAIS criteria *[Note more may follow, as covered only traditional insurers not reinsurers]*
- Views differ about appropriateness
  - “Little evidence.. traditional insurance generates.. systemic risk”
- Non-traditional insurance
  - Financial guaranty insurance, credit default swaps, derivatives trading
  - Variable annuities?
- Subject to enhanced recovery and resolution planning requirements, enhanced group-wide supervision and higher loss absorbency requirements for non-traditional and non-insurance activities

Consequence of decision to have some G-SIIs

Presumes that G-SII's will eventually be subject to higher capital requirements

↓

Requires an agreed common base against which to measure "higher"

↓

Requires a global capital framework (c.f. Basel III)

↓

Hence IAIS proposals for a global **Insurance Capital Standard** (ICS) by end 2016 and

Basic Capital Requirements (BCR) by end 2014

NBNI G-SIFIs assessment principles, according to FSB (2014)

i. *"The overarching objective in developing the methodologies is to identify NBNI financial entities whose distress or disorderly failure, because of their size, complexity and systemic interconnectedness, would cause significant disruption to the global financial system and economic activity across jurisdictions.*

ii. *The general framework for the methodologies should be broadly consistent with methodologies for identifying G-SIBs and G-SIIs, i.e. an indicator-based measurement approach where multiple indicators are selected to reflect the different aspects of what generates negative externalities and makes the distress or disorderly failure of a financial entity critical for the stability of the financial system (i.e. "impact factors" such as size, interconnectedness, and complexity)."*

Implications for regulatory frameworks

- Assessment methodologies for NBNI G-SIFIs are explicitly designed to be consistent with those for other G-SIFIs
  - Likely implies longer term harmonisation of capital adequacy requirements across financial services industry, including for asset managers / investment funds who are not yet included in lists of G-SIFIs?
  - Now that more than one sector has G-SIFIs we presumably need to think harder about treatment of groups that span sectors?
  - IAIS considering how to handle banking subsidiaries in the ICS. Will the opposite issue percolate back into banking standards?
- Where do pension funds fit into this picture?
  - Some might be large enough to fall within scope of some of the tests proposed by FSB (2014), although most of these are sovereign or local government schemes

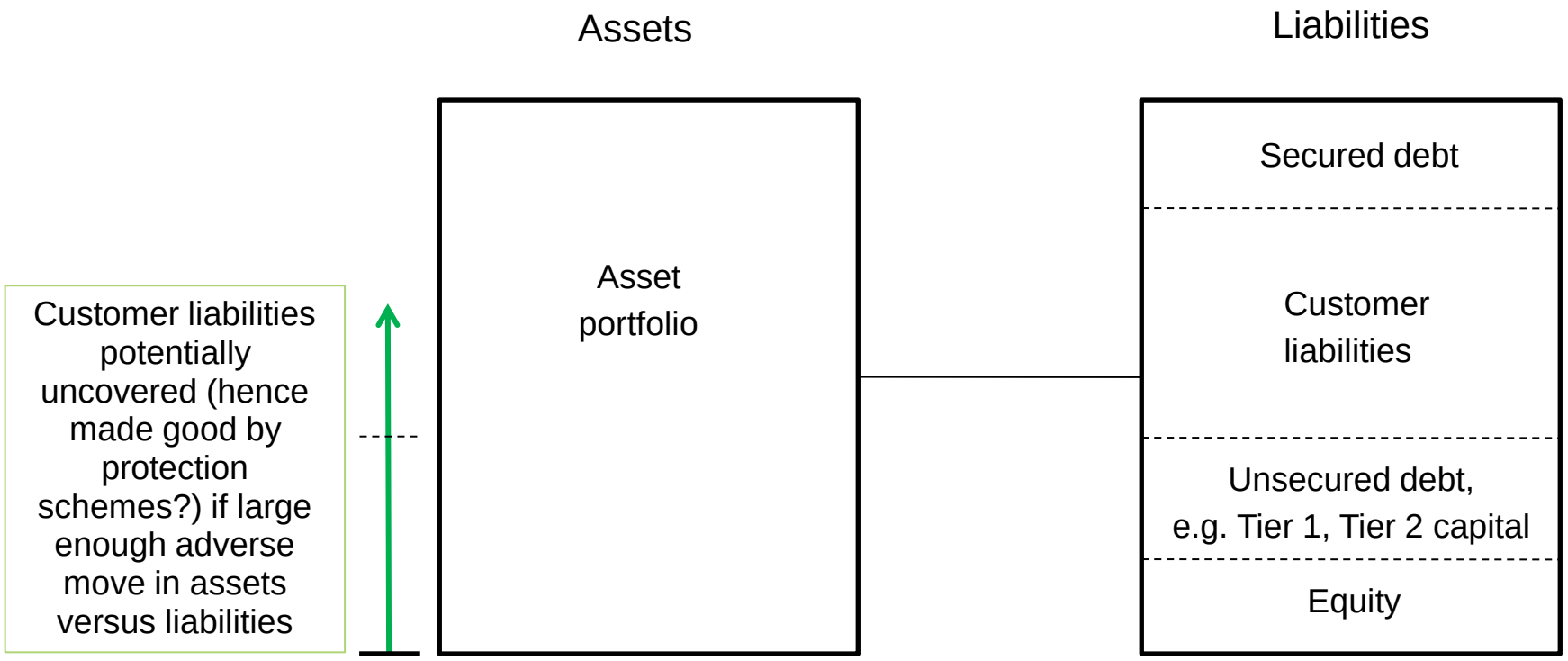
Implications for risk modelling

- Greater emphasis on stress testing and less statistical approaches?
- Greater emphasis on reverse stress testing?
- Likely greater emphasis on Expected Shortfall (ES) relative to Value-at-Risk (VaR)?
  - Better capture of tail risk
  - Ties in better with conceptual basis of capital adequacy
  - Specifically, better reflects losses that regulators, governments and customers might face in firm-wide tail events

BCBS (2012) view on ES

"*A number of weaknesses have been identified with using value-at-risk (VaR) for determining regulatory capital requirements, including its inability to capture "tail risk". For this reason, the Committee has considered alternative risk metrics, in particular expected shortfall (ES). ES measures the riskiness of a position by considering both the size and the likelihood of losses above a certain confidence level. In other words, it is the expected value of those losses beyond a given confidence level. The Committee recognises that moving to ES could entail certain operational challenges; nonetheless it believes that these are outweighed by the benefits of replacing VaR with a measure that better captures tail risk. Accordingly, the Committee is proposing the use of ES for the internal models-based approach and also intends to determine risk weights for the standardised approach using an ES methodology.*"

Subordination, tiering and tranching



- Banks issue debt of various subordinations, with different costs of capital
- Regulators view primary role of capital as absorbing unexpected losses; capital requirements reflect effectiveness of different types of capital in different situations

Capital adequacy: a conceptual framework

- Full (or ‘economic’ or ‘holistic’) balance sheet on previous page applies to essentially any financial firm or organisation
- Innovation in Kemp (2009) is to specify the problem of how much capital an organisation should hold to be deemed ‘solvent’ in terms of the yield spread (versus risk-free) that would or should apply to customer liabilities were they to be traded freely in the market place
- Approach highlights a large number of the subtleties that arise in theory and in practice with solvency computations, e.g.
  - Risk-reward trade-offs, relevance of matching, capital tiering, liquidity risk, tail risk (where it favours ES or Tail Value-at-Risk over VaR), different stakeholder perspectives (especially firm versus customers), market consistency, pro-cyclicality, macro-prudential supervision, own credit risk and sovereign risk

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The technological and societal environment

- IT innovation (as developments in social networking and the like are probably what we first think of when considering interconnectivities across society as a whole)
  - Cyber risk
  - Developments in IT software and hardware
- Broader network effects
- Seeking ‘fairness’

Cyber risk coverage in e.g. RIMS Knowledge Base

Topic	Number of entries	Topic	Number of entries
Business interruption	29	Global	202
Captives	8	Insurance	108
Claims	18	Legal	19
Cyber Risk	41	Legislative	2
Data Migration	1	Research	11
Emerging Risks	18	Risk Management (General)	203
Enterprise Risk Management (ERM)	62	Strategic Risk Management (SRM)	18
Finance	33	Techniques and Tools	11
General Management	144	Workers Compensation	8
Sum of the above figures	936		
Total after excluding duplicates	570		

Source: RIMS Knowledge Base, as at 2 September 2014

- Material number of Cyber Risk entries (articles, white papers, webinars etc.). Low number of entries for “Legislative” suggests not so targeted towards financial risk management as say Nematrian reference library

Rationale for interest in cyber risk, e.g. Rudolph (2012)

"*Extraordinary online business benefits have revolutionized business and, as digital interconnectedness continues growing daily around the globe, so too do the implications of its power. Managing assets and financial risk in business today relies heavily on the speed and ubiquity of computer connections and networks globally. As Microsoft founder Bill Gates noted, "Information technology and business are becoming inextricably interwoven. I don't think anybody can talk meaningfully about one without the talking about the other."*

But, for the nation's risk managers, it is clear that cyber-risk has become the revolution's menacing dark side. Increasingly, headlines spotlight massive credit card privacy breaches, allegations of sovereign espionage, and "hacktivists" penetrating the firewalls at the Department of Justice and other federal agencies, sending shudders through risk officers charged with protecting corporate assets, regardless of whether those assets are intellectual property, financial transactions, customer data, supply chains or infrastructure."

How important is cyber to the financial services industry?

Very?	Not very?
IT is an increasingly important and complex component of economic activity, including in financial services industry	Core business activities of e.g. banks and insurers are not explicitly IT in nature
Some sectors particularly reliant on IT, e.g. some market making and related activities	Past tendency to 'reinvent' financial services around IT unravelled in dot com bust
Core components leverage network effects, so are very sensitive to network disruptions	Finance relates to ownership of cash flows, which can be redrawn by courts, legislature etc.
Even short outages/failure can have severe reputational consequences, given the 'connected' world in which we live	Are we just behaviourally 'framing' our views around dystopian movies and the like in which disaster includes an IT element
	Not a 'new' threat. Financial sector already expends a lot of effort mitigating potential impact

How ‘entrepreneurial’ do we want finance to be?

- Value added to society from IT tends to have come from relatively entrepreneurial and experimental approaches to business
  - E.g. debate about ‘net neutrality’
- Established business models have since the earliest of times been susceptible to disruption
  - And nowadays IT is often a big contributor
  - E.g. music and book industries reshaped by Apple and Amazon
- Governments probably want entrepreneurship (as long as it is customer focused) *and* strong mitigation of cyber risk and systemic risk

E.g. Gracie (2014)

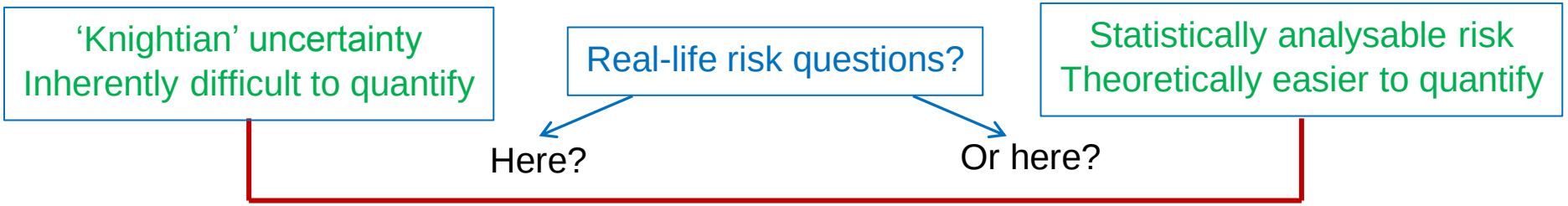
"But cyber presents new challenges. It is not a game against nature. Unlike other causes of operational disruption like fires and floods, we know there are agents out there – criminals, terrorist organisations or state sponsored actors – that have the will, if not necessarily the means, to attack the system. Motivations vary. More often than not they are economic – to defraud banks or their customers or to extract information. But we have seen cases where the motivation is to damage the system, either to destroy data or cause non-availability of systems or both. The capabilities of these actors, and thus the nature of the threat, are rapidly evolving – barriers to entry are low in cyber space and attacks are readily scalable. Low level attacks are now not isolated events but continuous. Unlike physical attacks that are localised, these attacks are international and know no boundaries. Cyber defence as a result has become not a matter of designing a hard perimeter that can repel attacks but detecting where networks have been penetrated and responding effectively where this occurs. As it changes and multiplies cyber is elusive, hard to define and to measure. But it is clear that the risk is on the rise and a growing cause of concern to industry and authorities alike. In 2013 the Bank of England's Systemic Risk survey reported a 10% increase in concerns regarding operational risk (the highest level it has been since the survey began). The risk was cited by 24% of respondents. The threat of 'cyber' attacks was the most commonly mentioned specific risk in this category."

IT software and hardware developments

- Dramatic advances in CPU and memory resources over the last 20-30 years
  - But sometimes we seem to be running to stand still
  - E.g. proxy modelling:
    - Models that emulate other models, needed so that we can manage risk more in real time
- Will theoretical advances, such as quantum computing help?
- Or can we speed up our calculations using advances in computational finance such as adjoint algorithmic differentiation, expressing our computations primarily in mathematical rather than numerical form?
  - Constraints arising from past investment in systems?
- Is cloud computing the solution, and if so how do we address privacy issues?

How computationally ‘hard’ are risk management questions?

- Ultimately, most risk management involves extrapolating behaviour into the future
- Extrapolation is inherently challenging
  - Because we don’t know for sure whether the data we base our extrapolation on will be representative of the future
- Where along the following spectrum do risk management questions lie?



Broader network effects

- We might view most of human history as involving incremental accumulation and dissemination of technological knowledge, i.e. as involving network effects
- Being ‘hyper-social’ and sharing ideas / technology is part of the human DNA
- Within the field of regulatory thought as well as outside it, e.g.:
  - Why have modern regulatory frameworks converged onto a three Pillar structure?
  - Why do we mandate sharing of financial and business information in Pillar 3?
  - Why do we mandate doing this in a format that is easily machine readable?
  - Why do we share risk management tools, disciplines and ideas?

Seeking ‘fairness’

- Seeking ‘fairness’ is a core driver of regulatory frameworks
  - E.g. specific ‘treating customers fairly’ (TCF) rules
  - Although has many different interpretations, c.f. EU Gender Directive
- Tends to increase focus on ‘fair’ values
- How do DB pension funds fit into this picture
  - Social role does not tie in with exact fairness. What about the welfare of the disadvantaged?
  - But are societies increasingly targeting latter within social security systems rather than private sector solutions?

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Other regulatory drivers and trends

- Purpose of financial regulation
- Ideas for change proposed early in the financial crisis
  - ‘Prudential’ ideas
  - ‘Conduct’ ideas
- Other recent major EU-level directives and initiatives
  - EMIR, MiFID II, AIFMD, UCITS V
- Shadow banking

Purpose of financial regulation

- Itself debatable
  - C.f. Cold war: command economy versus laissez-faire capitalism
  - But even then plenty of shades in between
- Usually subdivided between elements relating to
  - What level of capital do we want firms to hold (‘prudential’)
  - What sorts of behaviours do we want firms to exhibit (‘conduct’)

‘Prudential’ ideas proposed early in financial crisis

- Mainly targeted banks, as they were at the epicentre of the crisis
  - Only more recently have other institutions been specifically caught in the systemic risk net
- More capital and more of the ‘right’ sort of capital, e.g. BCBS (2009) which ultimately led to Basel III:
  - Improve quality, consistency and transparency of capital base
  - Strengthen risk coverage of the capital framework
  - Introduce leverage ratio limits to supplement existing risk-based framework
  - Introduce counter-cyclical capital buffers (including contingent capital)
  - Introduce enhanced liquidity standards (e.g. LCR and NSFR)

‘Conduct’ ideas proposed early in financial crisis

- Many of these have been applied more widely than just banking

Idea	Driven by systemic risk concerns?	Extent of application	Also applied outside banking sector?
(a) Restricting size of systemically important organisations	Yes	Limited	N/A
(b) Limiting types of activities firms can do	Yes	Greater than (a), e.g. bank ring-fencing	Not to date
(c) Changing market structures	Yes	Major, e.g. central clearing	Significant impact on some organisations
(d) Limiting scope to profit from others’ weaknesses e.g. banning short selling	Some link	Largely impractical*	Effectively not
(e) Improving resolvability	Yes	Widespread across all firm sizes	Yes
(f) Improving liquidity risk management processes	Some link	All banks	Limited
(g) Improving overall risk management disciplines	Some link	Everyone, e.g. introduction of risk management function	Yes

* Although market drivers (e.g. increased funding costs) have to some extent achieved the same goals

Other recent major EU-level directives and initiatives

- In probable order of decreasing linkage to lessons directly arising out of the recent financial crisis:
  1. European Market Infrastructure Regulation (EMIR)
  2. Markets in Financial Instruments Directive II (MiFID II) and the associated Markets in Financial Instruments Regulation (MiFIR)
  3. Alternative Investment Fund Managers Directive (AIFMD)
  4. Undertakings for Collective Investments in Transferable Securities Directive V (UCITS V)
- CRD IV not covered in paper
  - Primarily about implementation of Basel III, which is covered more directly
  - Although also includes e.g. bonus cap and standardised reporting

EMIR

- Introduces EU mandatory central clearing (and CCPs) of simpler derivatives that had previously traded OTC, c.f. Dodd-Frank in USA
  - Responding to G20 pledge in 2009
  - Both financial and non-financial counterparties, reporting, clearing, operational risk management requirements for non-cleared derivatives and collateral
  - Whether it will actually reduce rather than merely redistribute systemic risk is debatable
  - But this misses the point that the underlying driver is probably more a desire for greater transparency and resolvability
- Contentious for non-financials and for pension funds
  - EMIR views pension funds as more inside than outside financial services industry?

MiFID II and MiFIR

- Updates MiFID I, i.e. framework EU directive covering investment intermediaries and organised trading of financial instruments
  - Extends MiFID to additional products and services, harmonises requirements applying to different types of trading venue, more precise definition of exempt (mainly own account) activities, corporate governance and investor protection
  - Upgrades market structure to reflect recent market developments, e.g. algorithmic and high frequency trading, introduction of OTFs (akin to SEFs under Dodd-Frank) and common pre-trade and post-trade transparency provisions
  - Probably most contentious aspect is prohibition on inducements, although a number of member states already have requirements that arguably go beyond MiFID II

AIFMD and UCITS V

- AIFMD introduced regulation of alternative investment fund managers (AIFMs) for AIFs managed in or marketed in EU
  - Regulations somewhat akin to those that already apply to UCITS fund managers
  - Requirements on transparency, remuneration, depositaries, valuation of assets and leverage
  - Will facilitate EU passporting but only for certain types of investor
- UCITS V aligns several aspects of previous UCITS rules with AIFMD:
  - Amends depositary and custodian responsibilities and liabilities (issue triggered by Lehman default and by Madoff case)
  - Introduces new requirements regarding remuneration policies

Shadow banking sector

- None of the above arguably directly target shadow banks
  - Even though many commentators, e.g. Impavido et al (2011) and Haldane (2014) have noted the potential for risks to migrate from highly regulated sectors such as banking and insurance to less highly regulated sectors
- High on the systemic risk radar of the FSB
  - Given perceived contribution of the sector to the financial crisis

FSB perspective, e.g. FSB (2013)

'The "shadow banking system" can broadly be described as "credit intermediation involving entities and activities (fully or partially) outside the regular banking system" or non-bank credit intermediation in short. Such intermediation, appropriately conducted, provides a valuable alternative to bank funding that supports real economic activity. But experience from the crisis demonstrates the capacity for some non-bank entities and transactions to operate on a large scale in ways that create bank-like risks to financial stability (longer-term credit extension based on short-term funding and leverage). Such risk creation may take place at an entity level but it can also form part of a complex chain of transactions, in which leverage and maturity transformation occur in stages, and in ways that create multiple forms of feedback into the regular banking system.

Like banks, a leveraged and maturity-transforming shadow banking system can be vulnerable to "runs" and generate contagion risk, thereby amplifying systemic risk. Such activity, if unattended, can also heighten procyclicality by accelerating credit supply and asset price increases during surges in confidence, while making precipitate falls in asset prices and credit more likely by creating credit channels vulnerable to sudden loss of confidence. These effects were powerfully revealed in 2007-09 in the dislocation of asset-backed commercial paper (ABCP) markets, the failure of an originate-to-distribute model employing structured investment vehicles (SIVs) and conduits, "runs" on MMFs and a sudden reappraisal of the terms on which securities lending and repos were conducted. But whereas banks are subject to a well-developed system of prudential regulation and other safeguards, the shadow banking system is typically subject to less stringent, or no, oversight arrangements.'

FSB policy work on shadow banking and systemic risk

- FSB (2013) indicates following main strands:
  - Mitigating risks in banks' interactions with shadow banking entities, e.g. scope of consolidation, treatment of large exposures, investment in equity of such funds.
  - Reducing the susceptibility of MMFs to 'runs'. Focus has been on imposing bank like capital requirements on constant (or stable) NAV funds and/or requiring them to convert to floating NAV funds, but different regulators have different preferences
  - Improving transparency and aligning incentives in securitisation
  - Dampening procyclicality and other financial stability risks in securities financing transactions, e.g. standards on data collection and aggregation, re-hypothecation, collateral valuation and management and policy recommendations on central clearing, bankruptcy law and haircuts (i.e. margins)
  - Assessing and mitigating systemic risks posed by other shadow banking entities and activities

Changing Financial Sector Interconnectivities

- Background and aims of Workshop
- Similarities and differences between different sectors
- Attitudes towards systemic risk and macro-prudential policy
- The technological and societal environment
- Other regulatory drivers and trends
- Common strands

Initial working thesis of paper

- Current financial service regulatory strands can perhaps be grouped into three main strands:
  1. Increased focus on systemic risk following the recent financial crisis
  2. Increased scepticism amongst regulators and governments that different parts of the financial services industry are inherently different (or at least as different as some in individual parts of the industry might claim)
  3. Continuing societal change driven by IT and other technological developments and by how societies interpret ‘fairness’
- Where do DB pensions fit into this picture?

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