Discounting

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Agenda

- Discount rates in actuarial work
- Discount rates in financial reporting
- Allowing for liquidity in discount rates

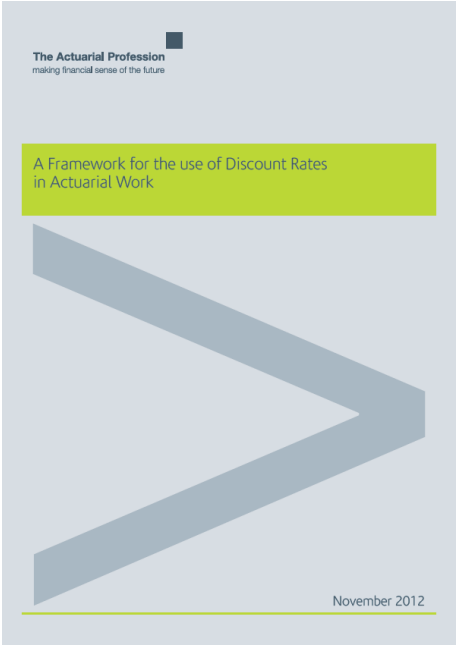
First part of presentation based on Cowling et. al. (2011) *Developing a framework for the use of discount rates in actuarial work* (2011) by Cowling, C.A., Frankland, R., Hails, R.T.G., Kemp, M.H.D., Loseby, R.L., Orr, J.B. and Smith, A.D.. Available at e.g. http://www.nematrian.com/presentationlibrary.aspx or summary here.

Second part of presentation based on IAA (2013) *Discount Rates in Financial Reporting* (2013) by IAA (and Milliman). Purchasable e.g. here (N.B. a discounted price may apply if you are an IAA Section Member).

Third part of presentation based on Kemp, M.H.D. (2009) *Market Consistency: Model Calibration in Imperfect Markets*. John Wiley and Sons. Purchasable e.g. here.

Agenda

- Discount rates in actuarial work
- Discount rates in financial reporting
- Allowing for liquidity in discount rates



Discount rates in actuarial work

- *Developing a framework for the use of discount rates in actuarial work* a thought leadership piece commissioned by Institute and Faculty of Actuaries:
  - Why we need discount rates and how discount rates can “go wrong”
  - Current practice (in UK)
  - Matching calculations
  - Budgeting calculations
  - Proposed framework and recommendations
  - Glossary, references and appendices

Why we need discount rates

- Actuarial work often analyses future cash flows, both assets and liabilities
  - Present values and discounted cash flows summarise future cash flows in today's terms, although some "information" lost hence e.g. stochastic projections
  - Discounting and hence discount rates are key to this process
- Particularly for financial transactions
  - E.g. purchase, sale or surrender of an (insurance) product such as an annuity or life policy; transfer value or cash withdrawal from a DB pension scheme; splitting of pension assets on divorce; takeover or merger of a company (with or without a DB pension scheme); purchase or sale of investments (including equities, bonds and real estate); comparison of remuneration benefits and costs; etc
  - Or where such a financial transaction would provide a benchmark

Discounting not just of interest to actuaries

- Many others also interested in discounting, e.g.
  - Within firms:
    - Financial planning: capital budgeting and accounting typically depend on discounting via e.g. weighted average cost of capital (WACC)
    - Financial reporting: discount rates influence both P&L accounting and solvency analysis
  - Across society
    - Regulators: interested in ‘value for money’ and long-term impact of charges etc.
    - Paper prepared at roughly same time as UK government consulted on discount rate to use in computing members’ pension contribution rates for public sector DB schemes
- Paper focuses on actuarial use of discount rates, mainly liability measurement
  - Keen to establish a common framework for impartial and effective communication

Two main roles of money

Role:	‘Medium of exchange’	‘Store of value’
Use:	Exchange goods between economic participants (e.g. division of labour)	Shift consumption along the timeline
If ceased to function?	Essential, unless we want to return to barter	Money itself is not typically a large part of a developed economy’s total asset base
Required features for function to be effective	Short-term value stability and perceived ‘soundness’ of money	Ability to buy/sell what we want later, i.e. to have functioning markets
Parts of financial services industry most linked to role	Retail banking, commercial banking (?)	Life insurance, asset management, investment banking (?)
Typical focus of regulatory activity	Avoid undue calls on depositor insurance arrangements	Greater focus on providers ‘honouring their promises’

How discount rates can “go wrong”

- **Level**: too high and current value will be understated, too low will be overstated
  - May contribute to poor decision making, e.g. inappropriate purchase (or sale) of a company or a personal financial product
  - May result in build up of reserves that are unnecessarily high or dangerously low
- **Volatility**:
  - Too volatile: may lead to decision-making paralysis and impression of excessive risk
  - Not volatile enough: may lead to complacency and misunderstanding of risks involved

Current practice (in UK)

- Wide variety of uses:
  - Patel and Daykin (2011) provides historical context. Principal drivers of approach selected: purpose and context
- Two main categories:
  - Matching calculations
  - Budgeting calculations
- Both relate assets to liabilities and hence to “time value of money”
  - The greater the mismatch between assets and liabilities the more important is the selection of discount rate(s)
  - Some (liability) discount rates do not depend on any specific assets, e.g. social time preference rate, but they are the exception rather than the rule

Matching calculations (1)

- (Liability) discount rate derived from price of matching asset
  - Market consistency, marking to market, fair valuation, Solvency II
- More relevant for:
  - Pricing an immediate market transaction
  - Valuation of assets and accrued liabilities for monitoring solvency and asset adequacy (presumes solvency test relates to cost of transferring assets / liabilities)
  - Some other accounting purposes
- Equates 'price' (amount for which product changes hands between willing buyer and willing seller) with 'value' (utility product provides to holder)

Matching calculations (2)

- Relies on:
  - Ability to carry out perfect (static or sometimes predictable in advance dynamic) replication, and Law of One Price. Ideally deep, liquid and transparent markets: well functioning, cheap to deal in and not permitting (pure) arbitrage
- Highlights (mismatch) risk and minimises accounting arbitrage
  - If aim is ‘fair’ apportionment of value between people with different interests
- Building blocks for discount rate selection:
  - Selection of matching instruments used to construct discount curves
  - Allowances for default risk, taxation, other expenses and illiquidity effects

Budgeting calculations (1)

- (Liability) discount rate derived from viewpoint of how the liability is going to be financed
  - Based on expected returns from a pre-determined investment strategy
  - 'Price' and 'value' typically diverge
- More relevant for:
  - Some accounting purposes
  - Aggregate ('ongoing') funding rather than discontinuance ('solvency') valuation of liabilities for open DB pension fund (and other 'budgeting' type activities)
  - Maybe transactions involving mutuality (e.g. participating insurance)
  - Taking views on the market being 'wrong' (e.g. asset management position taking)

Budgeting calculations (2)

- Generally arise when long term future cash flows need to be met and resources accumulated to meet them
  - There are different sorts of liabilities, e.g. contractually obliged to honour vs. constructive (in sense that will be honoured in any reasonable going concern type of assessment) vs. discretionary
- Return seeking assets may provide higher longer term returns
  - E.g. equity risk premium or other “outperformance” premiums
  - Discount rate may then need to include some suitable level of prudence to allow for these risks
  - Also allowances for default risk, taxation, other expenses and illiquidity effects

Reconciling matching and budgeting approaches

- Same answer if budgeted expected returns on assets (reduced by any allowance for prudence) same as returns implied by current prices
- C.f. investment analyst recommendations
  - Analyses what (intrinsic) ‘value’ analyst thinks ought to be ascribed to company
  - Will normally differ from (market) price
- Corollary: using budgeting discount rates (if different from matching discount rates and if applied to mismatched positions) involves **investment views**
  - These may be ‘conventional’, e.g. that equities should outperform bonds over the long term, but are still views, i.e. not sure to happen

Proposed framework and recommendations (1)

- Explain type of discount rate being used, how it has been derived, how it allows for risk and purpose of valuation
- Differentiate between three main liability types:
  - Contractually guaranteed vs. constructive vs. discretionary
- And between purposes:
  - Solvency: assess assets required to meet liability cash flows in absence of any other supporting financial entity
  - Transaction: assess (fair) value of assets to transact in exchange for liability cash flows
  - Funding: advise on accumulation of assets to meet liability cash flow when we can ignore consideration of likely sufficiency of assets in the interim

Proposed framework and recommendations (2)

Cash flow / Purpose	Guaranteed	Constructive	Discretionary
Solvency	Matching	- [1]	- [1]
Transaction	Matching	Matching	Matching
Funding [2]	Budgeting	Budgeting	Budgeting

[1] *A matching framework would be appropriate for projections of future solvency*

[2] *It may be necessary to introduce matching framework constraints in budgeting calculations. The need for such constraints will be greater if the liabilities / cash flows are predominantly guaranteed rather than constructive or discretionary*

Paper concludes with specific recommendations for actuaries working in:

- Pensions: funding and reserving, pension cost accounting, member options
- Life: reserving, accounting, pricing, policyholder calculations
- Non-life: unpredictability of cash flows, reserving, accounting, pricing

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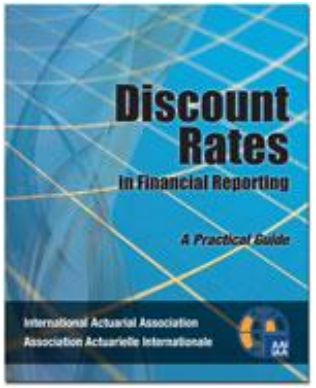
- Allowing for liquidity in discount rates



Discount Rates in Financial Reporting: A Practical Guide

- IAA book published October 2013
  - Earlier exposure draft ("Issues Associated with the Determination of Discount Rates for Financial Reporting Purposes") issued in 2012
- Specific coverage of:
  - Three practice areas: life, non-life and pensions
    - Presumably investment actuaries are deemed rare or to adopt an investment focus
  - Three main accounting frameworks: U.S. statutory, IFRS 4, Solvency II (and Canadian and Australian GAAP)
  - Four main regions: Asia, Australia, Europe, North America
  - Seven main risks: Credit, currency, equity, inflation, interest rate, liquidity, reinvestment

Coverage: main sections

- Introduction and Background (1), Purpose and Objective (2)
- Risk-free rates (3) and Decomposition of Discount Rates (4)
- Estimating beyond the Term Period (5)
- Replicating portfolios (6) and Deflators (7)
- Currency and Sovereign Risks (8), Credit and Liquidity Risks (9), Inflation (10)
- Non-life Insurance (11), Participating Business (12)
- Stochastic Methods (13)
- Investment-Related Expenses (14)
- Investment Assumptions (15)
- Technical Reviews, etc. (16), Communication etc. (17), Recent Developments (18)

Coverage: case studies

Number	Title	Example spreadsheet?
1	Estimation and extrapolation of term structure of interest rates	YES
2	Calculation of economic value for unit-linked products	YES
3	Participating assurance and interest-sensitive life business	
4	General perspective on replicating portfolios	
5	Replicating portfolios from a North American perspective	
6	Illiquidity premium determination methods	YES
7	Currency risk in financial reporting for a deferred annuity product	YES
8	Developing a yield curve in a market with no reliable, observable market prices	YES
9	Non-life unpaid claim liabilities	YES
10	Eurozone IAS 19 pension	
11	Discounting employee benefit cash flows	YES
12	Canadian pension	
13	Sovereign risk	
		+ one relating to recent developments

Highlights

- Importance of valuation purpose
  - Going concern versus liquidation or solvency valuations
- Time value of money
- Different stakeholders can hold different views, which can be conflicting
  - Selection needs to involve a balanced consideration of stakeholder interests, professional obligations and applicable standards
- Often but not always need for consistency between assets and liabilities
  - Not all financial reporting frameworks involve consistent approaches

Risk-free rates according to IAA (2013)

- Discount rates can be derived using expected returns that include risk adjustments. Doing so presumes risk adjustments will be earned, lowering immediate liability valuations
- Using risk-free discount rates means value derived from investing in risky assets is not assumed to accrue immediately, but rather only on a realised basis after the risk has been borne
- Possible sources referred include (all examples of replicating portfolios):
  - Government debt yield curves
  - Swap rates
  - Corporate bond rates (not normal for a risk-free rate)
  - Option pricing methods applied to option prices

Using government debt yield curves

- IAA (2013) notes that some practitioners believe that politically stable governments in economically developed countries have low probability of defaulting on their debts
  - Taxing power, ability to expand money supply (assumes have own currency)
  - Debt forgiveness and/or foreign aid
- Practical issues:
  - What if thinly traded instruments: an illiquidity premium?
  - Non-availability of relevant maturities: need for extrapolation? Extrapolate using spot rates or forward rates? Or other market observables?
  - Which subset of instruments to use: e.g. on-the-run versus off-the-run securities?
  - Other: tax treatment, transaction costs, other market frictions?

Using swap rates (or corporate bonds)

- IAA (2013) notes that given these issues some practitioners use swap rates (even though swaps face some counterparty risk and credit risks and there is agency risk implicit in the reference floating rate itself):
  - Swaps market usually highly liquid; may be more liquid than government debt
  - Is approach adopted for Solvency II QIS5
  - Counterparty may be highly rated, swaps are typically collateralised
  - Can in theory subtract a credit spread to arrive at a rate that is as close to risk-free as possible; QIS5 used 0.1% pa [*but LTGA assessment used a different figure?*]
- IAA (2013) notes that corporate bonds typically do express credit risk
  - But still often used to account for DB pension obligations and annuity portfolios

Using option pricing techniques

- IAA (2013) seems to think that option pricing methods may offer a powerful alternative in situations where:
  - Risk-free rates cannot be directly observed or there is considerable uncertainty
  - A reliable option pricing model exists that is historically validated
  - One of its inputs is the risk-free interest rate
  - Other inputs can either be estimated or observed
- Kemp (2009) indicates that normally process is the opposite of this
  - Other less easily observable inputs (e.g. market implied volatility) are derived based on option prices and more easily observable inputs including interest rates

Decomposition of discount rates

- Given a risk-free interest rate can then quantify risk exposures expressed by a given risky discount rate (such as a corporate bond yield curve)
  - Important when considering how much of a given reference credit spread should be excluded when valuing e.g. annuity books
- Part of yield may be compensation for credit risk, e.g. expected default risk, part for liquidity risk etc. IAA (2013) refers to decomposition between:
  - Credit risk: estimated using e.g. historical averages, Merton (1974) or Leland and Toft (1996) type models
  - Liquidity risk: estimated using e.g. CDS negative basis and/or structural models, covered bonds, proxy methods or prices for “liquidity renting”

Other topics (1)

- Deflators: a very ‘actuarial’ approach to bridging the gap between risk-free rates and risk-adjusted rates
  - Are stochastic discount factors though which a set of real-world scenarios may be filtered to produce a market-consistent valuation
  - Rarely used outside actuarial world
- Currency risk: use forward rates rather than risk-free rates?
- Sovereign risk: but note that liability usually relates to contractual terms between e.g. insurer and policyholder rather than involving sovereign itself
- Credit risk (including own credit risk) and liquidity risk

Other topics (2)

- Preparing for and carrying out technical reviews, peer reviews and audits
  - Key is clear and systematically prepared documentation: of process, of methodology followed, of data and of assumptions used
- Communication and presentation
  - Some disclosures may be specified in actuarial or accounting standards
  - Sensitivity testing often important
- Case studies included in IAA (2013)
  - Usually have key learning objectives
- Book was originally written as educational monograph rather than seeking to offer definitive answers

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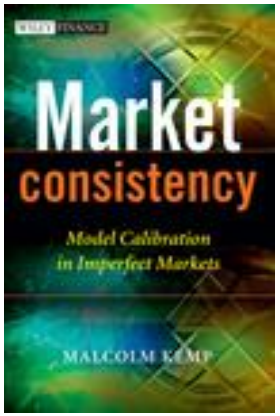


Allowing for liquidity in discount rates

- Subject illuminates many of the issues referred to in previous slides
  - E.g. to identify how to allow for liquidity you first need to identify what the risk-free rate should be, onto which you might apply an illiquidity adjustment
  - Chapter titles in Kemp (2009) include:
    2. When is and when isn't market consistency appropriate
    3. Different meanings given to 'market consistent valuations'
    4. Derivative pricing theory
    5. The risk-free rate
    6. Liquidity theory
- Topical in relation to Solvency II and LTGA

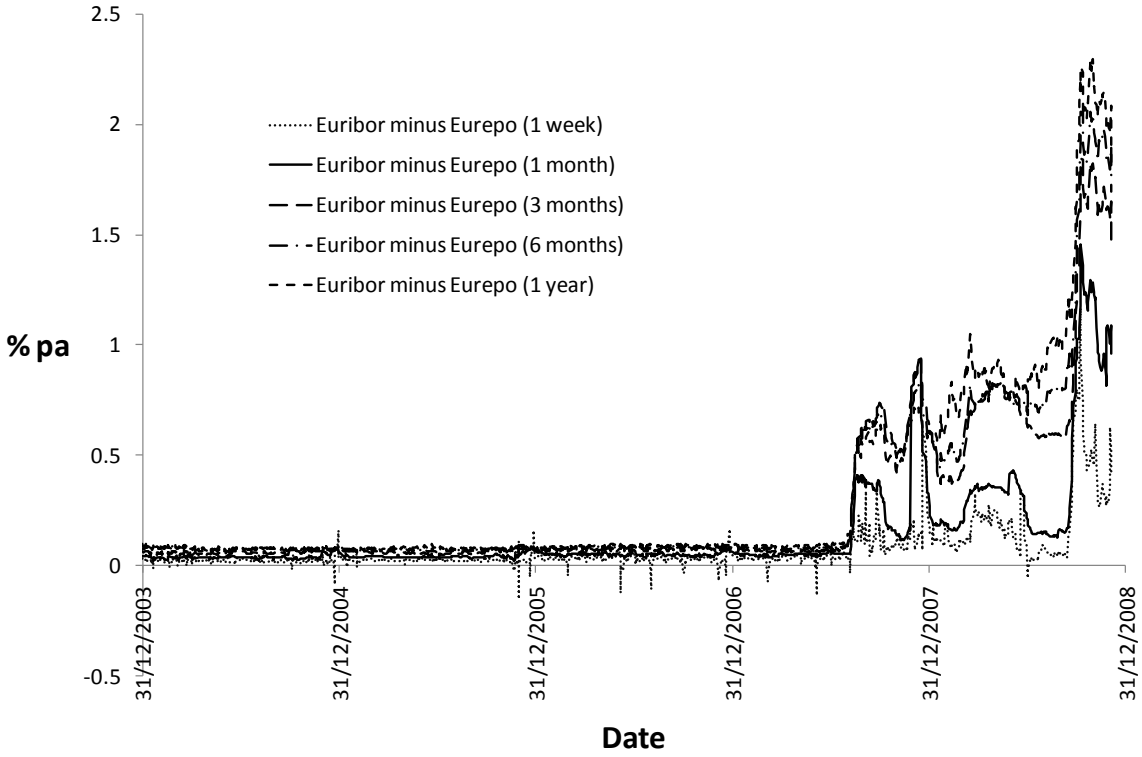
Liquidity risk

- Proximate cause of many of the problems in the 2007-09 credit crisis
  - Firms were unable to offload illiquid ('toxic') assets to meet funding requirements
  - Underemphasised in Basel II
- Even by 2007 the UK FSA and others had realised that:
  - Banks' maturity transformation activities make them inherently susceptible to liquidity risk [*N.B. G-SII debate: do insurers have similar susceptibilities?*]
  - Adequately capitalised firms may not always be able to obtain the liquidity that they require when there are market failures
  - Managing liquidity risk involves trade-offs
  - Liquidity risk can grow in severity very rapidly and is dependent on general liquidity climate (e.g. extent of general liquidity 'hoarding') as well as firm-specific features

Start of 2007-09 Credit crisis

- Sudden jump in uncertainty in money markets and credit markets in late July and early August 2007
- Loss of risk appetite led to reining in of leverage banks were willing to extend to certain active quantitative hedge fund managers
- Knock-on position unwinds in ‘crowded’ trades led to significant losses for some managers

Term structure of Euribor versus Eurepo

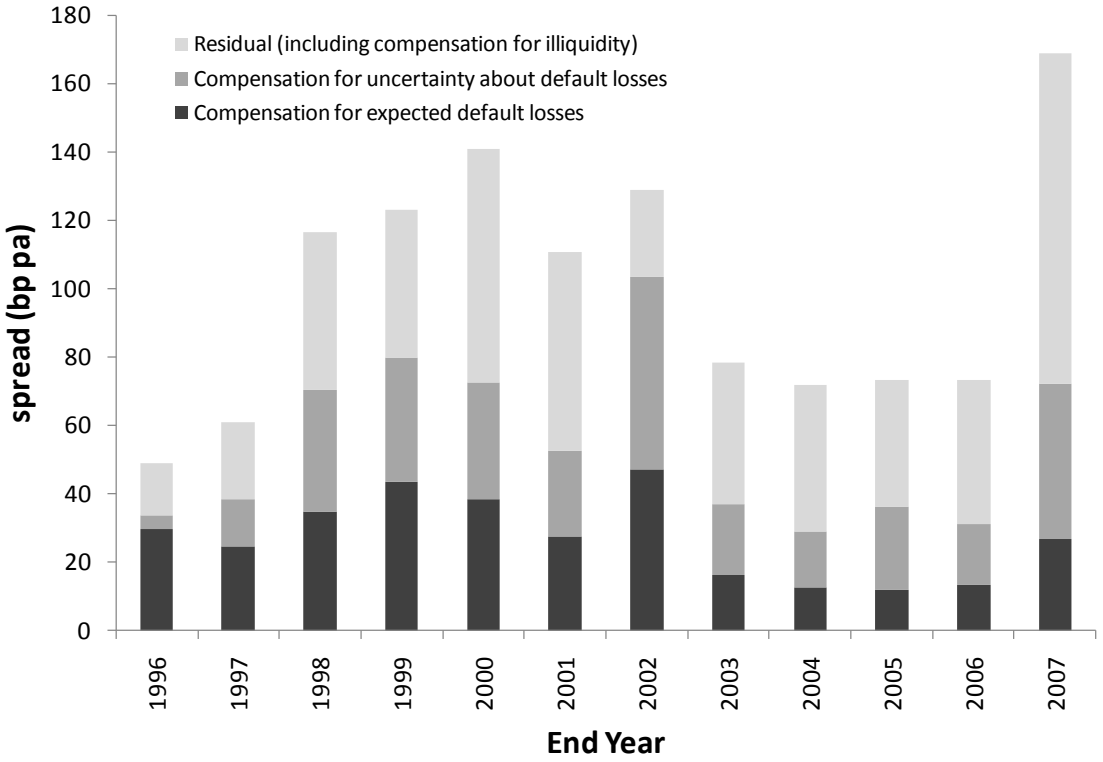


Source: Kemp (2009) and Bloomberg

Not just of academic interest in stressed markets

- Annuity reserving
  - Sensitive to longevity risk
  - And assumed long-term yield
- One common approach is to take credit for assumed yield uplift available from investing in illiquid corporate bonds
  - Since liabilities are also illiquid

Decomposition of average corporate bond spreads into different elements (investment grade credit spreads)

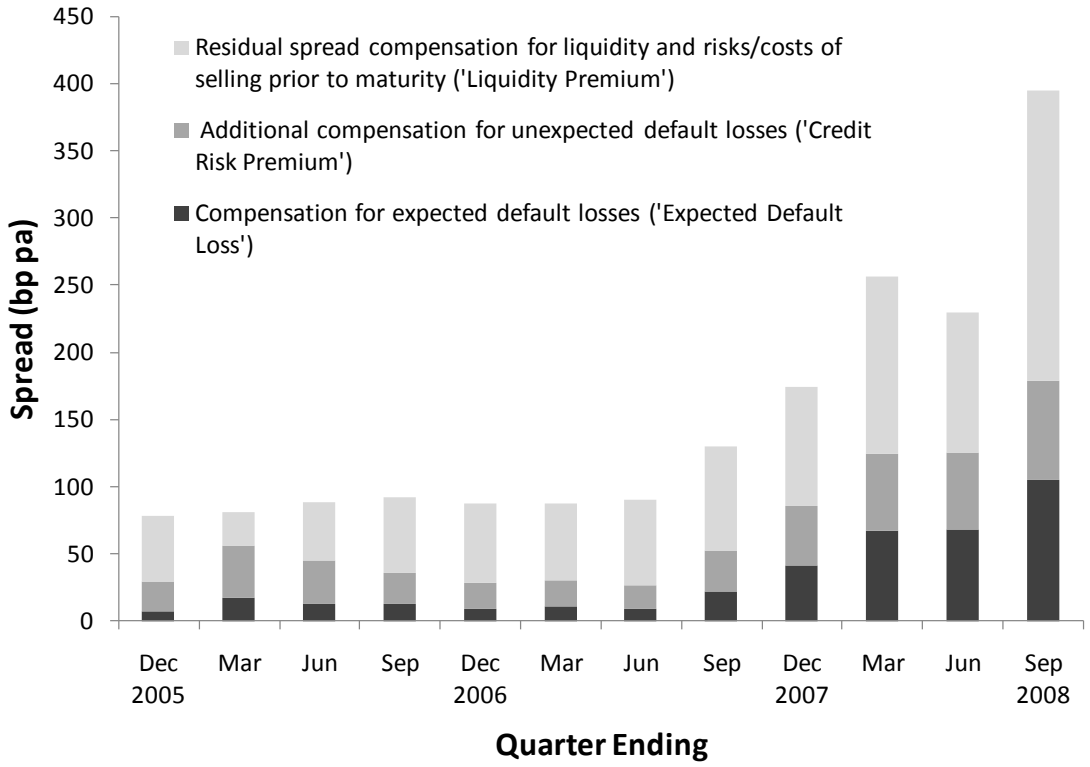


Source: Kemp (2009) , Webber and Churm (2007), Bank of England (2008)

Financial impact can be very substantial

- Liquidity premium thus derived can at times be very substantial, e.g. c. 2% pa at end Sept 2008
- Compounded over significant durations has large impact on:
  - Pricing of annuities (bulk and individual)
  - Buy-out terms available to DB pension schemes
  - Reserves required for such liabilities

Decomposition of average corporate bond spreads into different elements (average A rated credit spreads)



Source: Kemp (2009) , Wilson (2008) and Barrie & Hibbert

What is liquidity? (1)

- Brunetti and Caldarera (2006) define liquidity as:
  - ‘the ability to trade quickly any amount at the market price with no additional cost’
- But this definition actually hides a divergence of viewpoints

What is liquidity? (2)

- Is liquidity a single ‘universal’ market factor that some instruments have more of and some have less of
  - E.g. does represent length of time it might take to transact at approximately mid price in a given instrument in a given size
  - Illiquidity in assets and liabilities ought then partially to net off against each other: both are travelling in the same direction along the time axis
- Or is it market or instrument specific, deriving from uncertainty in the instrument’s own bid/offer spread?
  - Illiquidity in assets and liabilities may not net off, indeed may be additive
  - In a forced unwind situation would need to sell assets *and* buy back liabilities

What is liquidity? (3)

- Brunnermeier (2008) and others characterise liquidity into two types
  - Funding liquidity*:* how easy is it for investors and arbitrageurs to obtain funding by *pledging* assets as collateral
    - Influenced by *market structure*, *transparency of valuation* etc.
  - Market liquidity (aka asset liquidity): how easy is it to raise money by selling assets
    - Influenced by *bid-offer spreads*, *market depth*, *market resilience*
- Interaction can cause liquidity to evaporate very rapidly, e.g. via:
  - Loss spirals – lenders may require borrowers to put some of their own money at stake, and (mark-to-market) losses will deplete the available capital
  - Margin spirals – may stop other market participants from exploiting the 'attractive' prices at which positions are then being liquidated

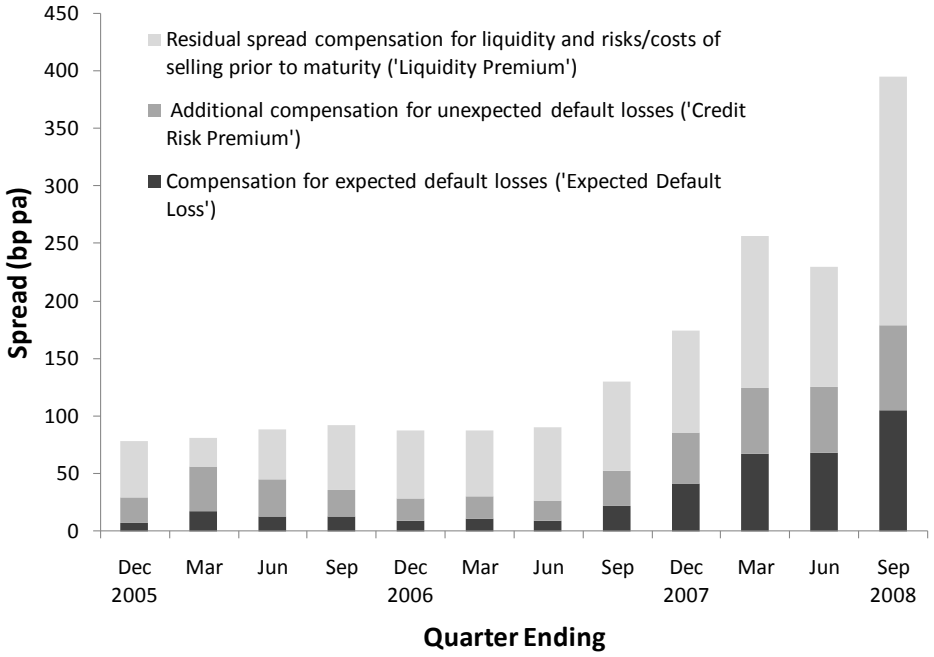
What is liquidity? (4)

- There have been various attempts to model impact of liquidity risk on prices
- Impact seems to depend on type of liquidity definition researchers are adopting
  - Effects linked to markets shutting down, as opposed to merely bid-offer spreads widening, appear to have much more significant impact on price formation
  - And on what are the optimal amounts of liquid versus illiquid assets that market participants should hold

Modelling liquidity premiums on different instruments

- Very difficult to measure price or value that market places on liquidity in isolation
  - Relevant market observables usually depend on other risks that also cannot be observed in isolation, e.g. ‘pure’ credit risk
- Is the correct model additive or multiplicative?
  - Difference might be >20% of value!

Decomposition of average corporate bond spreads into different elements (average A rated credit spreads)



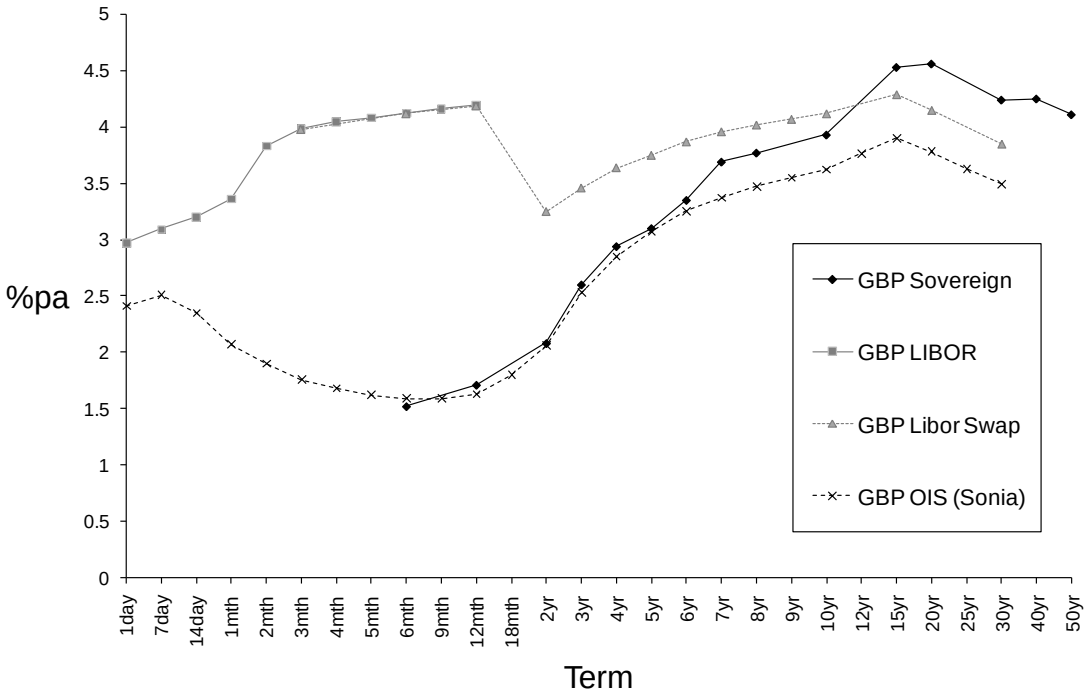
Source: Kemp (2009) , Wilson (2008) and Barrie & Hibbert

Additive?	Or Multiplicative?
$c_s = c_d + c_u + l_a$	$c_s = (c_d + c_u) \times (1 + l_m)$

What is the risk-free rate?

- In late 2008 UK government debt yields were above corresponding swap rates, particularly overnight indexed swap (OIS) rates
- Kemp (2009) argues in favour of using OIS swap (or secured) rates as best proxy for risk-free
- This is also how banks now typically price derivatives
  - Banks are also now much more focused on Credit Valuation Adjustments (CVA) etc.

Different Sterling yield curves as at 24 November 2008

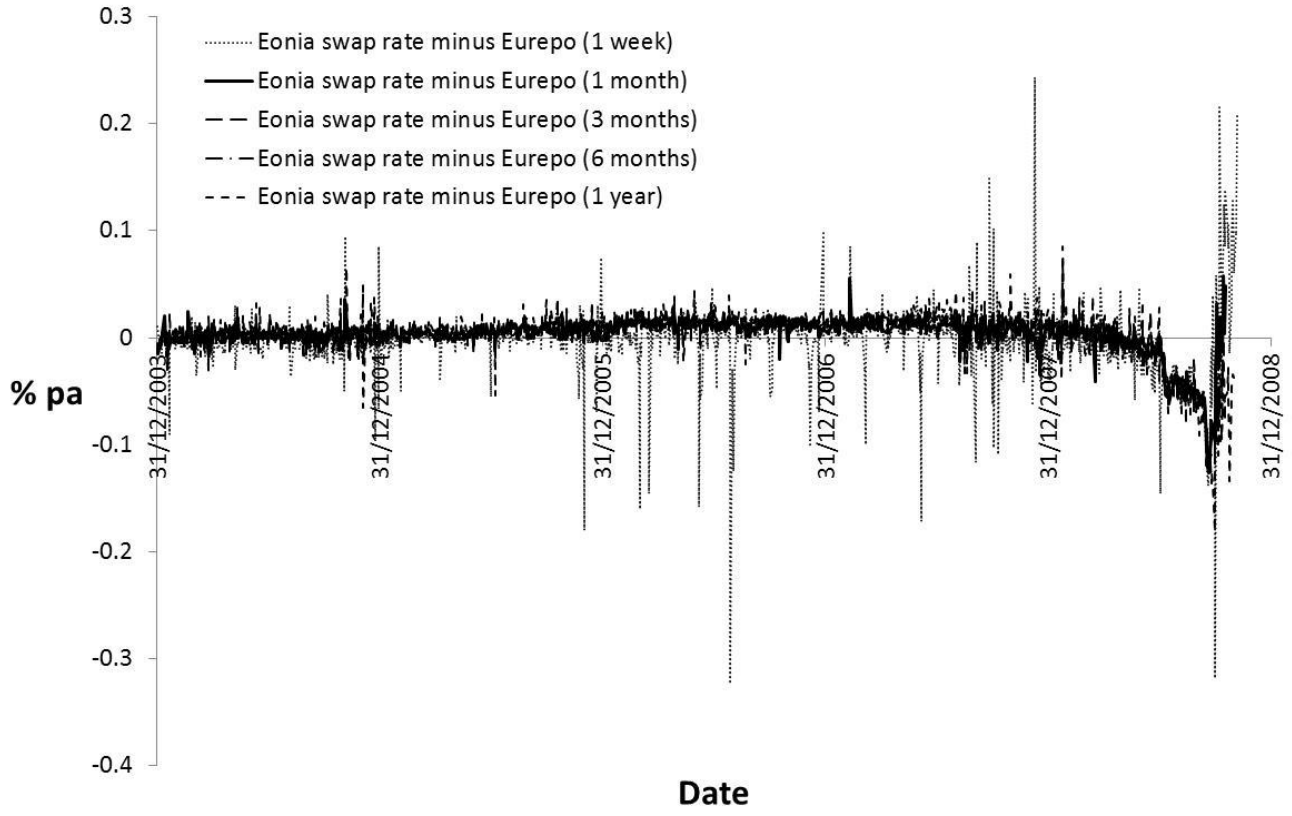


Source: Kemp (2009) and Bloomberg

Eonia versus Eurepo

- Divergence between OIS and repo rates generally much smaller than between either and unsecured (EURIBOR) swap rates

Term structure of Eonia versus Eurepo

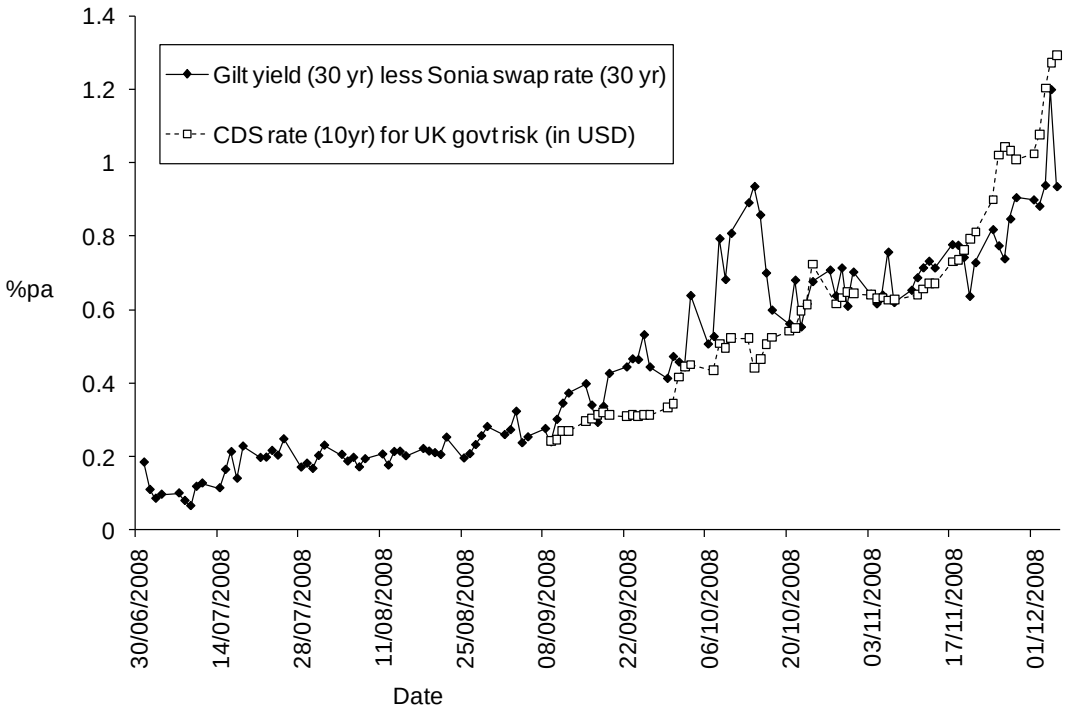


Source: Kemp (2009) and Bloomberg

Risk of sovereign default

- Spread at long end between gilt yields and OIS swap rates rose rapidly during late 2008
  - And seemed strongly linked to rise in market implied risk of sovereign default
- For UK as well as some other western nations

Comparison between UK Government Bond (Gilt) spread over GBP OIS swap rate (Sonia) and CDS rate on UK sovereign risk (to 5 December 2008)



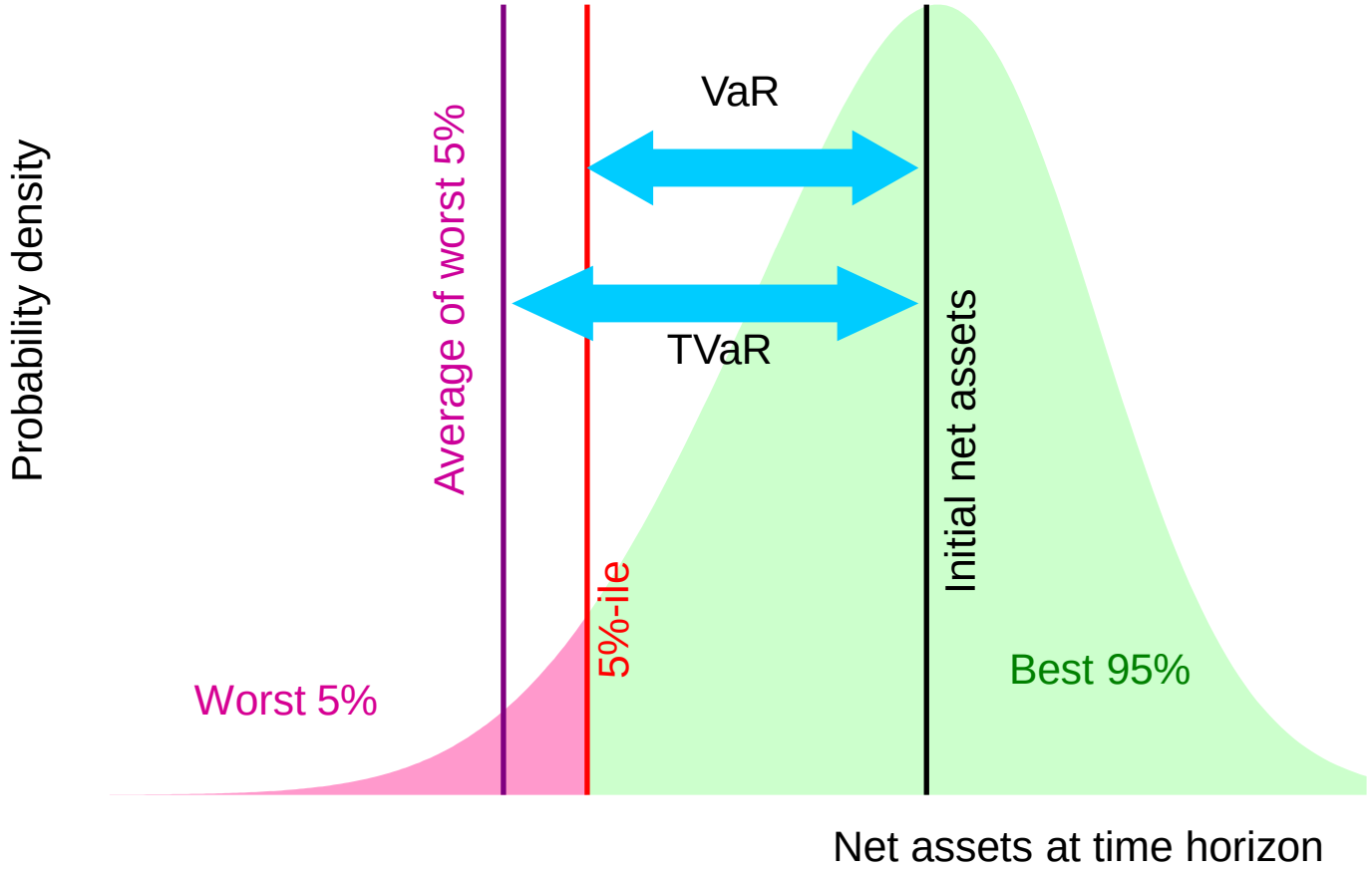
Source: Kemp (2009) and Bloomberg

Observations

- Liquidity risk now better appreciated in the light of the 2007-09 credit crisis
- Very important for banks and other firms carrying out ‘maturity transformation’
- But also very important for other types of entity more traditionally advised by actuaries, and hence potentially for actuaries, as these entities may
  - Hold assets that express liquidity risks
  - Have illiquid liabilities that they need to value or reserve against
  - Offer products that effectively involve liquidity provision to others

The VaR versus TVaR debate and its implications for determining illiquidity premiums

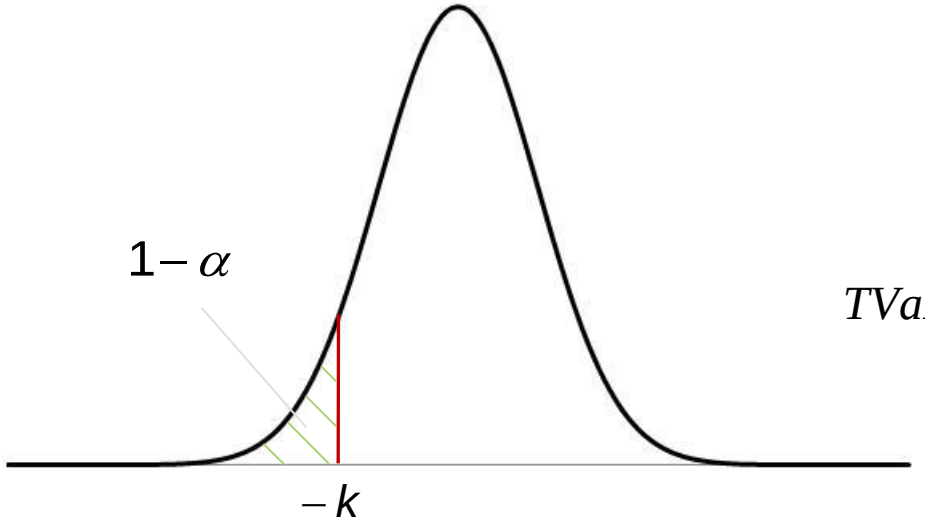
VaR and Tail VaR (TVaR)



- Insurers commonly use 0.5% VaR with 1-year horizon (Solvency II)

Mathematical definitions of VaR and TVaR

Probability distribution, density p(x), of outcomes (suitably centred)



$$VaR(\alpha) = k \quad where \quad \int_{-\infty}^{-k} p(x)dx = 1-\alpha$$

$$TVaR(\alpha) = -\frac{1}{1-\alpha}\int_{-\infty}^{-k} xp(x)dx \quad where \quad k = VaR(\alpha)$$

- Note difference between $p(x)$ and $x.p(x)$ in integrals

Arguments in favour of TVaR usually based on ‘coherence’

- Involve relatively mathematical concepts
- E.g. Suppose VaR is at 99% confidence level, suppose firm A has *one* exposure to a 1 in 500 risk of loss of 100m, firm B has *ten* (independent) exposures to 1 in 500 risks of loss of 10m
- VaR for A (=0) less than VaR for B, even though B better diversified.
- TVaR behaves more ‘sensibly’

What are the underlying mindsets?

- Suppose we have two ‘pay-offs’ (business opportunities, financial outcomes, ...), C and D
  - With C, receive *M* if event *X* occurs (*X* has probability *p*, $p > 0$)
  - With D, receive *2M* if event *X* occurs
- Which do we prefer?
  - D (if $M > 0$), C (if $M < 0$)
- To value a risky bond or claim we include a term like:

Probability of default (‘PD’) x Loss Given Default (‘LGD’)

Which takes into account loss in the event of default?

- VaR: focuses on PD element alone
- TVaR: *also* takes into account LGD
- Markets (and some parts of existing regulatory frameworks) recognise the need to take into account LGD as well as PD when valuing and assessing the riskiness of a credit sensitive instrument
- Why don't we therefore apply concept to whole portfolio?

Different stakeholder perspectives (1)

- Shareholders (in a limited liability company) benefit from the 'solvency put option'
  - They largely *don't* care about size of loss *in the event of default* (i.e. LGD)
  - Because they have already lost all that they are going to suffer
- Policyholders *do* care about LGD
  - At least they do up to the detachment point at which any further LGD gets passed on to other stakeholders
  - e.g. Government or industry-wide protection schemes (who thus in turn have an interest in LGD)

Different stakeholder perspectives (2)

Risk Measure	Shareholder	Policyholder	Regulator (and equivalent stakeholders)
VaR	✓ (ignores LGD)		
Tail VaR		✓ (includes LGD)	✓ (includes LGD)

- Capital adequacy is (should be?) policyholder/regulator focused
- So VaR mindset is arguably wrong for it
  - Despite being the approach mandated by Solvency II
- Use of TVaR would address lack of focus on LGD within VaR
  - Some suggestion that Basel Committee agrees

Treatment of illiquidity (1)

- Two firms, A and B, with identical liabilities:
  - Larger line (bulk of firms' overall risk), **L**: Not exposed to liquidity risk (e.g. might be very liquid unit-linked assets and liabilities). **A** and **B** invest assets backing these liabilities in an identical way
  - Smaller line, **S**: Highly illiquid liabilities (e.g. annuity book):
  - **A** invests in **illiquid** assets for **S**, arguing that these best match the illiquid nature of the liabilities. **B** invests in **liquid** assets with same cash flows
- Which *should* the policyholder prefer?
  - In other words, how much credit *should* we allow for the illiquidity premium potentially available on illiquid assets in e.g. a solvency computation targeting the policyholders' perspective?

Treatment of illiquidity (2)

- Policyholder *should* (generally) prefer B to A
  - PD largely driven by non-liquidity risks, so roughly the same for both firms
  - LGD driven by what happens in the event of default
- Default will most probably be associated with forced liquidation of assets (and forced transfer of liabilities)
  - Which asset type is likely to realise more in a fire sale – a liquid one or an illiquid one?
- Possibly mitigating effects over longer time horizons

Treatment of illiquidity (3)

- Logic of matching illiquid liabilities with illiquid assets assumes that firm is a hold-to-maturity investor
- But LGD relates to situations where the firm has typically lost its ability to hold-to-maturity
- VaR based approaches will thus miss this subtlety
- TVaR based approaches (if properly implemented) shouldn't

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