BAIL-IN WORKING GROUP
OF THE AMIC

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Sent by email

20 December 2016

Dear Thomas

I am writing as a follow-up to our meeting on 7 November in Frankfurt. We were pleased to be able to articulate our views at that meeting, and note that there have been some important developments since then.

At our meeting, we agreed upon two areas for some further clarification: first, a better understanding of the specific parameters that bank credit analysts would be monitoring in order to assess and price bank credit risk, and second, thoughts around governance and the rights of noteholders in the light of the new bail-in regime.

The Bail-in Working Group ('BIWG'), a buy-side group which is a committee of, and reports into, the Asset Management and Investors Council (AMIC)[1] of ICMA, is keen to engage in constructive debate to explore ways of better identifying sources of risk and uncertainty which might increase market instability or render parts of the bank market un-investable[2]. While strong, well-capitalised banks are likely to have good and largely reliable access to markets, smaller institutions may find themselves in more difficulty.

[1] http://www.icmagroup.org/About-ICMA/icma-councils-and-committees/Asset-Management-and-Investors-Council-AMIC-/

[2] The BIWG understands that previously regular buyers of unsecured bank paper are withdrawing from the market and selling their existing holdings, due to not being able to quantify to management the risks involved in holding such paper in the new regulatory environment.

We would highlight that the basis of this group's observations is set by reference to 'normalised' risk markets and rational pricing. Current conditions – among them, recent concerns around Italy, as well as central bank purchase programmes - have led to a lack of overall consensus over the pricing of risk, with supply and demand considerations and overall levels of market support exerting a heavy influence on observed primary market levels.

As a fundamental starting point, the BIWG has previously highlighted concerns over unprecedented levels of bad loans exceeding tangible common equity. While the ECB has been effective in supplying lines to banks, and considerable progress has been made to improve the transparency and consistency of bad loan recognition, much remains to be done to ensure a full and effective 'clean-up' of this situation and allow banks access to the capital markets.

Assessing bank credit risk under current regulations

Two critical elements for assessing bank credit risk under current regulations are (1) determining the likelihood of a bail-in ('probability of default' or better termed 'probability of bail-in') and (2) the size of a potential loss (loss given default, or 'LGD', which is the term for the quantum of the write-down suffered by an investor). We refer you to the annex to this letter setting out a detailed description of the quantitative work by members of the BIWG in this area[3].

1) Probability of Bail-in

In order to assess the probability of bail-in, an analyst will need to evaluate the 'point of non-viability' (PoNV). Regulators have provided relatively little guidance over defining the PoNV, and a lack of clarity over how it might be measured and applied leaves the analyst with a wide margin of 'guestimation'. The fact that a precautionary recapitalisation under Article 32(4)(d) of the BRRD is considered a possible outcome should Monti dei Paschi di Siena fail to raise equity from private sources illustrates how nebulous the concept of PoNV is.[4]

Part of the difficulty faced by investors is gauging the business model of a bank, its profitability and quality of earnings against a challenging backdrop of zero rates and regulatory pressure.

2) Loss Given Default

The 'LGD' presents a series of other imponderables. The market is likely to use an analysis of the capital stack to evaluate exposure, which may offer some assistance for measuring relative value between large, well-capitalised banks. However, this approach may not offer guidance for smaller, weaker institutions that nevertheless have important roles to play in the real economy.

Thorough balance-sheet analysis of banks is still complicated. The moves by the EBA and others to standardise key definitions, especially around NPLs etc., is vital, and welcomed. Nevertheless, there are several areas where analysis of a bank's risks remains challenging. The actual quantum of write-down is determined by regulatory action and calibration. But without an ability to readily evaluate the basis of a write-down, and no established rules giving details of how this might be handled, there is a danger that the theory of 'no creditor worse off' may in practice not be workable. Investors

3 Prepared by the European Bank for Reconstruction and Development.

4 A precautionary recapitalisation is not permitted for banks that are insolvent or considered to be likely to fail in the near future under the PoNV test.

expect write-downs to be calculated in a fair, open fashion, fully respecting the hierarchy of creditors, and any suspicion of political or over-zealous application of regulatory powers is likely to undermine confidence in the system.

While the current abundance of demand for paper and hunger for spread is a key driver for new issues, the BIWG urges some caution when judging market access and spreads in more normalised credit markets in the coming years, and believes that a more technical evaluation of risk will play a greater part in the process of relative value and price discovery in future.

Governance and the rights of noteholders

The BIWG notes that as the liability structure of a bank has been completely re-ordered following the crisis, and as regulatory oversight has been transferred, there remains uncertainty around how the rights and obligations of all stakeholders are re-set to reflect this new state of affairs.

Furthermore, as regulatory measures continue to have a cumulative and far-reaching effect on how banks are governed, managed and function, the BIWG believes that there should be a broader debate around the purposes and functions of banks in tomorrow's real economy.

Nevertheless, as a starting point, the BIWG has set out below a few specific measures for AT1 issues. The new form of bail-inable senior debt (so-called 'Non-preferred senior') might also attract enhanced rights under certain circumstances.

1. Dividends (and discretionary bonuses) should only be paid if CoCo coupon is paid and is above MDA (mirroring the current position in Switzerland).
2. However, dividends may be available for subsequent distribution, and discretionary bonuses (at pre-resolution levels) could be reinstated upon a bank's recovery, while no such solution exists for AT1 holders who have missed and forgone a coupon payment. A potential solution to this is to make AT1 coupons cumulative so long as a bank avoids PoNV, stays out of resolution and does not take any form of state-aid[5].
3. In the case of a shortage of common equity (defined as below SREP minimum), CoCo holders should have a right to vote on dividend proposals.
4. In the case of material CET 1 buffer above regulatory requirements, a vote is not necessary.
5. Senior management could be incentivized in variable compensation with new AT1 instruments with trigger above highest outstanding AT1 instrument.
6. Consider whether a notional failure under the adverse scenario of a stress test should trigger holder rights, until cured.

The 'safety' of other parts of the capital stack will be dependent on the capital buffers being maintained at certain minimum levels. As all forms of subordinated and bail-inable debt are expected to be exposed to losses, noteholders should be protected against capricious actions of shareholders or management as capital buffers erode.

[5] Or maybe some form of Alternative Coupon Satisfaction Mechanism.

Seminar on impact of regulation/credit evaluation

Finally, as was suggested at our meeting, the BIWG is keen to host a seminar in early 2017 to discuss many of the points articulated in this letter. Involving the buy-side, regulators, representatives from the sell-side and issuers, the seminar will serve to further the debate and clarify the issues in order to reach a consensus view.

We look forward to being able to discuss these ideas with you in due course.

Yours sincerely

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Chairman of the Bail-in Working Group

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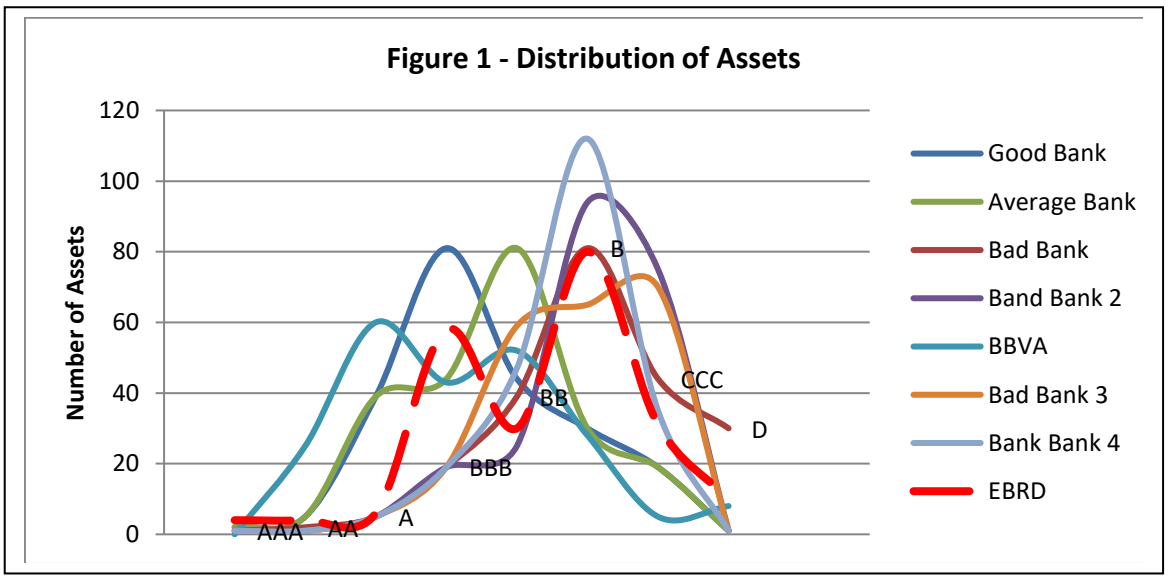
ANNEX

Analysing BAIL-IN March 2014

The single biggest problem in analysing the risk of a bail-in of a financial institution is determining the point of Non-viability. No one is able to define when this occurs or how it will be triggered making it impossible to model. The analysis below assumes that the point of non-viability is known, and the only factors driving riskiness of senior unsecured bonds is the balance sheet and capital adequacy.

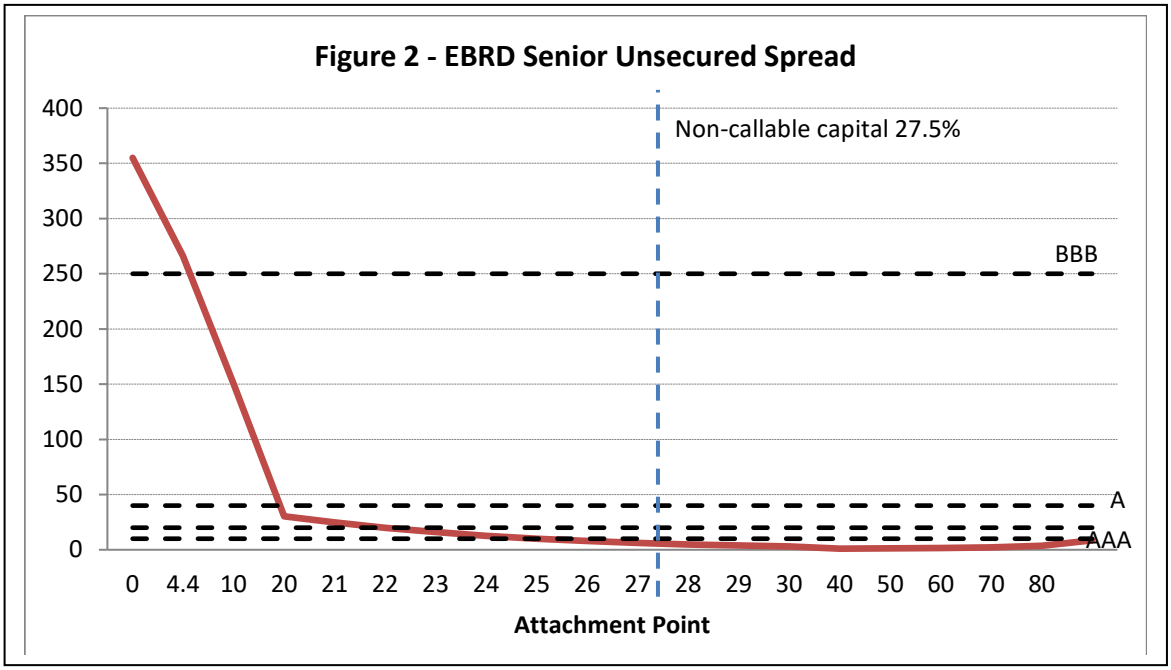
However using both the liability structure of the banks and a CDO based model (CDST) I have modelled where senior unsecured spreads should be trading. I attempted to do this by:

- Modelling the asset base of the bank (in this case I have used the balance sheet of EBRD but can be any bank with sufficient reporting of the asset base). This forms a good example balance sheet due to the binary nature of the 'good' and 'bad' assets (*figure 1)*
- It is extremely difficult to model the balance sheet of an individual bank, but we can approximate what we think a bank's balance sheet might look like.
- Analysing the risk of currency mismatch and maturity transformation is extremely difficult/impossible. Both can lead to a liquidity squeeze on the bank and suddenly impact capital ratios.
- Once the balance sheet is modelled it is possible to create a risk-neutral spread distribution which is input into a CDO model (CDST).
- An attachment and detachment point is created representing the position of the liability (i.e senior unsecured) in the capital structure of the bank, as well as the tranche size.
- The result of the simulation is a spread that represents the risk neutral spread. (*Figure 2 represents the risk neutral spread of an EBRD senior unsecured bond)*



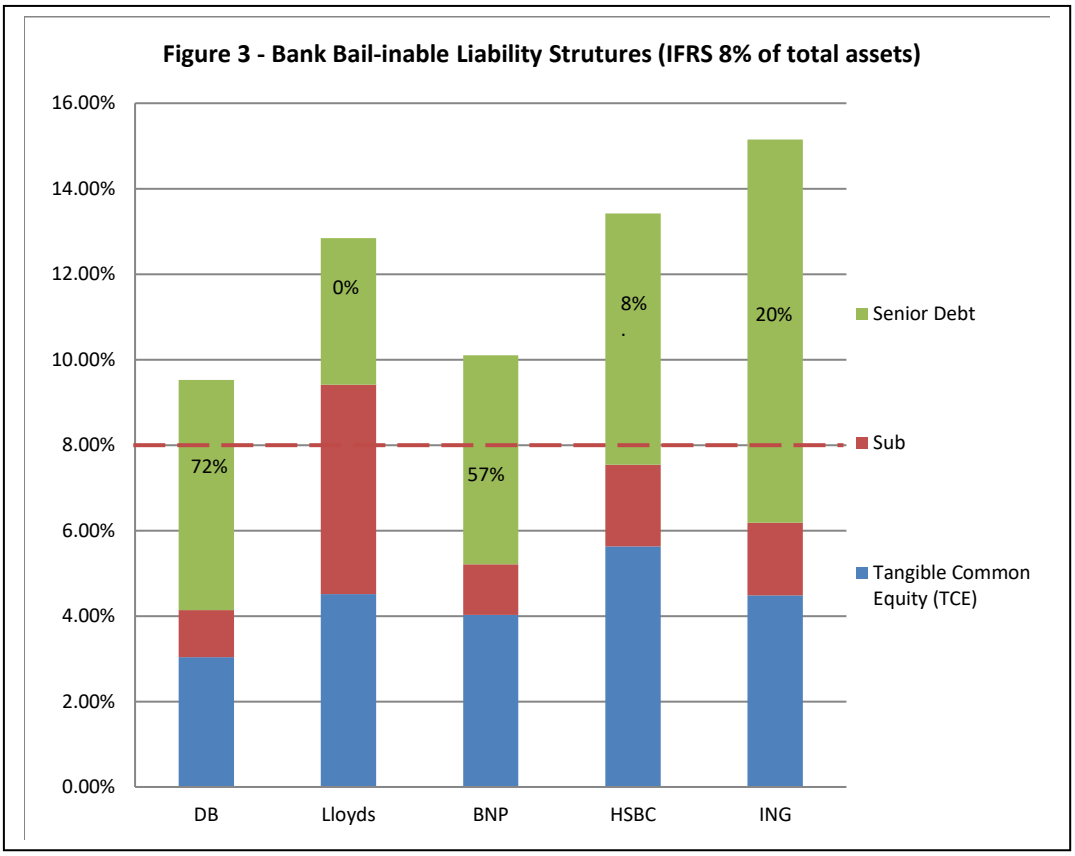
Results using EBRD balance sheet:

- In this simulation the liability structure can be broken down into:
    - Equity 14.01bn (27.5%) *attachment point*
    - Senior Unsecured 37.4bn (72.5%)
- The attachment point is formed at the point where senior unsecured starts in the liability structure, and the detachment point is where it ends (in this case at 100%).
- The results show that the risk neutral spread at this point is +6bps, which is within the AAA ratings bucket. Also when compared to 5yr EBRD bond trading at ASW-1bps/+4bps in EUR/USD (March 2014).
- Below an attachment point of 20%, the senior spread starts to fall off a cliff. Further results show that:
    - The steepness of this curve is determined by the thickness of the senior tranche.
    - The point at which the spread falls off a cliff is determined by the quality of the assets on the balance sheet.
    - The Risk neutral spread is determined by the attachment point.

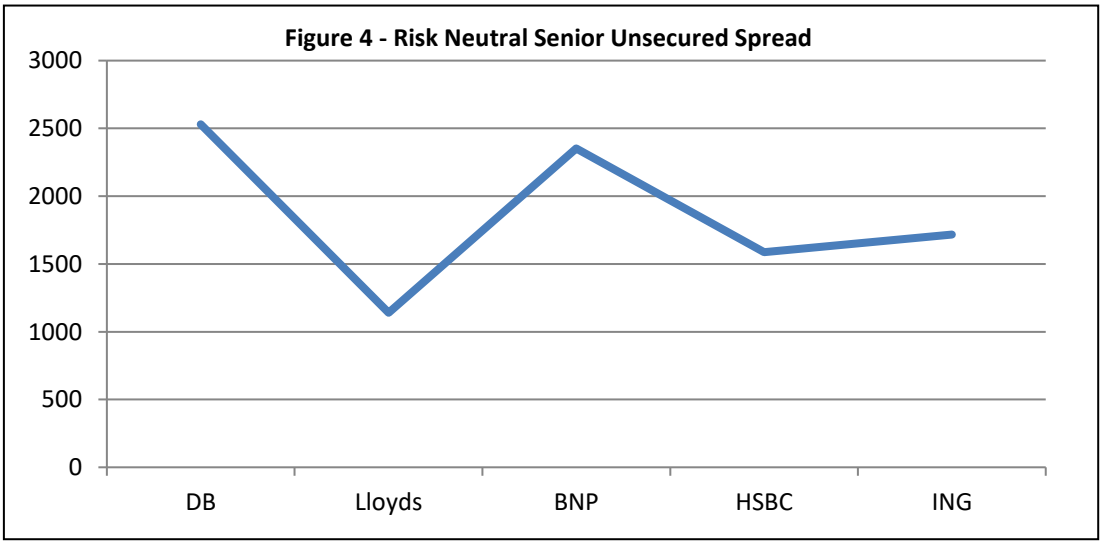


Results using liability structure of European Banks

- The Liability structure of 5 different European Banks was taken and modelled using the same asset base for each (average bank scenario). The liability structure of these banks are shown in Figure 3.
- The percentage of senior unsecured that is 'wiped out' in a bail in scenario is also shown in figure 3.

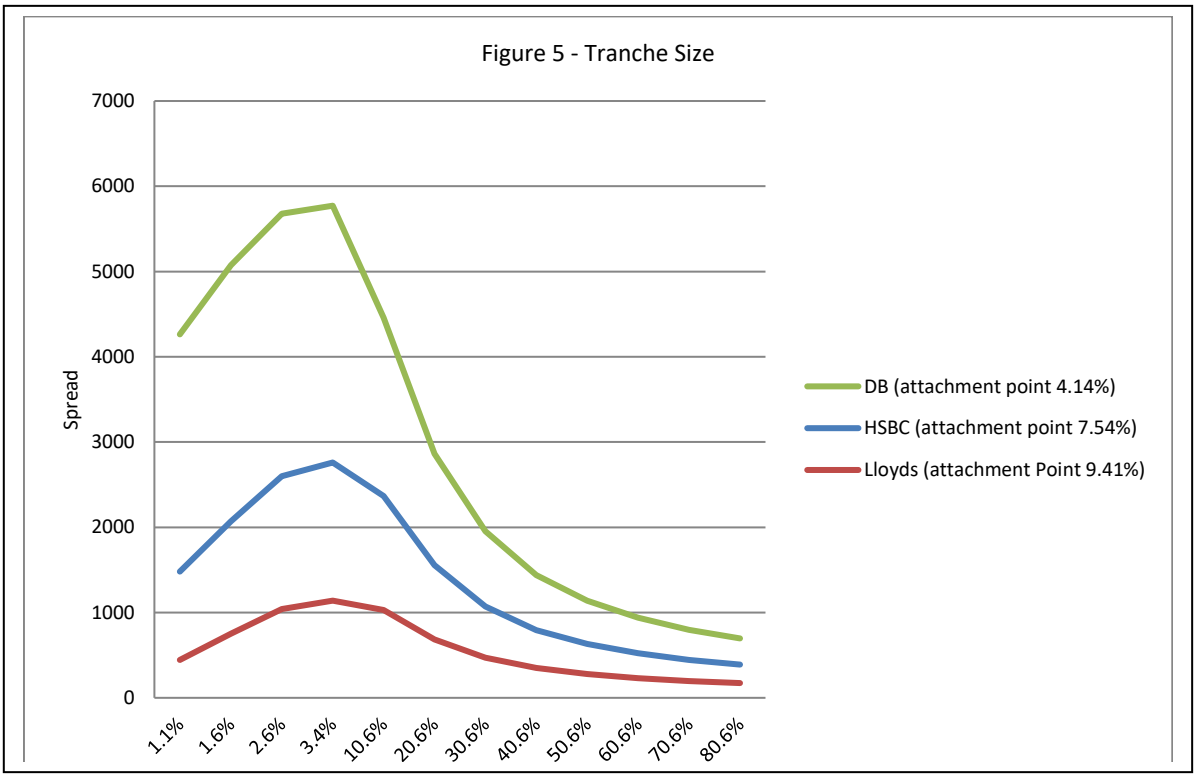


- Using the liability structures for each of the European banks mentioned it is possible to obtain a 5 year risk neutral spread for their senior unsecured spread. *Figure 4 shows this*



- What the risk neutral spread shows is that all of the banks senior unsecured falls in the B to CCC rating bucket.

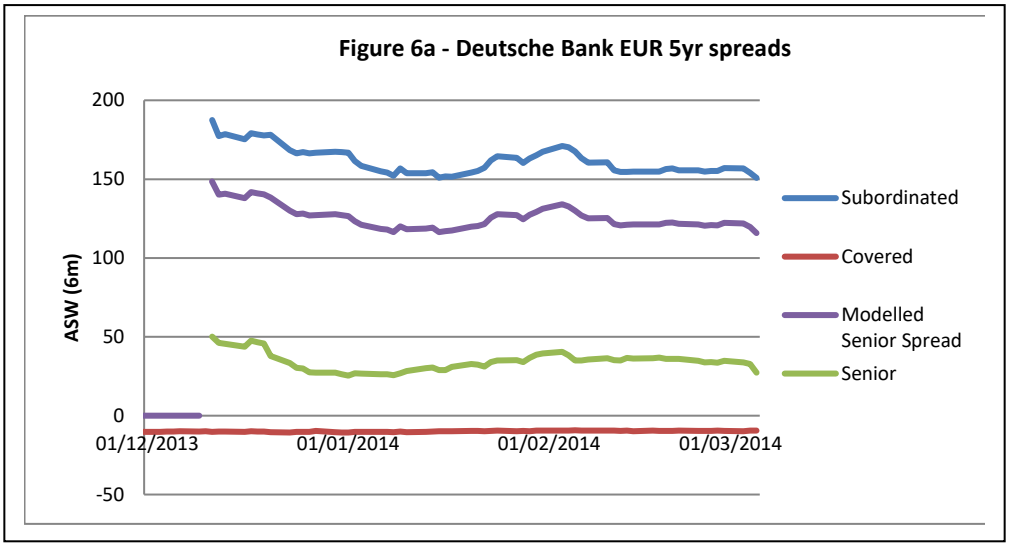
- Rather than focus too much on the absolute spread level, what the model does do is distinguish between the different liability structures of the banks. What is clear is that the most sensitive parameter is the attachment point. What this then highlights is how under capitalised the banks are.
- Also the senior tranche size shows how much reliance there is on senior debt in a bail-in situation. The model shows that a larger tranche size is good for the risk neutral spread above a certain point.
- However as *figure 5* shows, below a certain level the risk neutral spread decreases with tranche size, rather then increase exponentially. This starts to make sense when you think about how having too little senior unsecured makes the ability to bail-in more difficult.

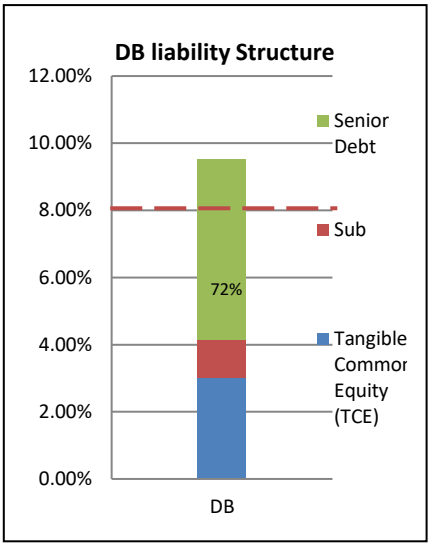


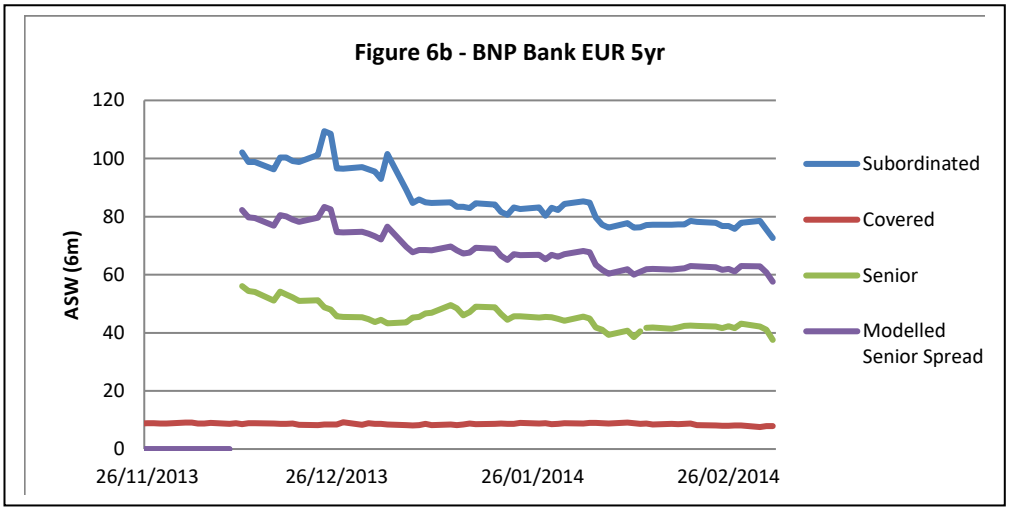
Calibration of model

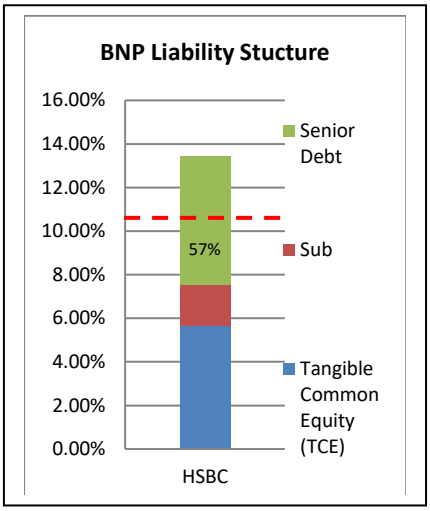
- Whilst the model produces risk neutral spreads way in excess of market observable spreads, what they allow is for a ratio to be devised that adjusts the market observable spread.
- To do this I assume that the bank subordinated spread acts as the cap to senior spread and covered bond spreads act as a floor.
- The calibration is from 1 to 0:
    - 1 being senior unsecured trades on top of subordinated debt
    - 0 the senior unsecured trades on top of covered spreads
- The obvious assumption here is that subordinated debt and covered bond debt is correctly priced.[*NOTE - it is clear that subordinated debt is trading too tight for the risk one is taking owning it*]
- The ratio is used to calculate a 'Modelled Senior Spread'. If the ratio is closer to 1 then the senior spread is adjusted with a value that tracks the subordinated more closely. Conversely

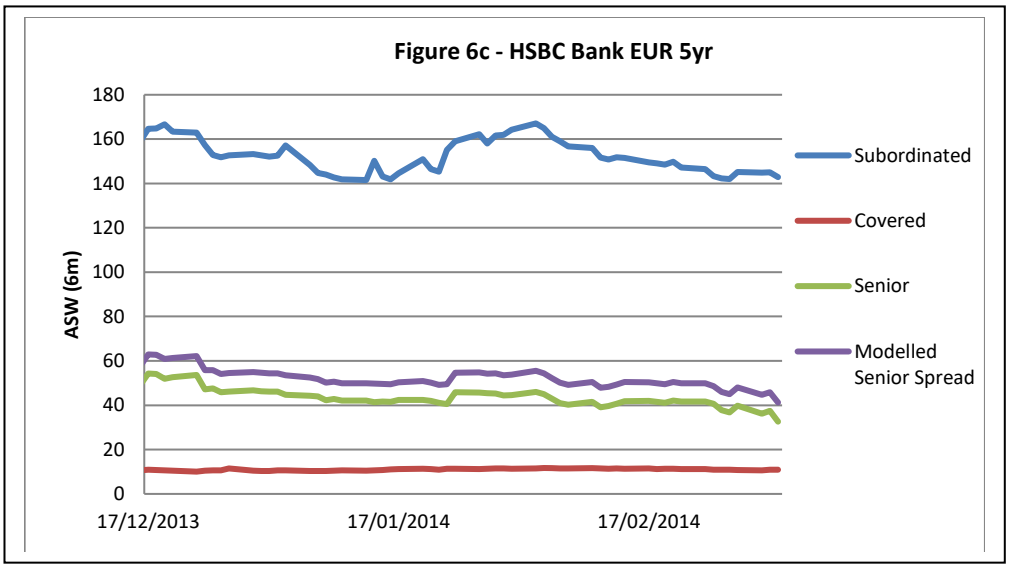
if the ratio is closer to 0, the senior spread is adjusted with a tracking to the covered bond spread. The results for DB, BNP and HSBC are shown in figure 6a, 6b and 6c

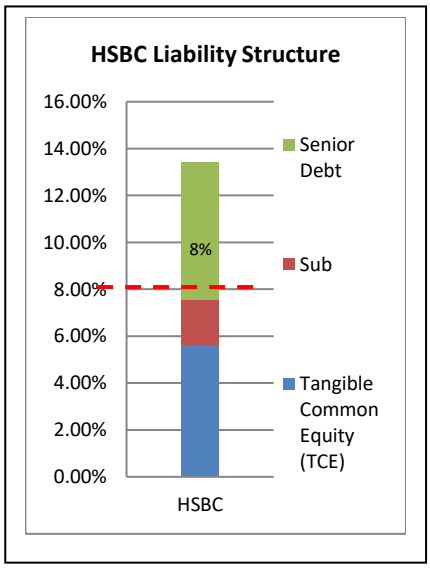












- The calibration of senior spread is far from perfect, but it begins to set the parameters of what is a cheap senior unsecured asset and what is rich. It also highlights how rich subordinated debt has become and is possibly the most mispriced asset class.
- **Modelling the point of non-viability of a bank still seems impossible without further regulatory direction, and even then there are the complexities of local regulators overruling decisions.**
- The technical of the market continue to drive spread tightening and this dislocation with market fundamentals will remain for the near future. I see no appetite for traders or portfolio managers to adjust their focus whilst there continues to be a chase for yield.
- Hypo Alpe–Adria (HAA) continues to form a good case study and basis for what may happen when a bank becomes non-viable. Market consensus is still that a band bank will be set up rather than a direct bail-in of senior unsecured.

Appendix

Ratings table – rating to risk neutral spread

Ratings Table	
AAA	10
AA	20
A	40
BBB	250
BB	600
B	1,000
CCC	5,000
D	10,000