

Measuring Credit Losses: IFRS9

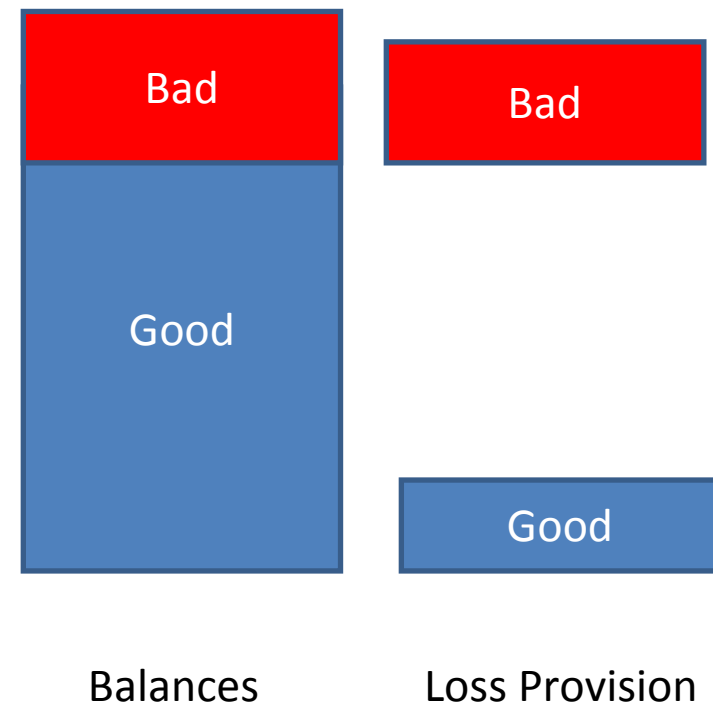
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Measuring Credit Losses: Now

- In Europe application of International Accounting Standards Board (IASB), in US Financial Accounting Standards Board (FASB) rules.
- IAS39 uses concept of providing for **incurred** losses through a credit loss provision with a charge to the P&L (Impairment Charge).
- Two components:
 - Recognised losses: Provide Lifetime Economic Loss (LEL)
 - Incurred but not recognised (IBNR): Probability of impairment event already occurred but not recognised x LEL
- Impairment models are often not statistical (and therefore maybe unrelated to credit risk scorecards used to manage risk)
- Joint board propose that these regulations are updated and harmonised under IFRS9 by January 2015 (last date for compliance).
 - Latest proposed joint approach publish in Jan 2011, open to comment until April 2011, further re-deliberations are ongoing. Further working papers in August 2011.

IFRS9: Proposed Calculation


- Divide portfolio of loans into 2 segments;
 - Good book; management objective to ensure customer maintains full principle and interest payments over the lifetime of the loan
 - Bad book; management objective to recover as much debt as possible immediately
- Good book provision
 - $\text{Max}(\text{Time proportional amount (TPA)} \times \text{LEL}, 12 \text{ Months losses})$
- Bad book provision
 - LEL



A Simplified Example

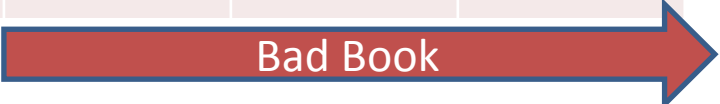
Incurred Loss Model

Date	Jan10	Feb10	Mar10	Apr10	May10	Jun10	
Balance	100	110	130	130	130	0	
Months Arrears	0	0	1	2	3	W/o	
Provision	10	9	30	70	80	0	
Impairment Charge	10	-1	21	40	10	50	130



Possible IFRS9 Model

Date	Jan10	Feb10	Mar10	Apr10	May10	Jun10	
Balance	100	110	130	130	130	0	
Months Arrears	0	0	1	2	3	W/o	
Provision	4	15	40	70	80	0	
Impairment Charge	4	11	25	30	10	50	130

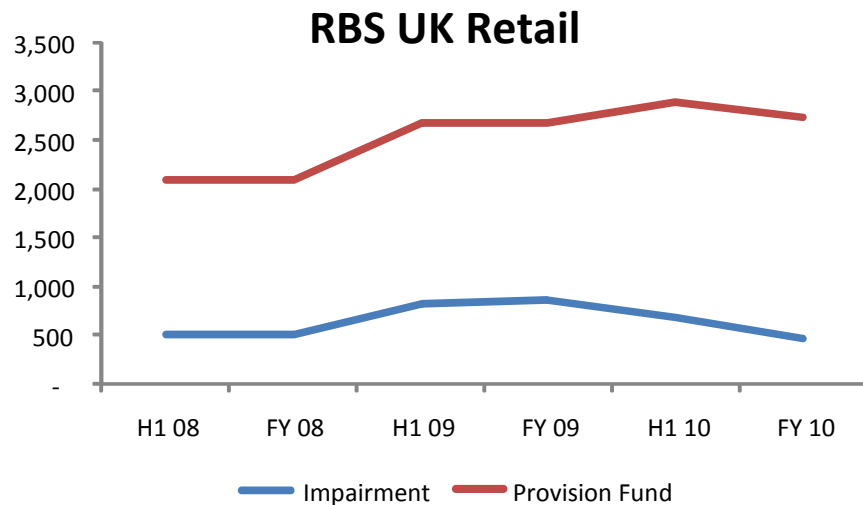
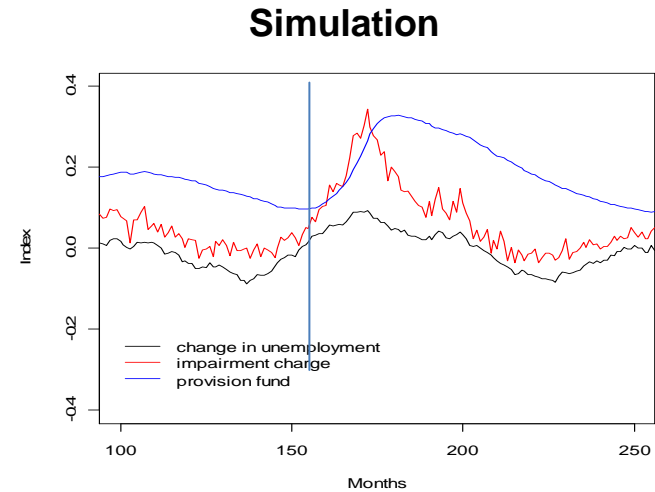
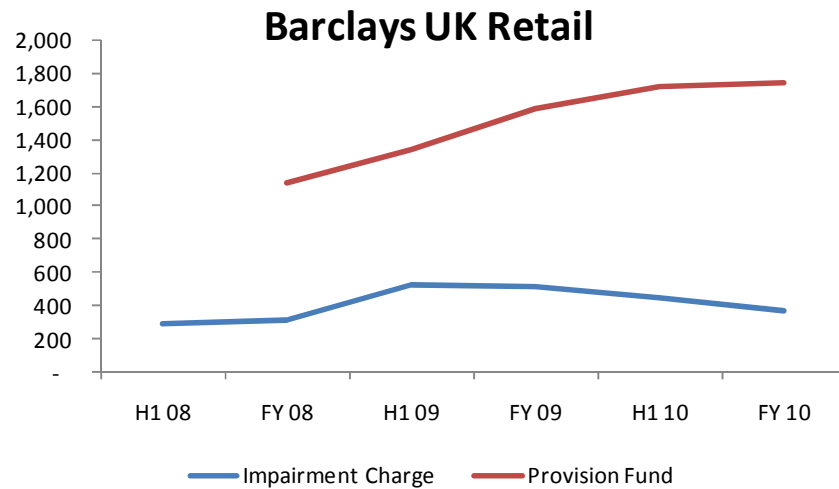


Motivation for IFRS9

- Joint deliberations of IASB and FASB with diverse objectives but recognised advantages of convergence:
 - IASB: Recognise losses over the life of the asset to reflect cost of losses in line with revenue → Time proportional allowance
 - FASB: Early and full recognition of losses → Lifetime Expected Losses using forward looking estimates
- Both these developments are likely to drive impairment calculation from an accounting calculation towards credit risk models

Objective: investigate the potential dynamics of IFRS9 provision model and what properties you want from the credit models that drive any provision calculations.

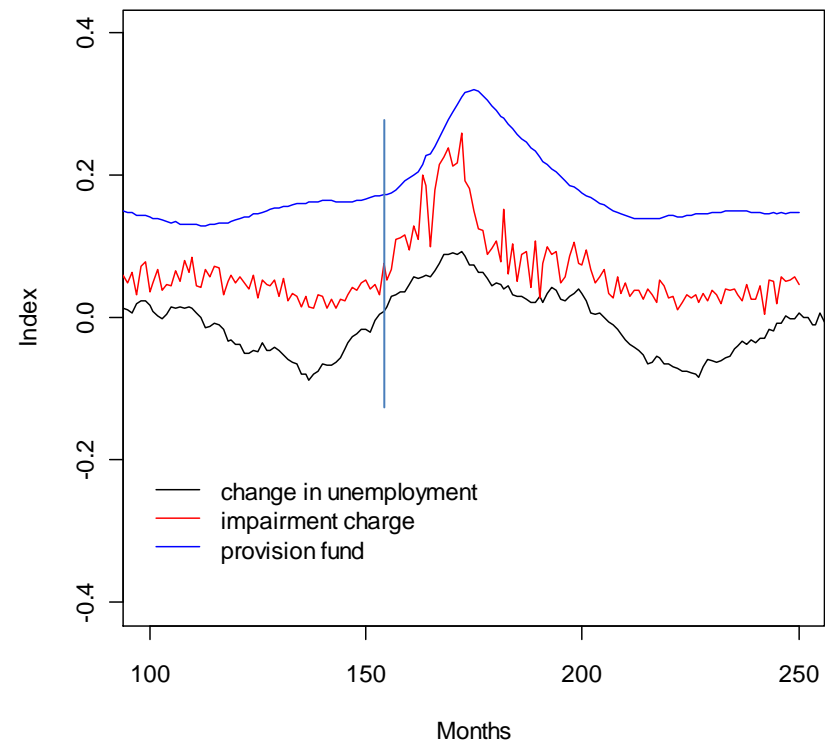
Incurring Loss Model



- An incurred loss model typically has minimum provision at the start of a recession
- Provision typically peaks once recovery is well underway
- Young portfolios tend to have artificially low losses which rise rapidly as portfolio matures/.

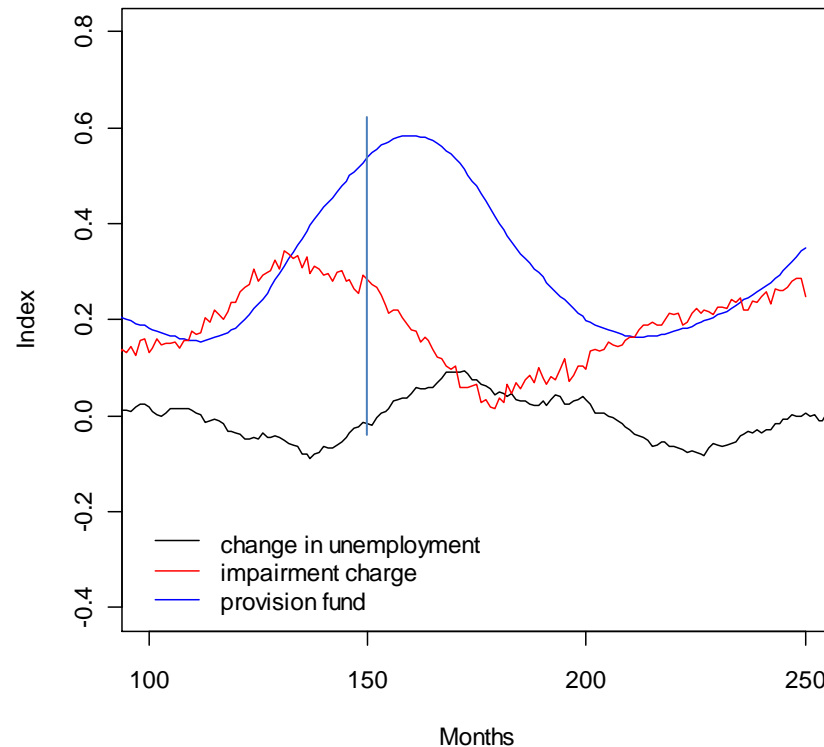
(Perfect) Forward Looking Incurred Loss

- What happens if we extend the current impairment model but to include forward looking LEL (include macro economic effects in models and calibrations)?
- Provision fund is less volatile
- Impairment is less volatile
- But, provision is still low just before a recession



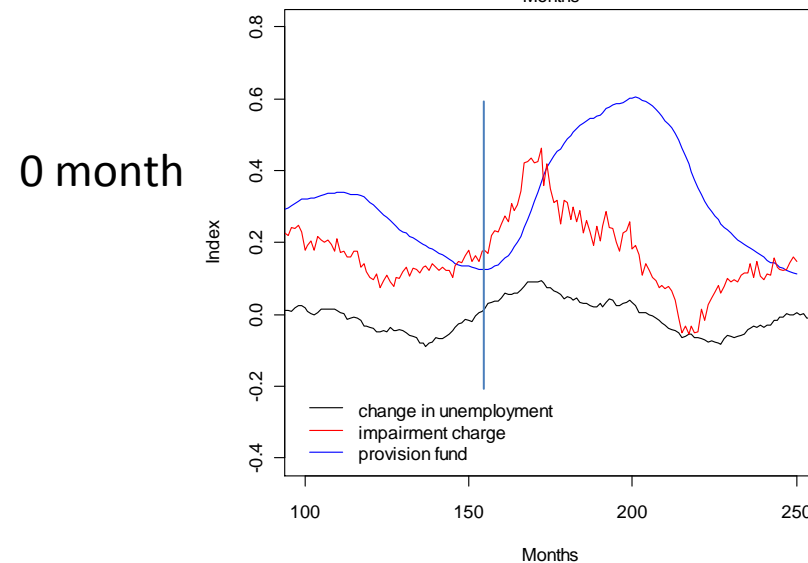
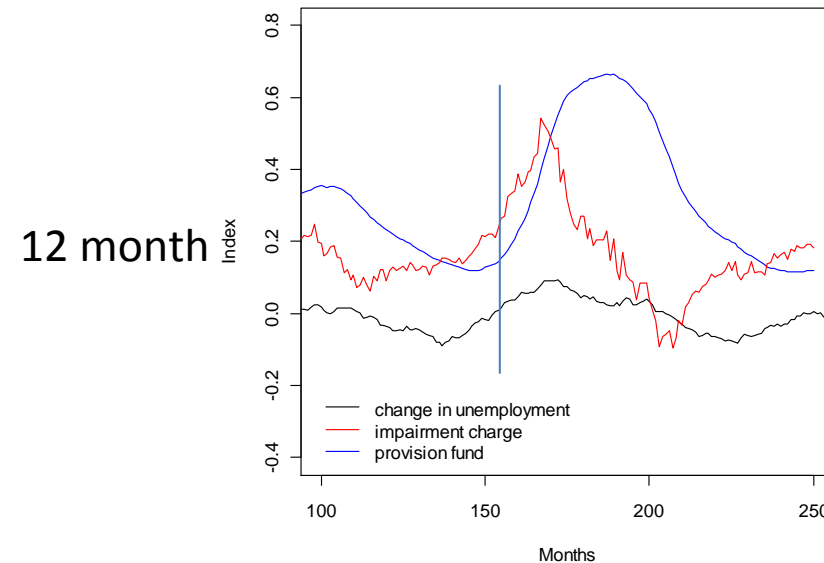
(Perfect) Full Lifetime Expected Loss

- What if provide full LEL for every loan.
- Provision fund is larger but more volatile
- Provision fund starts to rise well before the recession
- Impairment actually falls during a recession (looking through to improved conditions later)



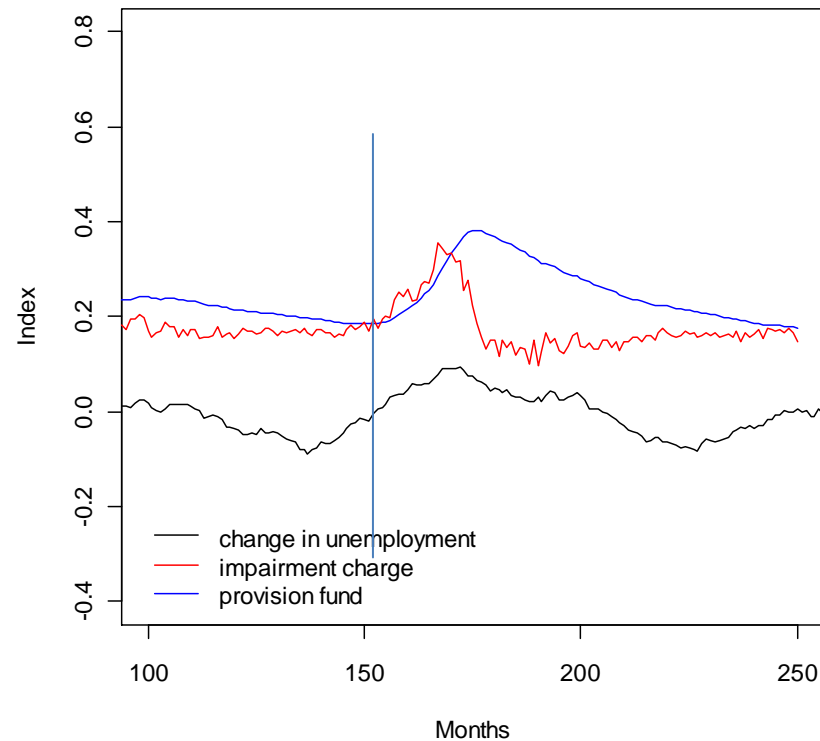
12 month Prediction Horizon; Full Lifetime Expected Loss

- But we don't have a perfect view of the future. What about if we believe short term forecast provision rates and blend with recent history?
- Unfortunately 12m is short relative to the lifetime of the loan (in this case 48m) so provision fund is still low at the start of the recession
- Leads to increased volatility in the impairment charge



Static Estimates: Full Lifetime Expected Loss

- But we don't have a perfect view of the future. What if we just use long run average provision rates?
- Provision is higher (than incurred loss)
- Better provided at the start of the recession
- Impairment charge narrowly peaked during early recession (early recognition of losses)



Summary of Findings 1

- Moving from incurred to LEL method increases provisions
- Using “perfect” forward looking provision rates ensures fully provided at all times and makes impairment charge counter-cyclical
- Introducing a partial forward looking component to provision rate can increase volatility where the time horizon is short relative to the life of the loan (and the recession)

Conclusion 1: Credit Risk models used to drive provision rates could include forward looking macro-economic data but it is possible that this makes impairment volatility worse unless a long prediction horizon is possible. Careful simulation models are recommended prior to implementation

Time Proportional Allowance

$$\text{Provision} = \frac{\textit{AverageAge}}{\textit{AverageLife}} \times \textit{LifetimeExpectedLoss}$$

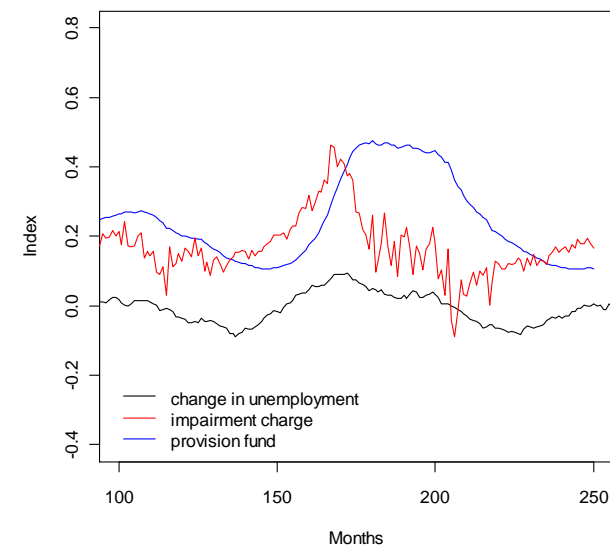
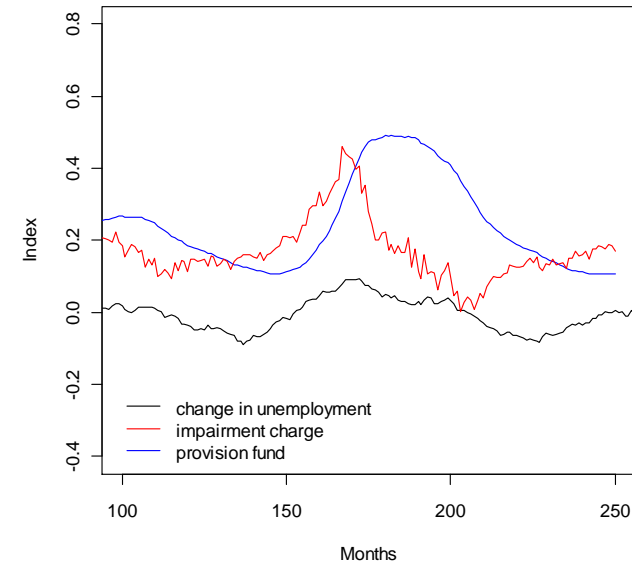
- Estimate of TPA is non-linear function so:

$$\langle \text{Provision} \rangle \neq \frac{\langle \textit{Weighted_AvAge} \rangle}{\langle \textit{Weighted_AvLife} \rangle} \times \langle \textit{LifetimeExpectedLoss} \rangle$$

- Objective: Provision fund grows incrementally over life of account so continuously “paying the credit cost”.
- Problem: Specification depends on how you define your portfolios what Provision you get overall. Possible to have identical assets with different provision allowance due to different segmentation.

Time Proportional Allowance

- Base case: Lifetime constant through economic cycle.
- Assumption: Lifetime gets ~50% longer in recession. 12 month forecast horizon.
- Provides weak countercyclical effect



Good Book Floor

- IFRS9 suggests good book provision floor equal to losses expected within foreseeable future (minimum 12 months).
- Assuming approximately stable portfolios then average life / total life is approximately 50%
- Implies floor is likely to bite where probability of moving to bad book in foreseeable future (12 months) $> 50\% \times \text{Good Book LEL} / \text{Bad Book LEL}$
- If Good book LEL $\sim 2\%$ or less of Bad Book LEL then floor applies in many retail portfolios. (E.g. Annual default rate $> 1\%$)

Latest deliberations

- One potential option defines 3 books (good, bad and default).
 - The latter two would be provided for at LEL.
 - Implication that you move to the bad category based on generic (macro-economic) evidence of impairment.
 - Move to default based on similar lines to current recognition.
- For the good book suggestion to remove reliance on TPA and perhaps move to something more similar to Basel EL for provisioning.

Desirable features for models used in IFRS9 estimation

- Requirement to have as long a forward estimate as possible using all supportable evidence could imply use of statistical models incorporating macro-economic data
 - Still an area of active research with no universally accepted best practice
- Incorporation of economic effects should be causal otherwise forecast impacts won't accurately be reflected
 - This is challenging, and requires either a long time series (multiple economic cycles) or a structural (a priori) model of how macro-economic conditions drive consumer default.
- LEL models are necessarily complex and careful consideration needs to be given to model mis-specification errors (model risk) and prediction errors
- Consideration of inaccuracy in macro-economic forecasts themselves - equivalent to shortening period over which you can forecast provision rates. Need to consider momentum of forecasts (tend to miss peaks and troughs).
- Forward window needs to be long to have an impact of providing counter cyclical buffer – not clear this is possible, in which case a conservative window and use of long-term averages may provide less pro-cyclical impairment charge estimates.

Critical to consider dynamics and practicality of new provisioning rules once in place and not just focus on transition.