Interest Rate Risk for Lenders

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Why All the Fuss?
A 200bp change in short rates is equivalent to 1 StDev
The last two down legs were 2 StDev events
How will DCR handle the next up shock?
When Things Change, Movement is Large

- Cycle changes are high and FRB is looking at 300+
- The last two legs up were over 300bp
- How will NIM and provision behave in the next up shock?
The slope of the yield curve was high (1 StDev)
Reversion to mean (140bp) will flatten the curve by 20bp
With flatter curve (long down) refinance will drop yields
What About the Last Two Months?

- Longer term rates are at same level as Curve Twist lows
- Prepayments may rise and sub 4% coupons return
Is NIM Compression Permanent?

- NIM compression at WA banks was substantial
- NIM compression may not be temporary as focus moves to non-interest items, therefore “Irrational” pricing continues
What Does the Past Tell Us (Slope/Trend)

- Length of economic cycles vary, but do occur with some frequency
- Curves flatten / invert as downturns approach
- During 2001 / 2007 recovery, tightening began half way through
Should we be Concerned With Optionality?

- **Asset Prepayments**
  - As rates rise, prepayments will slow, life extends (CECL?)
  - Models may still reflect higher prepayments from Curve Twist, however recent drop may reverse the trend also

- **Rate Floors**
  - As rates rise, NIM will be constrained by embedded rate floors (stable debt service)
  - At many community banks, it will take a 200bp rise in rates to clear most embedded floors (bad for NIM, good for DCR)
Impact of Prepayments on Life of Loan

- Higher rates slow prepayments and extend life (CECL?)
- Longer term structures are most at risk of extension as rates rise
Have Loan Terms/Structure Changed?

- Fixed rate/full amortization is good for DCR, but bad for NIM
- WA banks longer-term allocation up 2.5X
- WA banks longer-term allocation 1.7X TBTF
Should I Care About Deposit Optionality?

- Beta’s
  - Pricing efficiency is good vs. historical levels
  - As rates rise, efficiency may be lost (disintermediation = greater sensitivity = less fixed rate loans)

- NMD Decay
  - As rates rise, decay will accelerate as depositors favor time deposits (as funding shortens, less fixed rate loans)

- Time Deposits
  - Existing deposits will likely shorten as depositors exercise embedded put’s and rate bump’s
Why is Regulatory Interest High?

- Depositors prefer time deposits when rates rise
- Duration will shorten and cost will advance faster
- Funding available to support longer terms will fade quickly
Increasing Rates and Credit Quality

- As interest rates rise from very low levels, repayment ability (default) may increase due to higher debt service.

- Does your current loan grading account for these changes? (as PD moves up, LGD increases as return on investment falls)
How Up Rates Impact Loan Defaults

- As rates rise from low levels, credit defaults do increase.
- During the last tightening, defaults rose as the rate of change in debt service outstripped offsetting revenues.
What is the Concern About Prepayments?

- Is there a basis for assumptions?
  - Many models use “industry” values and may not reflect your balance sheet characteristic
  - If models are not properly configured (ILP vs. aggregate), then cash flows will give wrong life (CECL)
  - Some models use “judgment/perception” and perception may not reflect reality (rates did not rise for 11 years)
  - With CECL, bank specific assumption will likely be preferred from the accounting firms perspective
Challenges in Setting Assumptions?

- Lack of meaningful history
  - If bank level analysis has been done, recent history may have distorted these results
    - Prepays (inability to refinance due to lack of competition)
    - Prepays (higher loan defaults)
    - Basis dislocation (funding spreads widened due to increased bank defaults)
  - Assumptions should be built on a minimum of two full rate cycles (1993 - forward)
Does Loan Structure Impact Optionality / Credit Quality / ALLL?
Interrelationship: Rate and Default

- How will rising rates impact repayment ability and credit considerations?
  - With exceptionally low interest rates, P&I shift is much greater
  - As rates rise, will loan grades need to be adjusted (lower DCR)?
  - Default risk at balloon may be at an effectively “lower” grade
  - Need to begin to evaluate the impact before rates rise further
Migration to Other Than Loss

- Grade should migrate up / down as adjustable rate loans move through rate cycles
- Does your grade methodology account for the IRR?
ALM Considerations Under CECL

- **Life of loan**
  - Value risk over life of credit
    - Consideration of scheduled and unscheduled principal reduction (prepayments)
    - Present value of future loss expectation

- **Forward-looking**
  - Interest rate expectations (will DCR change?)
Changes in prepayment rates can substantially alter ALLL under CECL
- Discount Cash Flow (DCF) can lower ALLL over other methods (up to 18%)
- As rates rise, DCF will further discount expected losses if defaults don’t rise
Model Governance

- OCC 2011-12 and FRB SR11-7
- Board policy in place?
- Software validations and independent reviews current?
- Models back-tested to actual outcomes and results shared with the board?
- Key assumptions aggressively challenged (sensitivity analysis)?
- Vender reviews
  - Capacity, reputation, financial viability, independence
  - Industry consolidation will generate vendor fallout
Takeaways: Rate Risk

- NIM will contract as assets extend due to slower prepayments, and funding will shorten and get more expensive as the NMD/time mix reverts to historical norms (less opportunity to do traditional fixed rate lending)

- Model assumptions:
  - Based on bank results?
  - Compared to actual results?
  - Sufficiently stressed?

- Are likely scenarios being tested?
  - For the past 7 years, only slope has changed
  - Given current slope, flattening is expected
Takeaways

- Validations and annual independent reviews should be current and results reported to the board (plus back-test)

- Board training conducted? (regulatory materials can assist)

- Likely scenarios being tested?

- Is the model capable of evaluating your balance sheet characteristics? (optionality, balloons, resets)
Takeaways: CECL

- CECL will make reserves more sensitive to changes in credit quality due to optionality being considered.

- Loan structure can materially impact ALLL under CECL
  - Term and extension risk
  - Floating rate impact on debt service
  - Impact of balloon structures (default differences at balloon)
Questions?
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