Comments for
“Duration Risk Taking and Financial Stability”

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Financial Stability Concerns

• Two sorts of concerns
  – Excess volatility in markets in response to a rate increase
  – Adverse effect of a rate increase on leveraged financial institutions with considerable duration exposure (with possible implications for lending)

• What I’ll touch on here:
  – Some amplification mechanisms that could give rise to excess volatility
  – Bank exposures to rate shocks
    • On the asset side of the balance sheet
    • On the liability side of the balance sheet
Potential Amplification Mechanism 1: Reaching for Yield

- In low interest rate environment, leveraged financial intermediaries may reach for yield by extending duration (Hanson and Stein, 2012)
- Effect of a rate increase amplified when these investors reduce their exposure to long-term bonds

Potential Amplification Mechanism 2: Negative Convexity

- Negative convexity of fixed rate mortgages: Mortgage rates increase → Expected future refinancing activity falls → Duration on MBS increases
- Since aggregate supply of duration rises, bond term premia rise to induce bond investors to bear this additional interest rate risk → Excess volatility of LT yields (Hanson, 2013)
- Negative convexity of MBS captures the strength of this amplification mechanism:
  - Negative convexity is low today because (i) refi behavior of many borrowers has become insensitive to rates (e.g., underwater and/or banks reluctant to lend) and (ii) other borrowers were able to lock in low rates with little risk of ever refinancing
  - As a result, this amplification mechanism will probably be weaker than in the past

![Negative Convexity of Fixed Rate MBS Market](image)

Negative convexity is currently at fairly low levels by historical standards (~25th percentile)

*Source: Based on data in Samuel G. Hanson “Mortgage Convexity,” Harvard Business School working paper, November 2013. See this paper for further discussion of the amplification mechanism discussed above.*
Bank Exposures to Interest Rates on the Asset Side

- Hard to know from public disclosures the precise magnitude of asset-side B/S exposures
- During 2013Q2 5-year Treasury yields rose about 60 bps, In aggregate, banks reported losses of about $33.1B on available-for-sale securities of $2,678B (1.2%)
- Chart below compares 2013Q2 losses to those in 2004-2006 period of rate increases. Only a partial picture given exposures elsewhere in bank portfolios, including interest rate swaps

Data Source: FDIC Statistics on Depository Institutions
Bank Exposures to Interest Rates on the Liability Side

- Losses on the asset side of the balance sheet can be offset on the liability side if rate increases are not fully passed through in borrowing costs.
- Pass-through will be attenuated to extent bank has more sticky low-cost deposits and savings accounts.
- In last rising rate cycle (2004 – 2006) considerable variation across banks in rate pass through, as well as variation across products and locations (Solomon, Stockton, and Meleis, 2013).

<table>
<thead>
<tr>
<th>Cost of Deposits*</th>
<th>COD Change</th>
<th>Change per 100 bp Fed Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>+329 bp</td>
<td>+78 bp</td>
</tr>
<tr>
<td>Third Quartile</td>
<td>+237 bp</td>
<td>+56 bp</td>
</tr>
<tr>
<td>Second Quartile</td>
<td>+201 bp</td>
<td>+48 bp</td>
</tr>
<tr>
<td>Lowest</td>
<td>+140 bp</td>
<td>+33 bp</td>
</tr>
<tr>
<td>Hi-Lo Difference</td>
<td>189 bp</td>
<td>45 bp</td>
</tr>
</tbody>
</table>

*Interest expense on domestic deposits as a percent of average balances
Analysis of data from Highline Financial by Novantas, Inc.

Factors Affecting Deposit Repricing

More Repricing
- Time deposit share much lower than average (~18% vs. ~35%) → shift into more costly time deposits when rates rise
- Growth of online banking and erosion of branch banking (greater scope for shopping/less scope for customer retention)
- Enhanced liquidity requirements could put a premium on core deposits and lead to more competition for these deposits

Less Repricing
- Loans/Deposits ratio is relatively low so there may be less competition for deposits

See Solomon, Stockton and Meleis (2013) for elaboration of some of these points.