Comments for
"Duration Risk Taking and Financial Stability"

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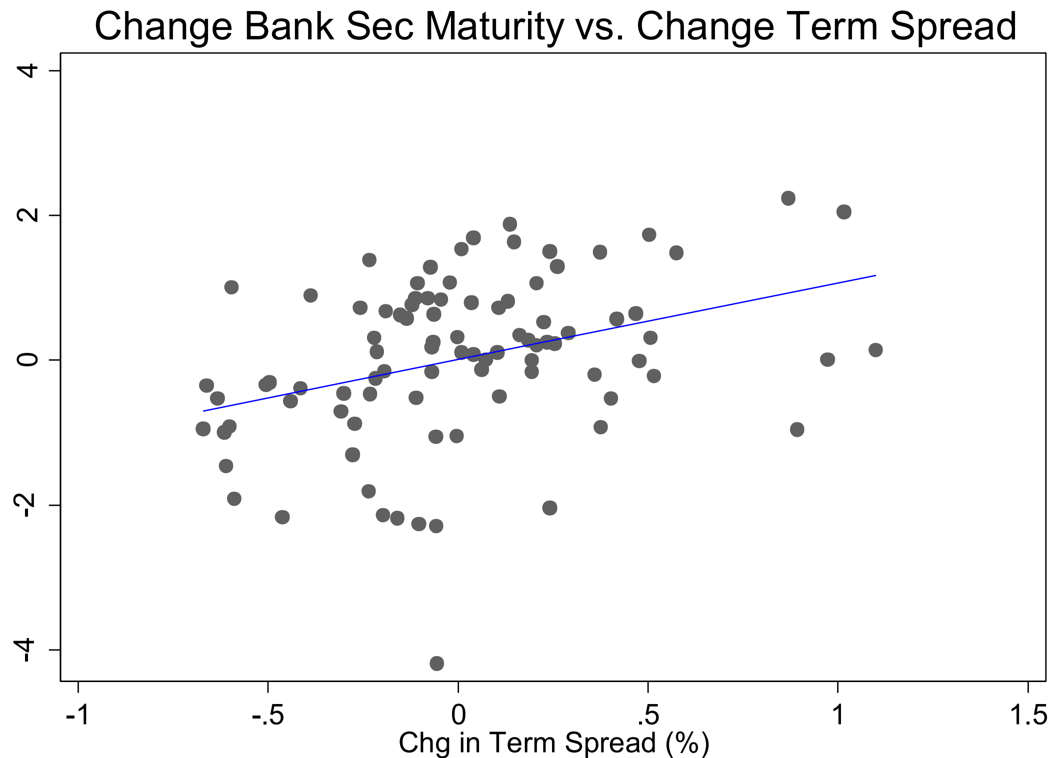
Financial Stability Concerns

- 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

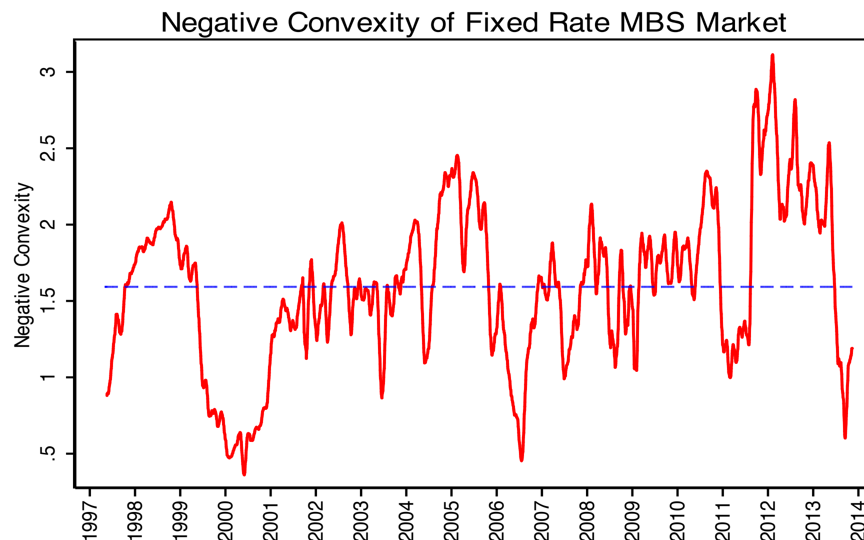
- In low interest rate environment, leveraged financial intermediaries may reach for yield by extending duration (Hanson and Stein, 2012)
- Effect of a rate increase amplified when these investors reduce their exposure to long-term bonds



Source: Based on data in Samuel G. Hanson and Jeremy C. Stein, “Monetary Policy and Long-Term Real Rates,” Harvard Business School working paper, July 2012.

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

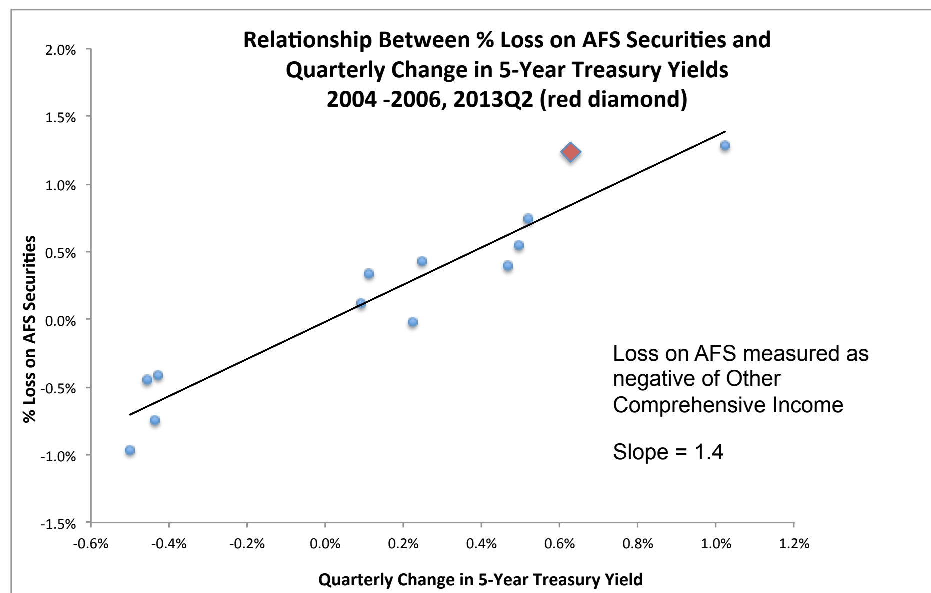


← Negative convexity is currently at fairly low levels by historical standards (~25th percentile)

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).

Cumulative Increase in Cost of Deposits for Top 50 U.S. Banking Companies
2004Q2 to 2006Q3
Fed Funds Rising from 1.00% to 5.25%

Cost of Deposits*	COD Change	Change per 100 bp Fed Funds
Highest	+329 bp	+78 bp
Third Quartile	+237 bp	+56 bp
Second Quartile	+201 bp	+48 bp
Lowest	+140 bp	+33 bp
Hi-Lo Difference	189 bp	45 bp

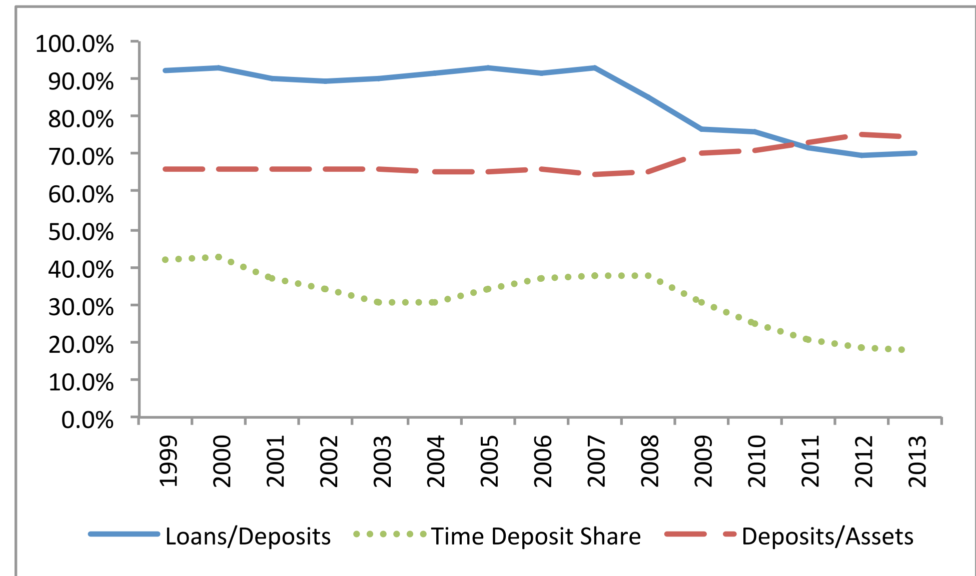
*Interest expense on domestic deposits as a percent of average balances
Analysis of data from Highline Financial by Novantas, Inc.

Source: Richard Solomon, Adam Stockton and Sherief Meleis, "Deposit Strategy: Preparing for Rising Rates" *Banking Strategies,* November 2013

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



Data Source: FDIC Statistics on Depository Institutions

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.