Interest Rate Risk

R&C Bankers Conference
Federal Reserve Bank of Boston
October 16, 2013   Presenter: Ron Adams

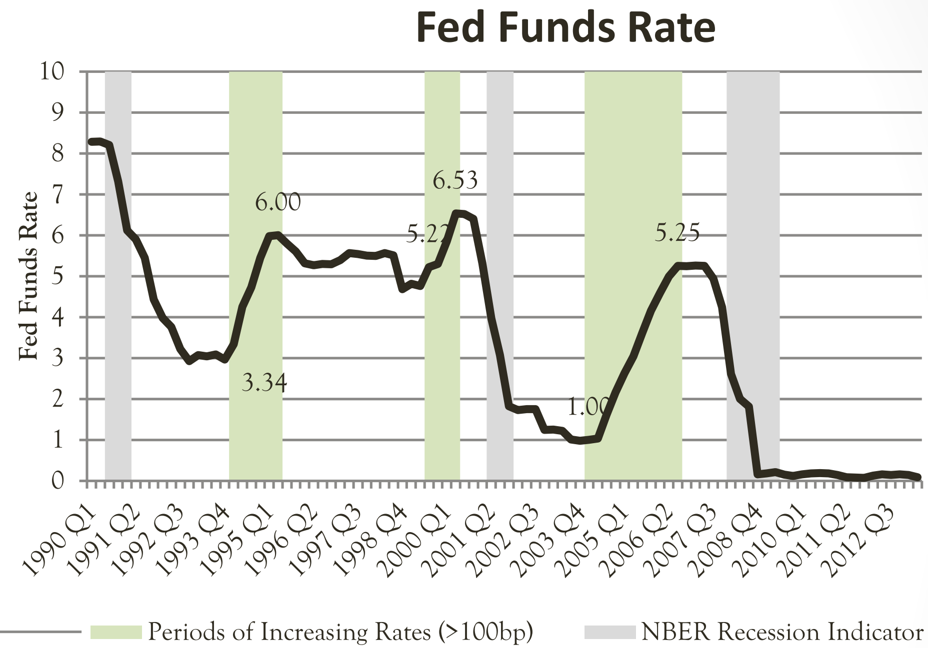
Interest Rate Risk

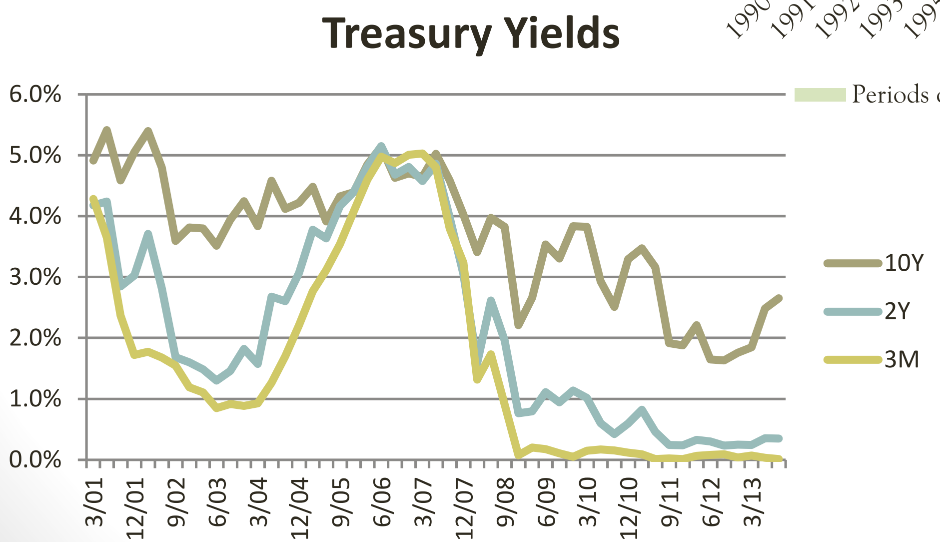
- Where are we now
- What happened in the past during periods when rates rose sharply
- What might happen looking ahead
- What are some considerations in planning for future rate changes

Interest Rate Risk

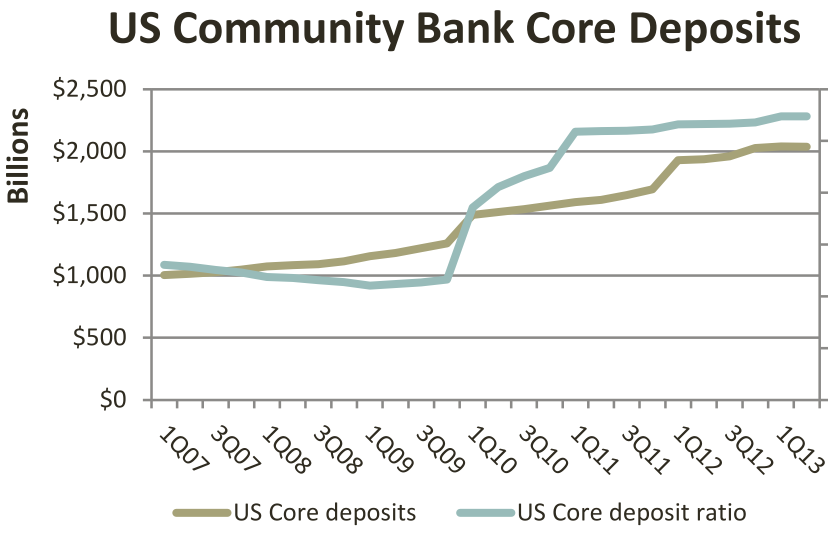
- Where are we now?

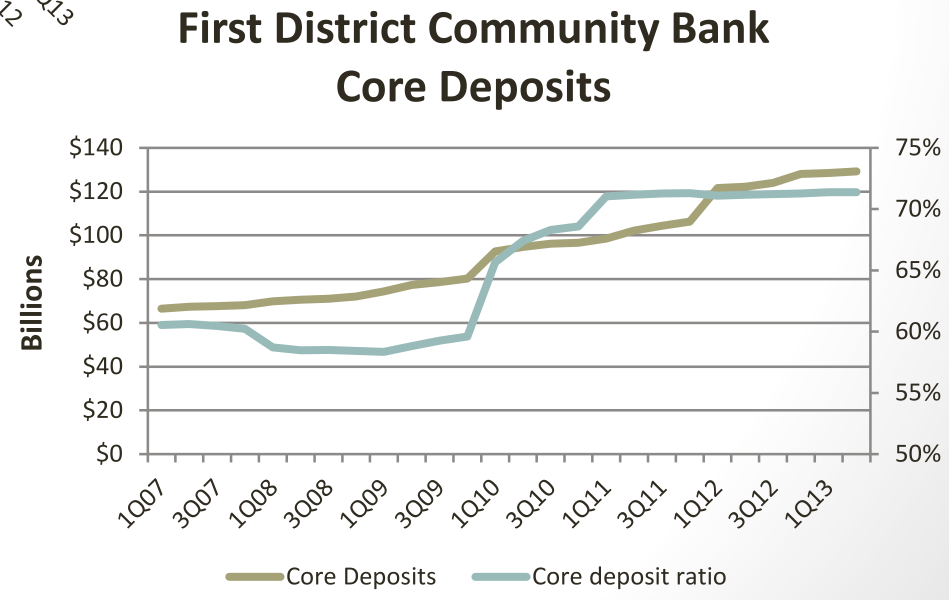
Interest Rate Environment





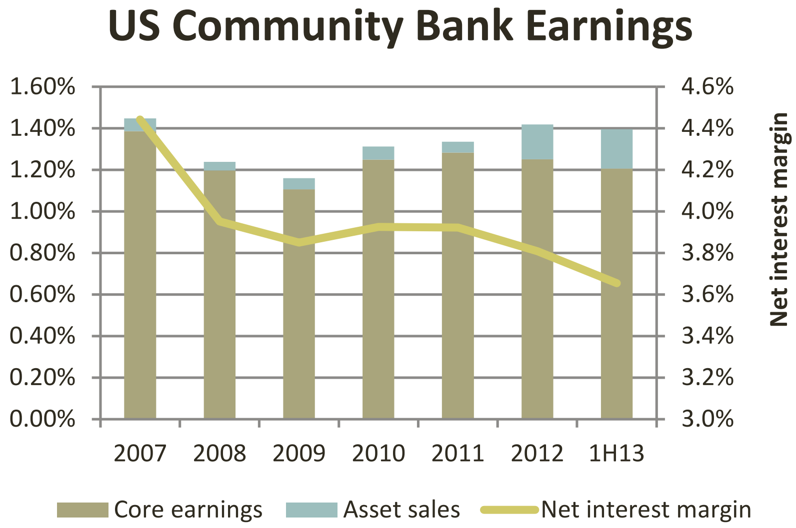
Core Deposit Growth Robust

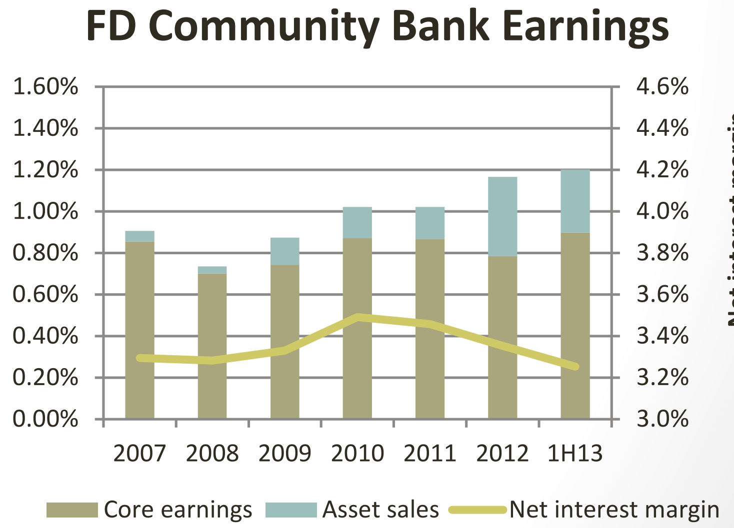




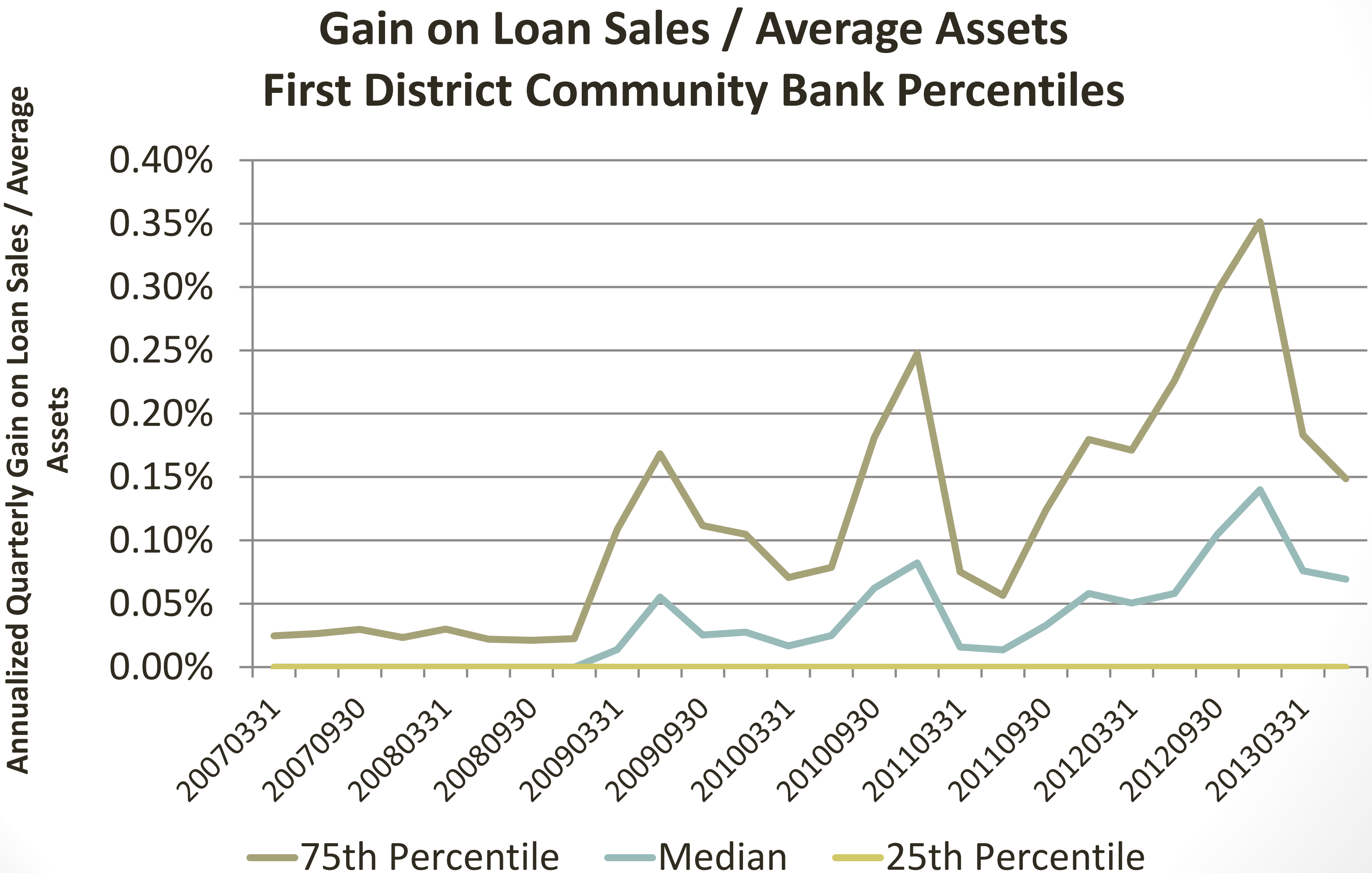
Earnings Implications

- Shrinking margins
- Loss of loan sales

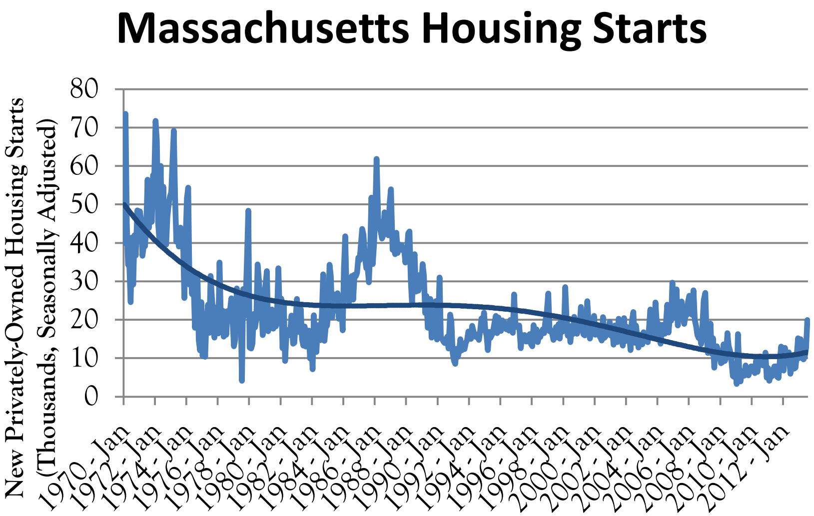


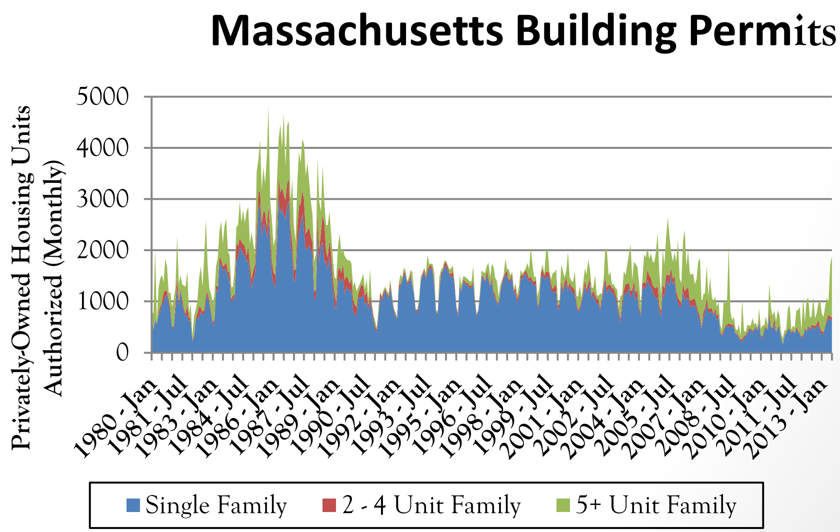


Negative Trend in Gain on Loan Sales / Average Assets

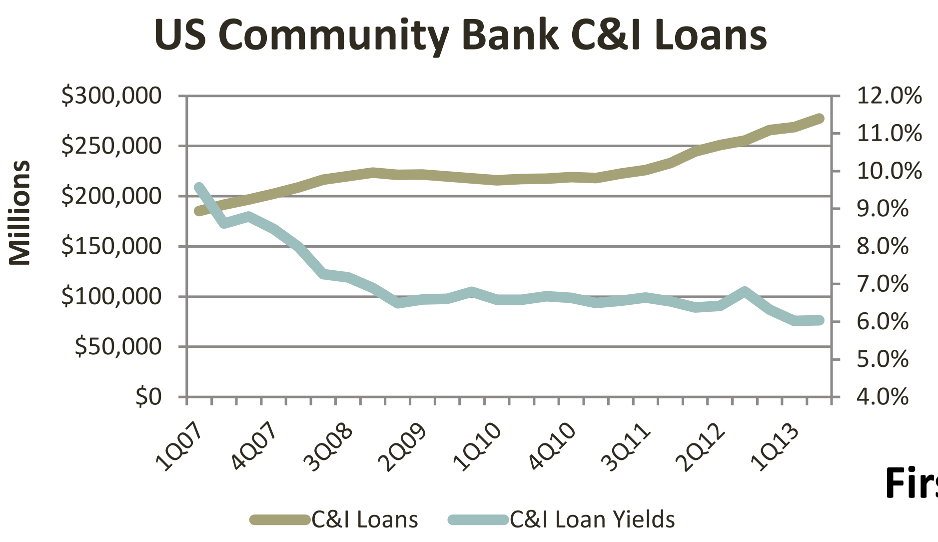


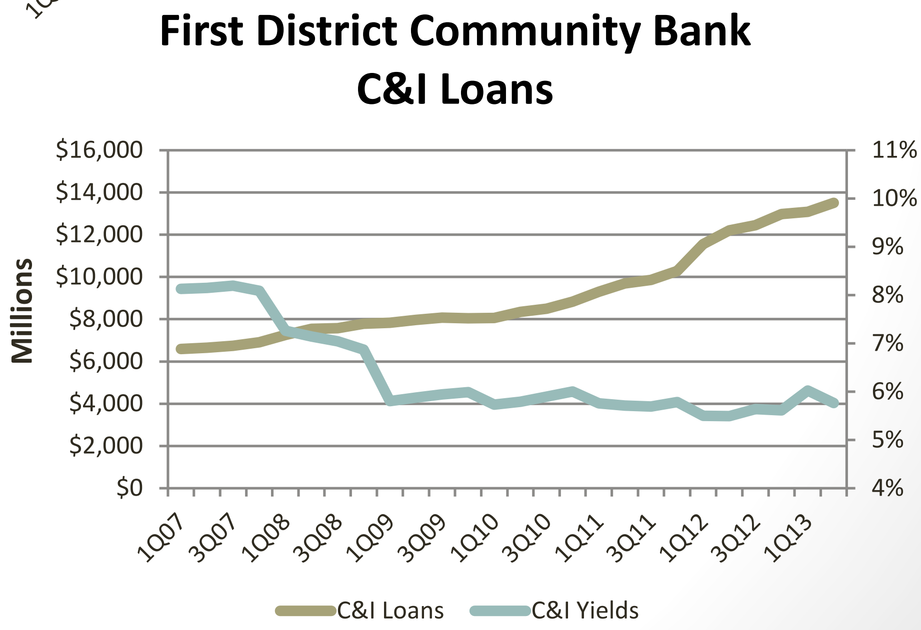
Housing Rebounding?



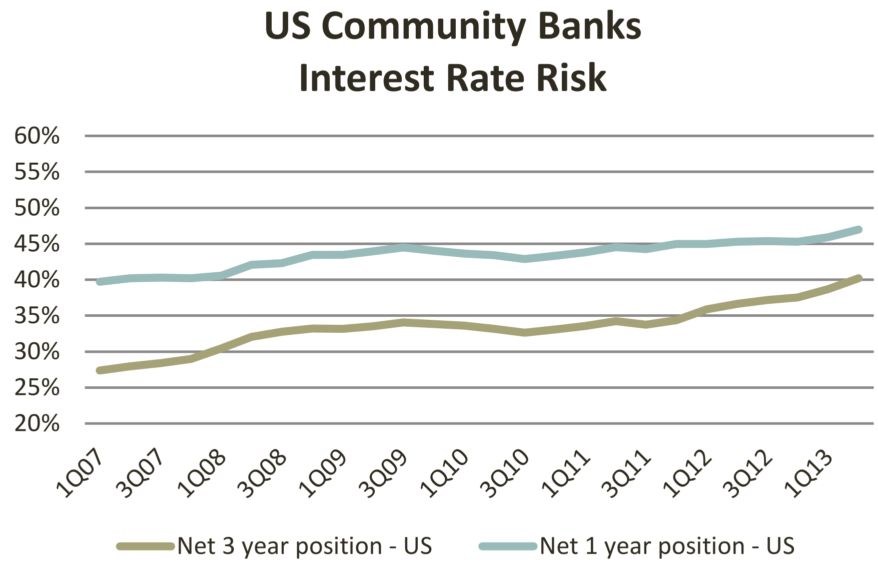


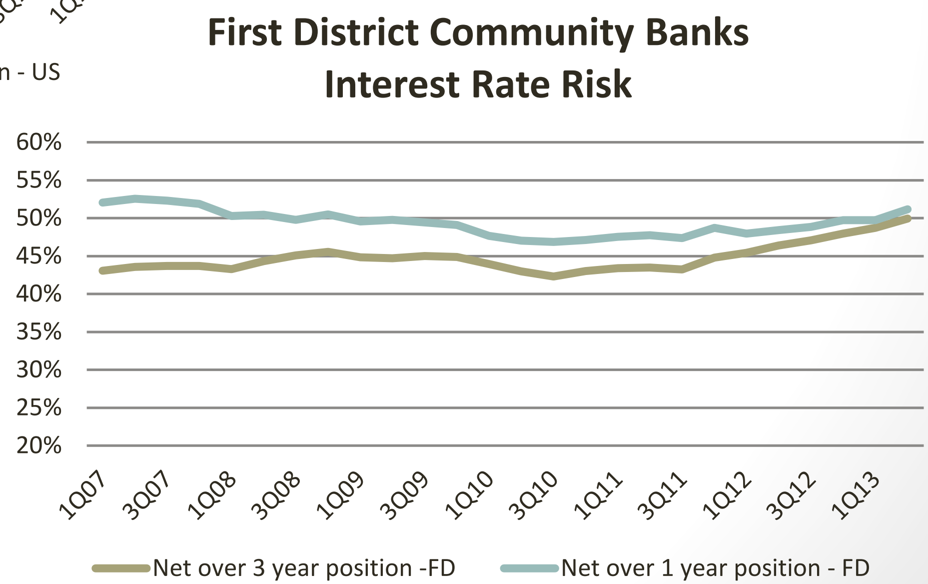
Modest Commercial Loan Growth





Extending portfolios for yield

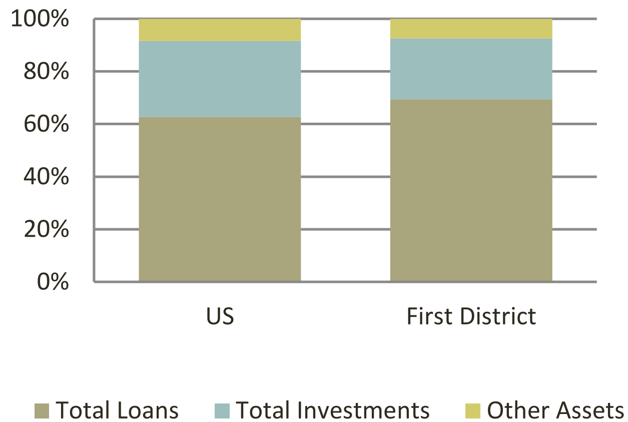




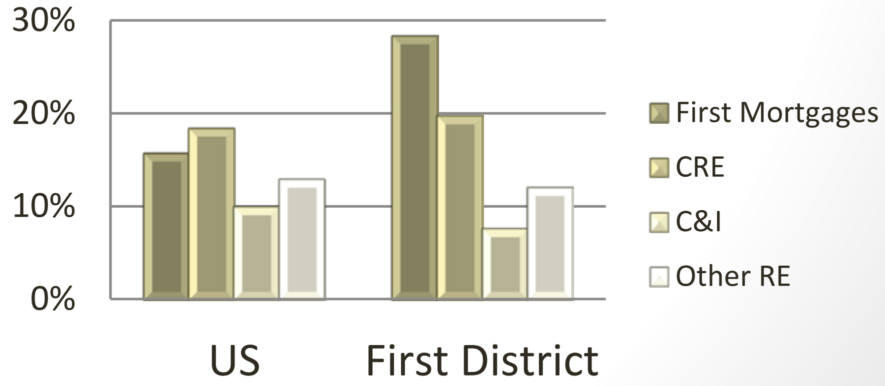
High Proportion of Mortgages in New England

- First District community banks are more loaned up and have more first mortgages

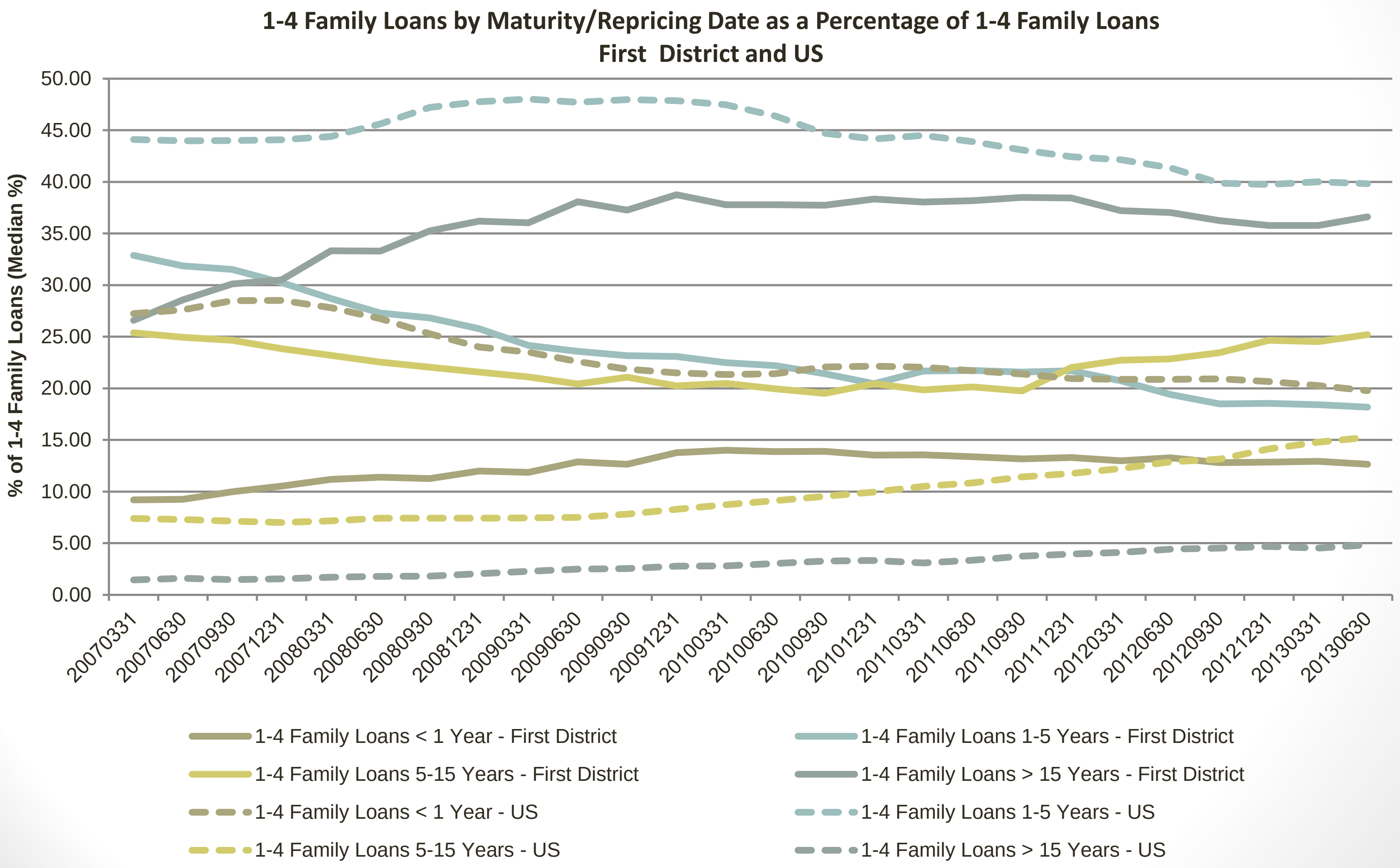
Community Bank Asset Composition



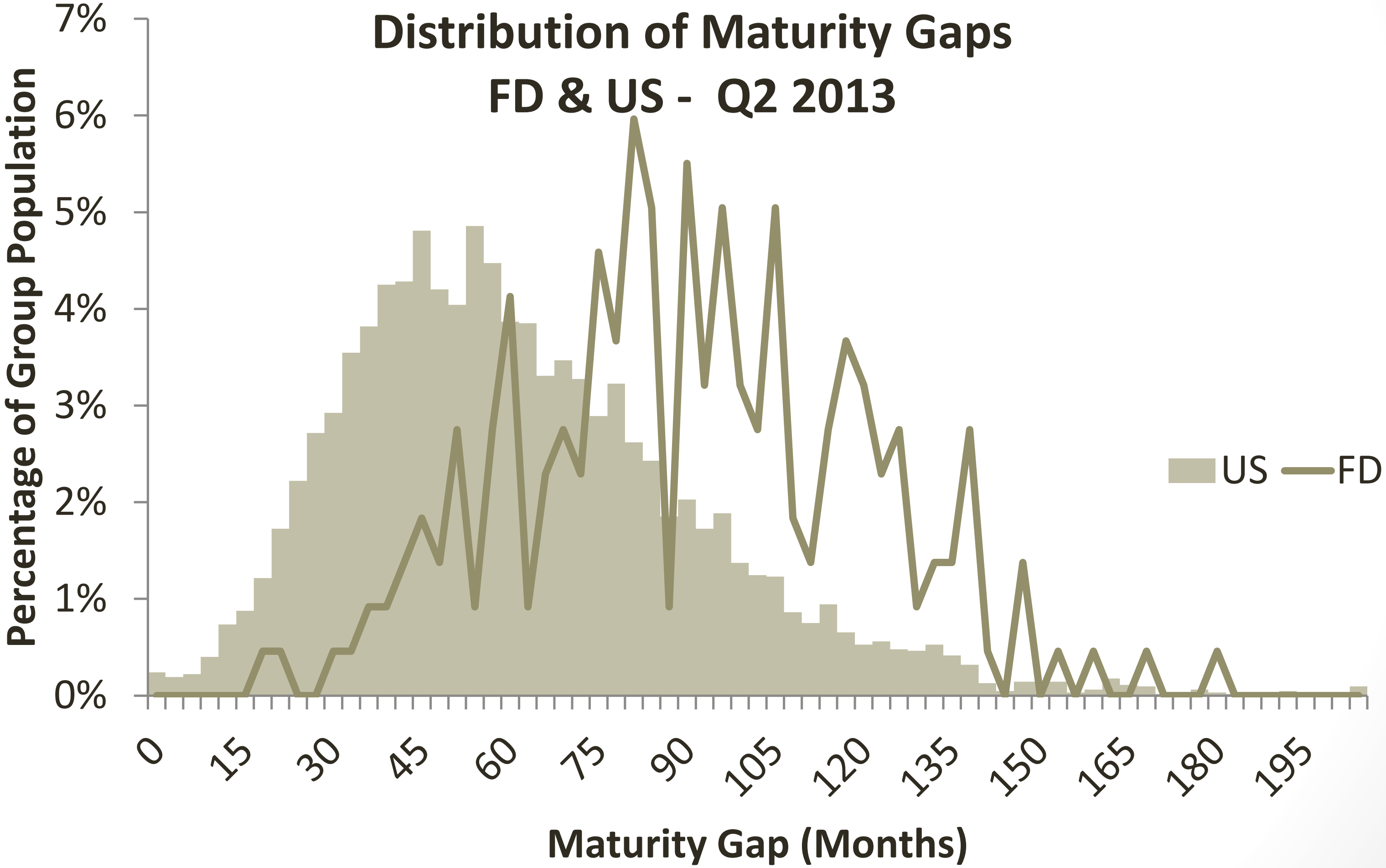
Community Bank Loan Portfolio as % of Total Assets



High proportion of 1st Mortgages mature >15 Years

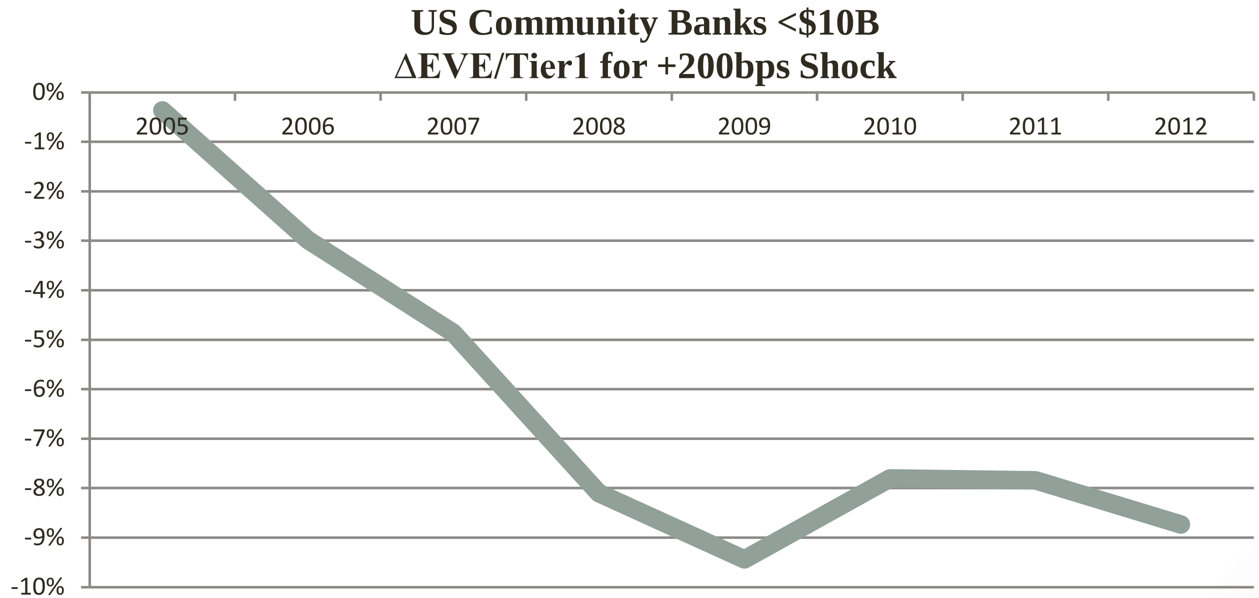


Mind the GAP-NE Community Bank GAPs are Longer than US

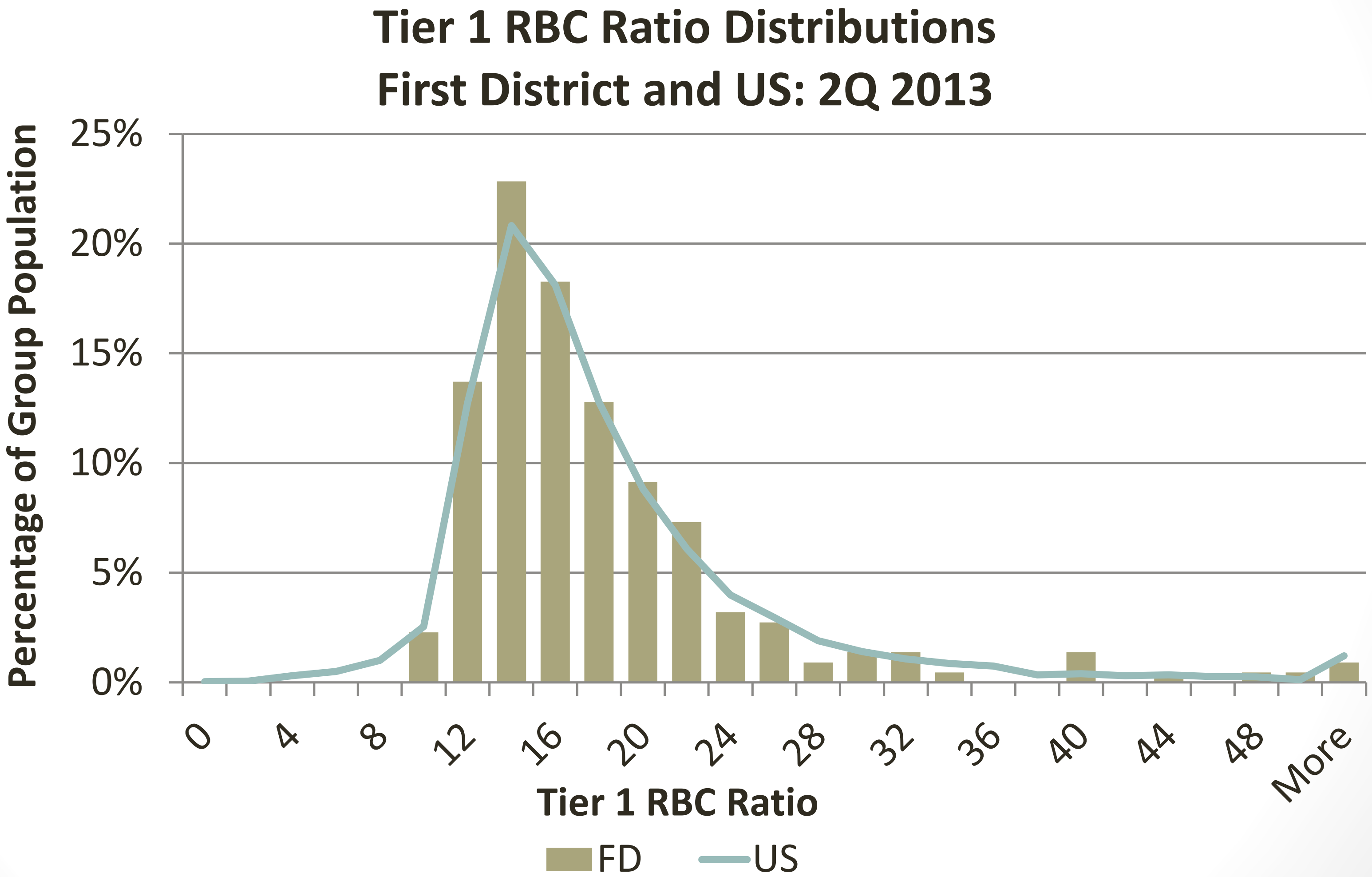


Interest Rate Risk

- Surveillance tool
  - Economic Value of Equity



Capital Remains Solid

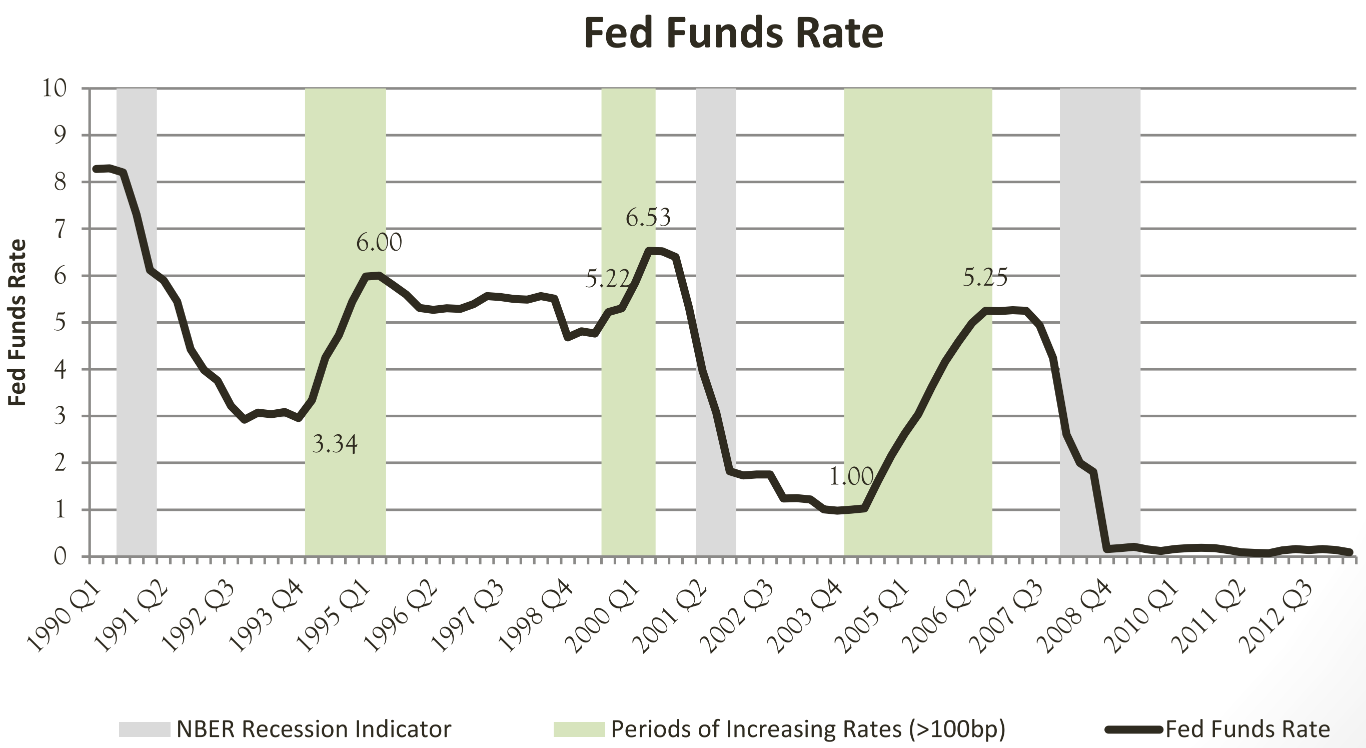


Where are we now summary

- Influx of deposits with unknown duration and repricing expectations
- Opportunities to sell loans and investments may have peaked
- Loan growth tempered
- Longer duration assets have resulted in higher maturity gap that could negatively impact both earnings and capital
- Capital cushions are solid.

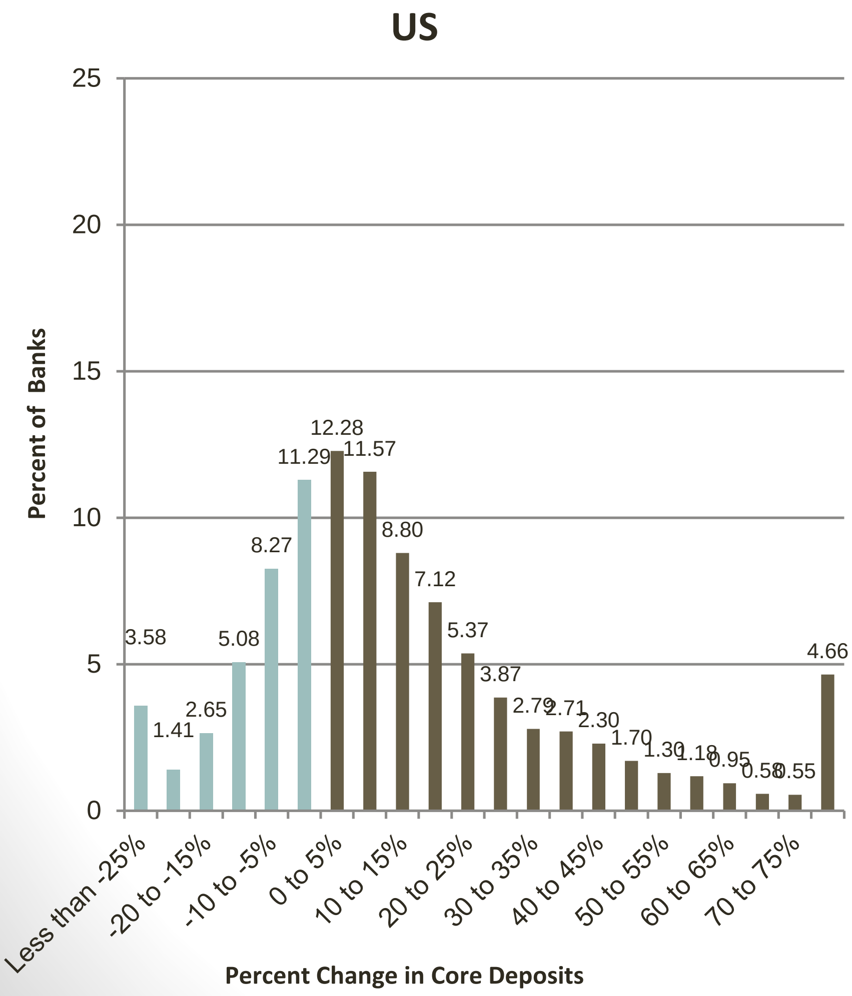
Interest Rate Risk

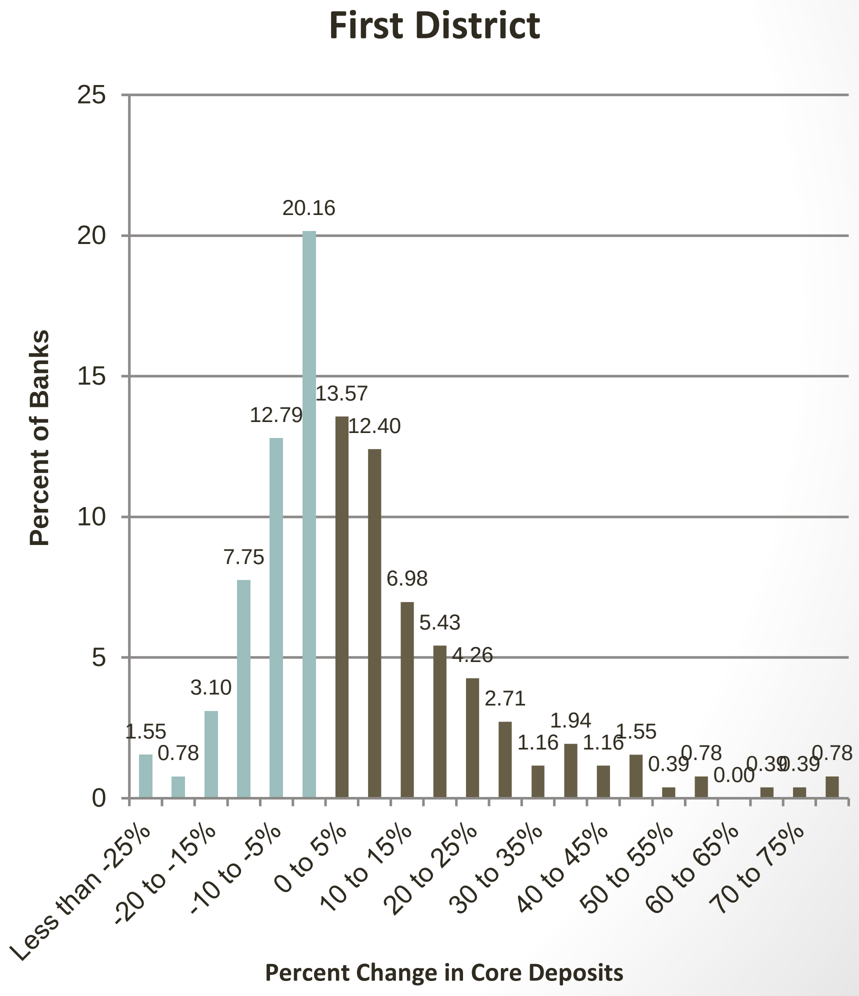
- What Happened in the Past?
- Assess 2004-2006 period



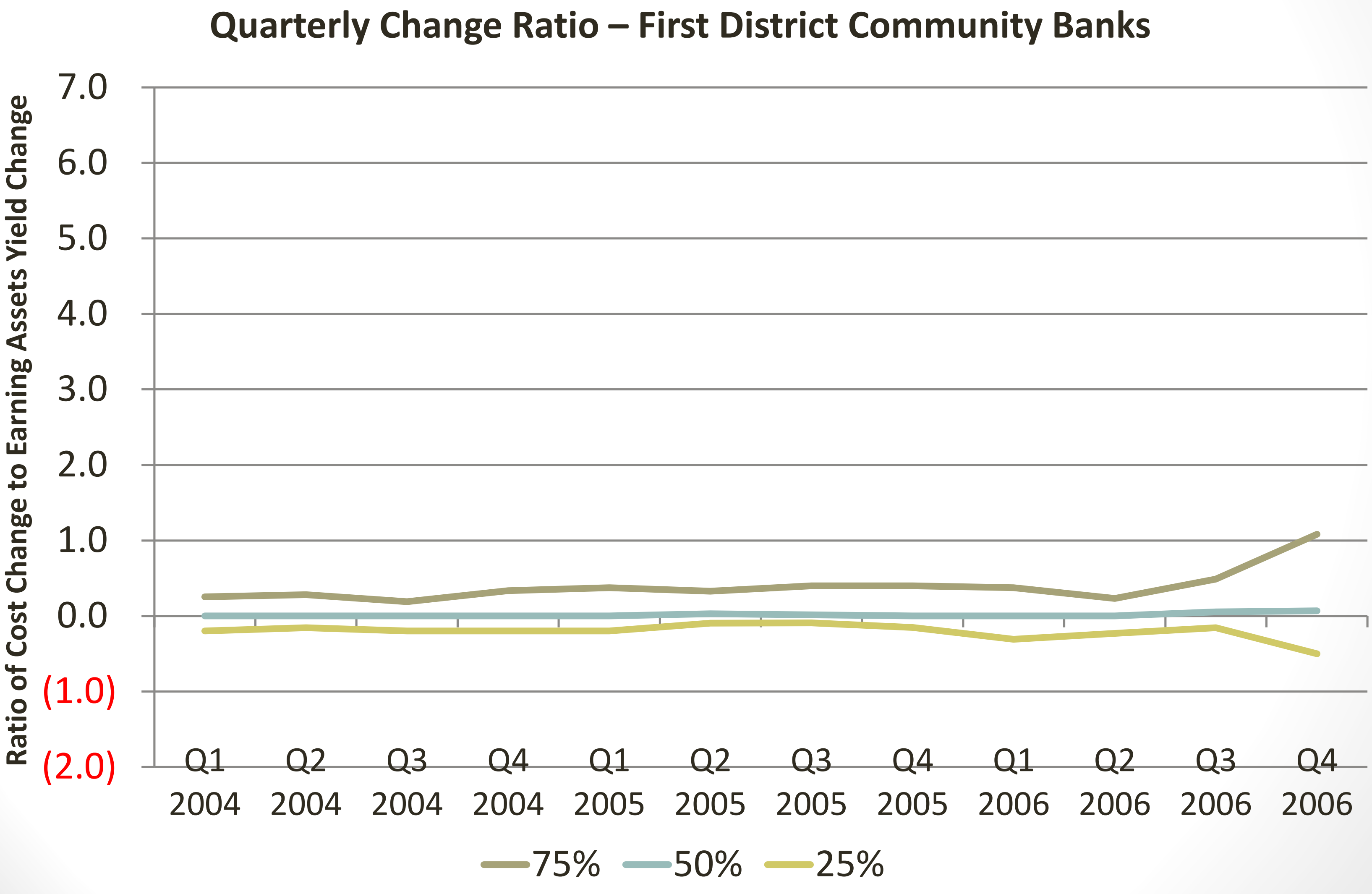
Core Deposits Experience Was Mixed

Change in Core Deposits 1Q04-4Q06

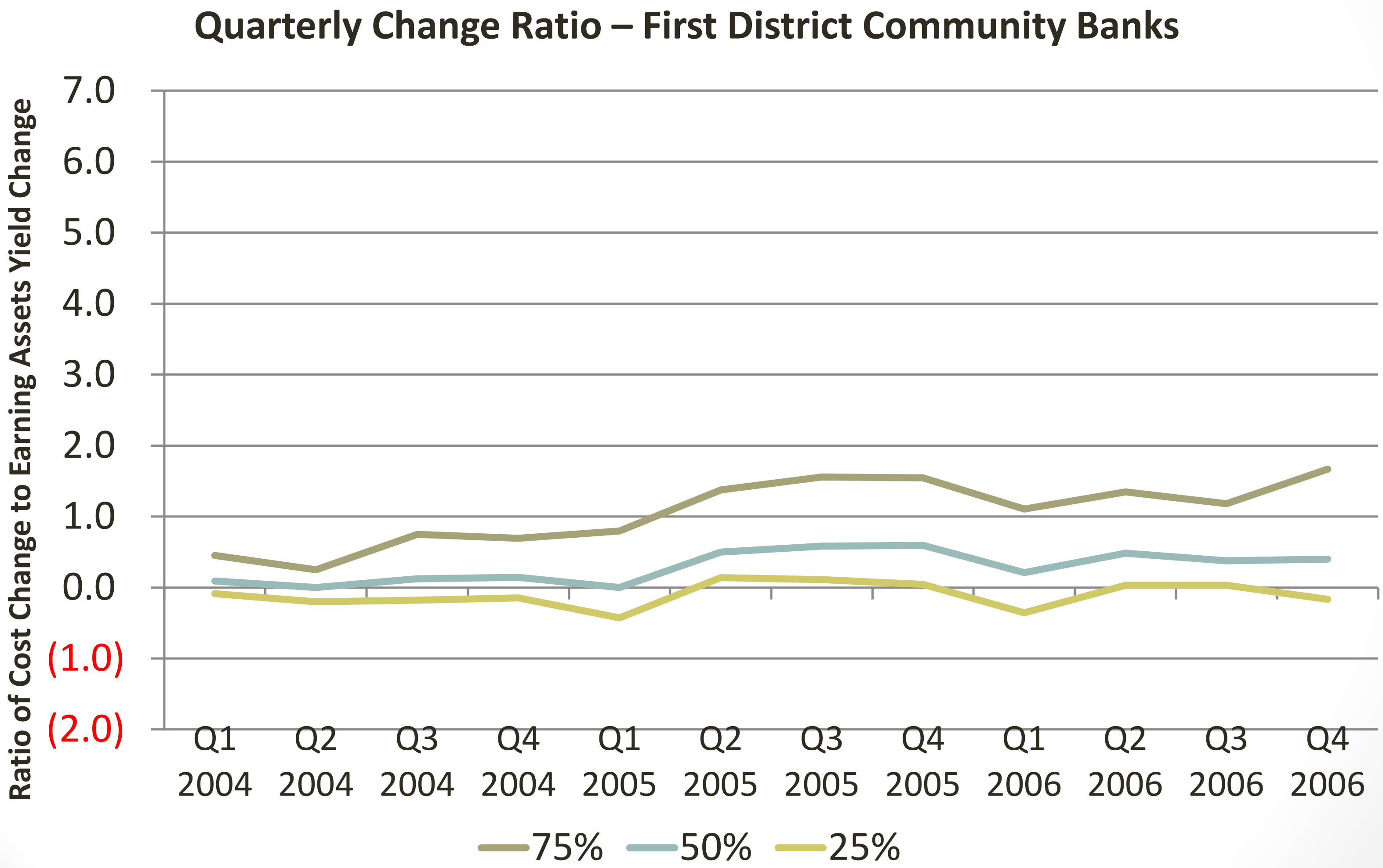




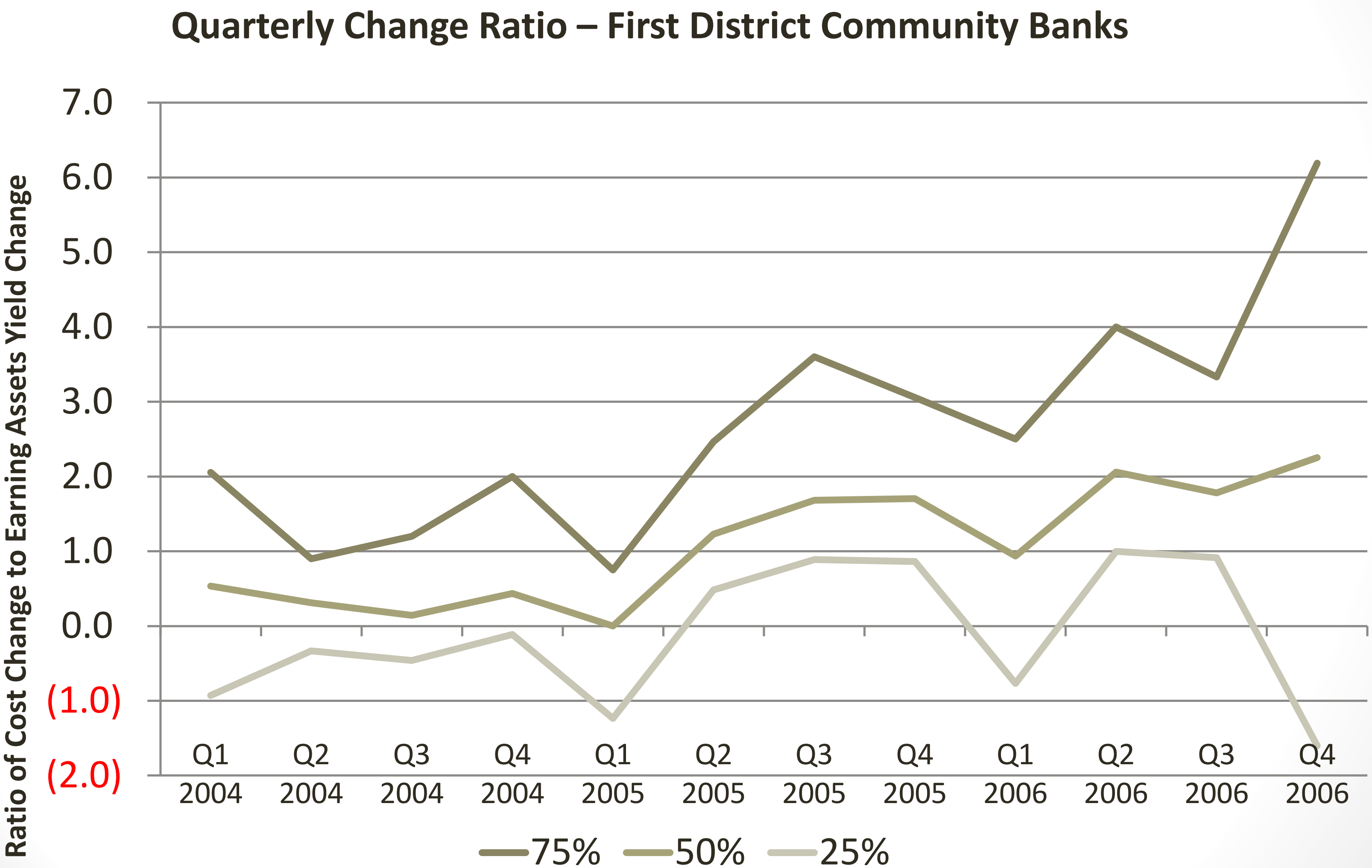
Transaction Costs & Earning Assets Yield Change Ratio



Savings/MM Costs & Earning Assets Yield Change Ratio



Time Deposits Under $100k Costs & Earning Assets Yield Change Ratio

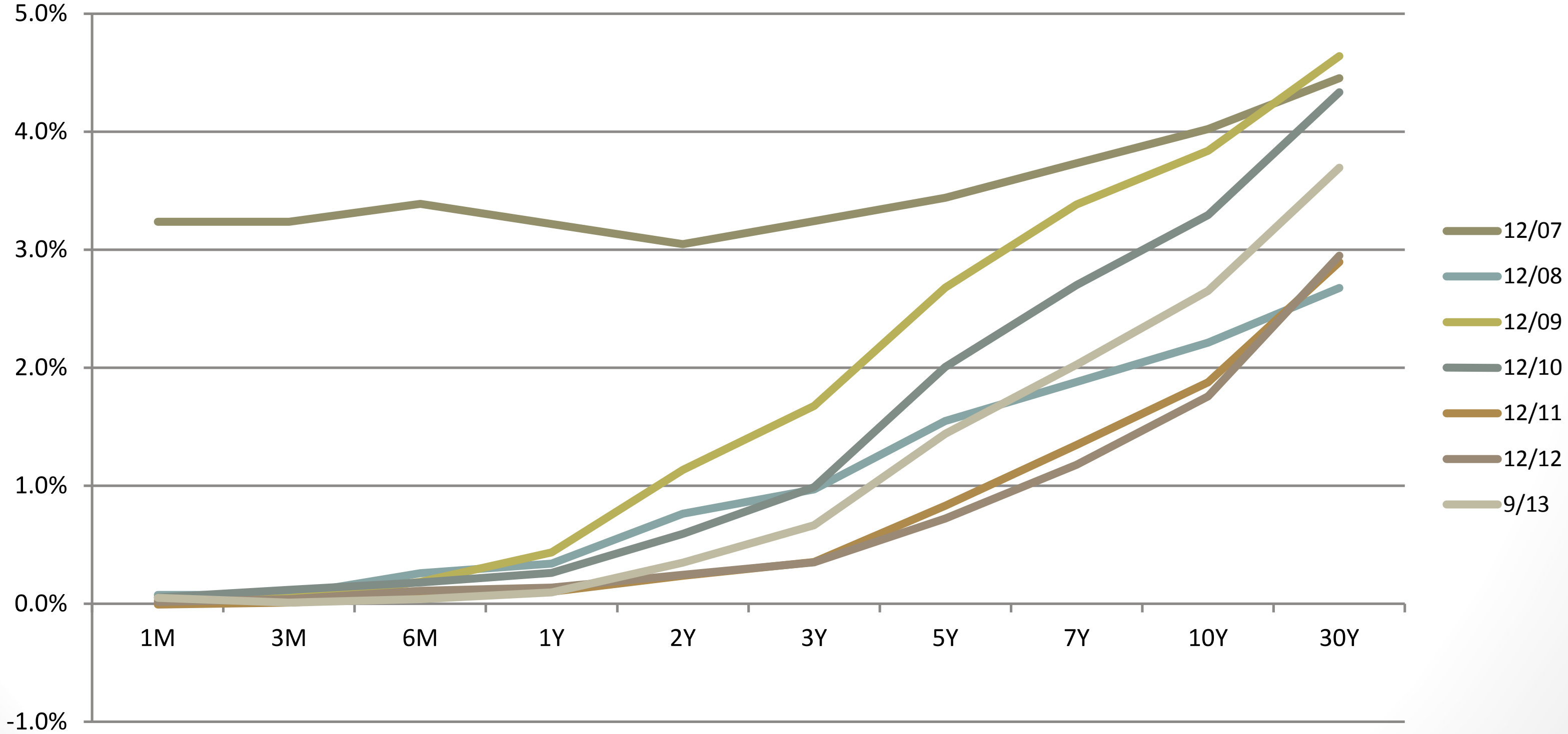


Interest Rate Risk

- Where Are We Going?

Interest Rate Yield Curves

- We have experienced a parallel downward shift and steepening of the yield curve
- Most recently a steepening of the curve: 70-90bp increase In 5Y-30Y maturities since YE2012



Possible Rate Scenarios

- **Flattening**: 2007 prior to start of crisis-short-term rates increased at a faster rate than long-term rates.
- **Shock:** 2008/2009 Rates move down aggressively coupled with quantitative easing and slowing economy.
- **Steepening 2009/2010**: Short-term rates remain low while long-term rates increased.
- **Parallel**: 2011/2012. The long end came down as benefited by quantitative easing.
- **Current 2013**: Rates remain at current levels? Possibly for a long time?
- **What should you consider in managing IRR across the various scenarios**
  - Asset strategies
  - Liability strategies
  - Hedging/Matched Funding Strategies

Questions to Consider: Asset Strategies

- Opportunity to reinvest cash flows:
  - What will the impact of varying PPS have on your estimated cash flows? And opportunities to reinvest
- What is the cost benefit of various strategies?
  - selling long duration residential loan originations
  - increasing yields in the investment portfolio, while taking a balanced approach CMOS or callable bonds
  - retaining versus selling investments

Questions to Consider: Deposit Retention

- Will retirees look to maintain risk free deposits?
- Will there be a movement to nondeposit products-driven by market dynamics?
- How will the deposit base associated with the new branches you opened in the last 5 years respond to the change in rates versus legacy branches?
- When will mean reversion kick in to restore the traditional deposit mix with a shift out of low cost nonmaturity deposits back to time deposits? Traditional view 67 NMD/33 Time now 87/13 on average.

Questions to Consider: Deposit Sensitivity

- estimating the stickiness of deposits (surge deposits);
- estimating the impact of rate changes on deposits in terms of shifts into other products (NMD to Time);
- determining products that you can adjust the pricing on to cause a shift into to reduce the full blown market rate affect (tiered money market accounts);
- and your expectations for the mean reversion from non maturity deposits to time deposits (overall shift from NMD to time).

Question to Consider: Hedging Strategies

- Under what circumstances it benefit your bank to hedge certain instruments?

- Interest Rate Swaps (inclusive of forward swaps) i.e. converting fixed rate payments to floating or the reverse i.e. convert variable rate to fixed TPS to fixed by entering into a pay float and received fix=expense is fixed over the duration of the hedge.

- Questions for ALCO-assessing earnings impact if cash flow hedge is imperfect. From a cost benefit perspective you may find that a micro hedge is more appropriate than hedging a pool of loans.

Decision Tree

- Act now or wait? What do you need to weather the current period and reduce longer term rate risk? Take a hit today to reposition the balance sheet? If no action is taken what capital resources do you have to cover overhead?

- Immunizing against IRR? At what point do you consider term funding in a match funding scenario to lock in a margin or enter into a derivative contract?

- What steps can you take to reduce IRR in the long run? Reduce asset duration over time? Increase liability duration over time?