

# Interest Rate Risk Update

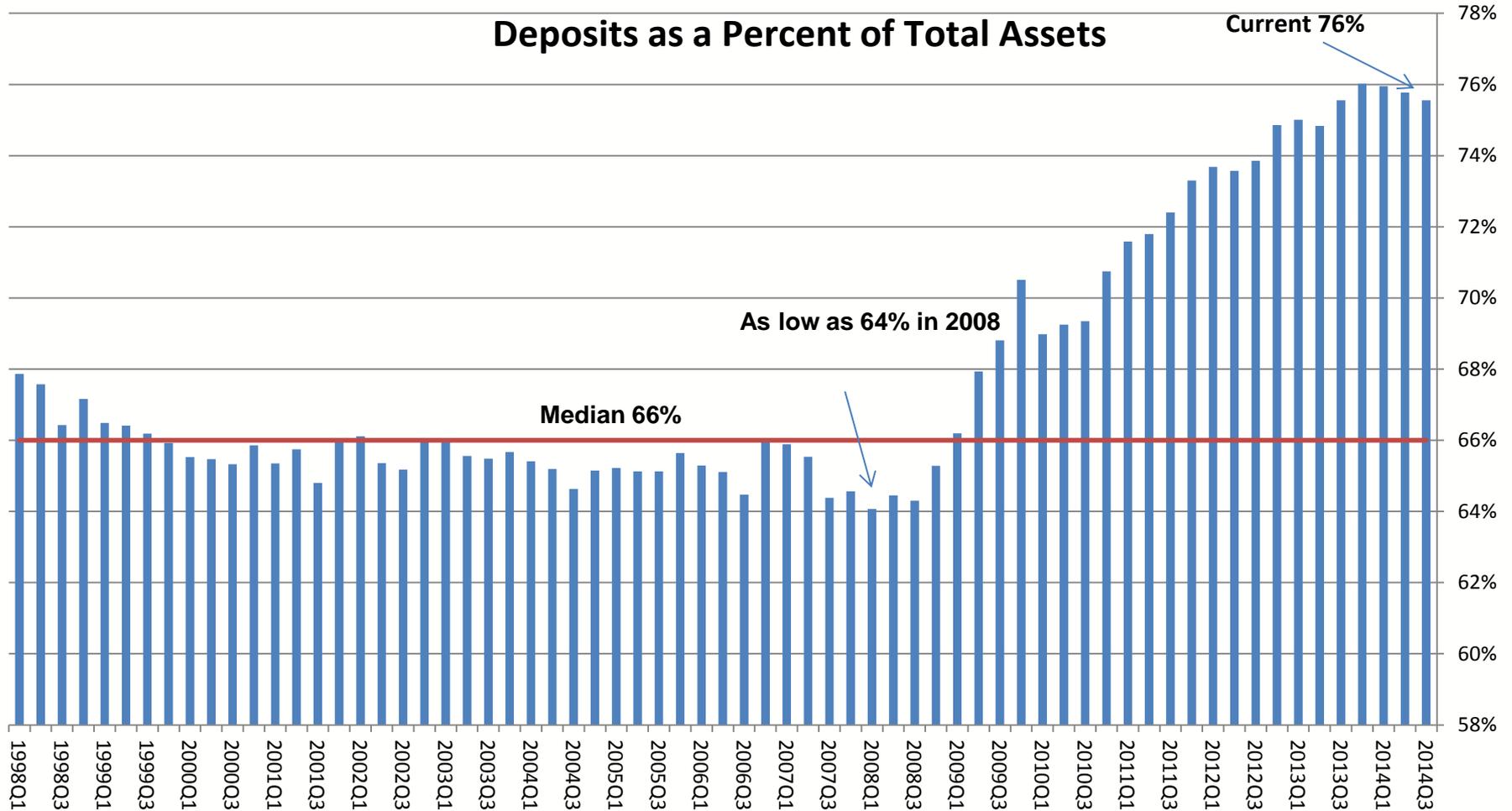
Minority Depository Institutions Advisory Committee  
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Management

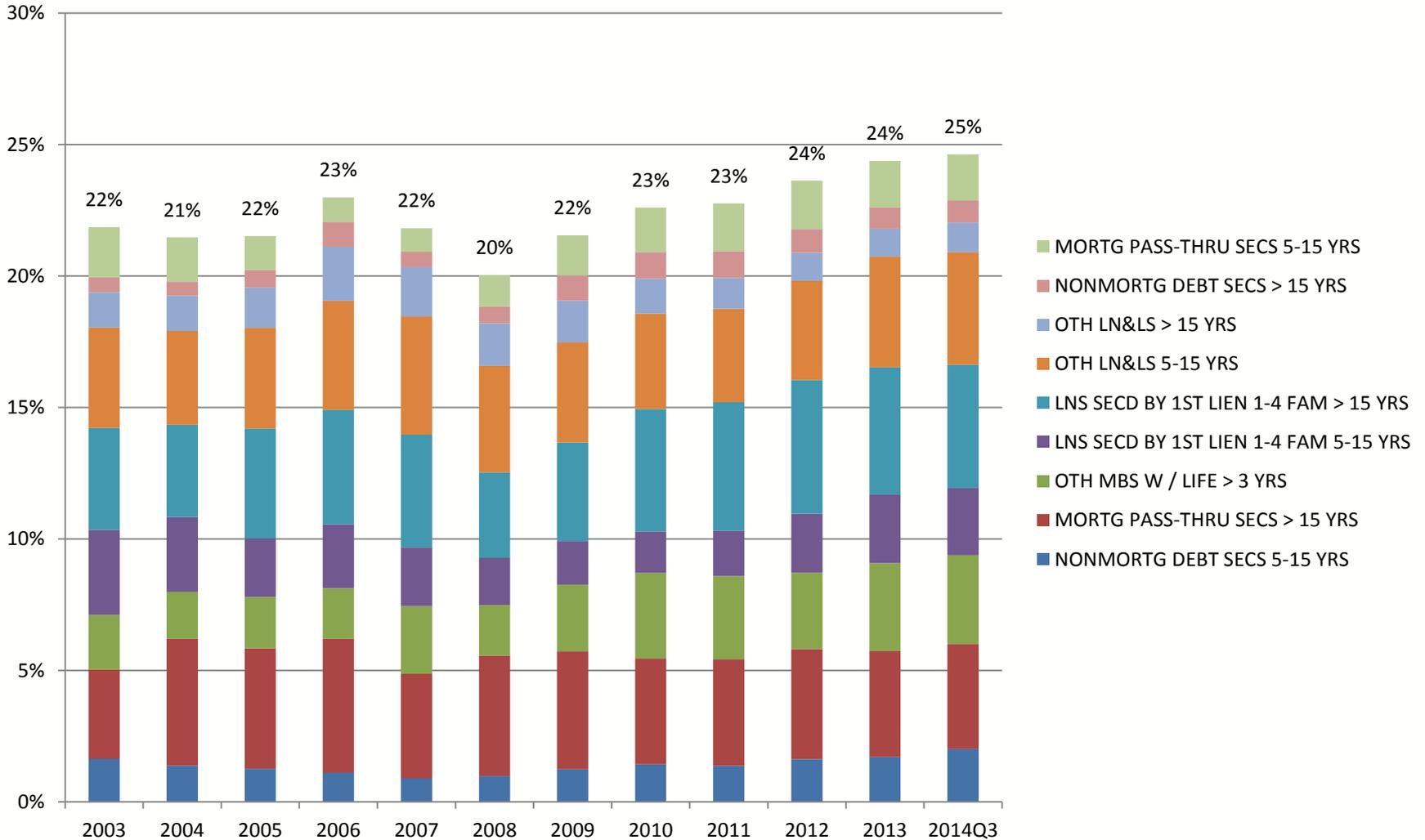
- Market Environment
  
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# Market Environment

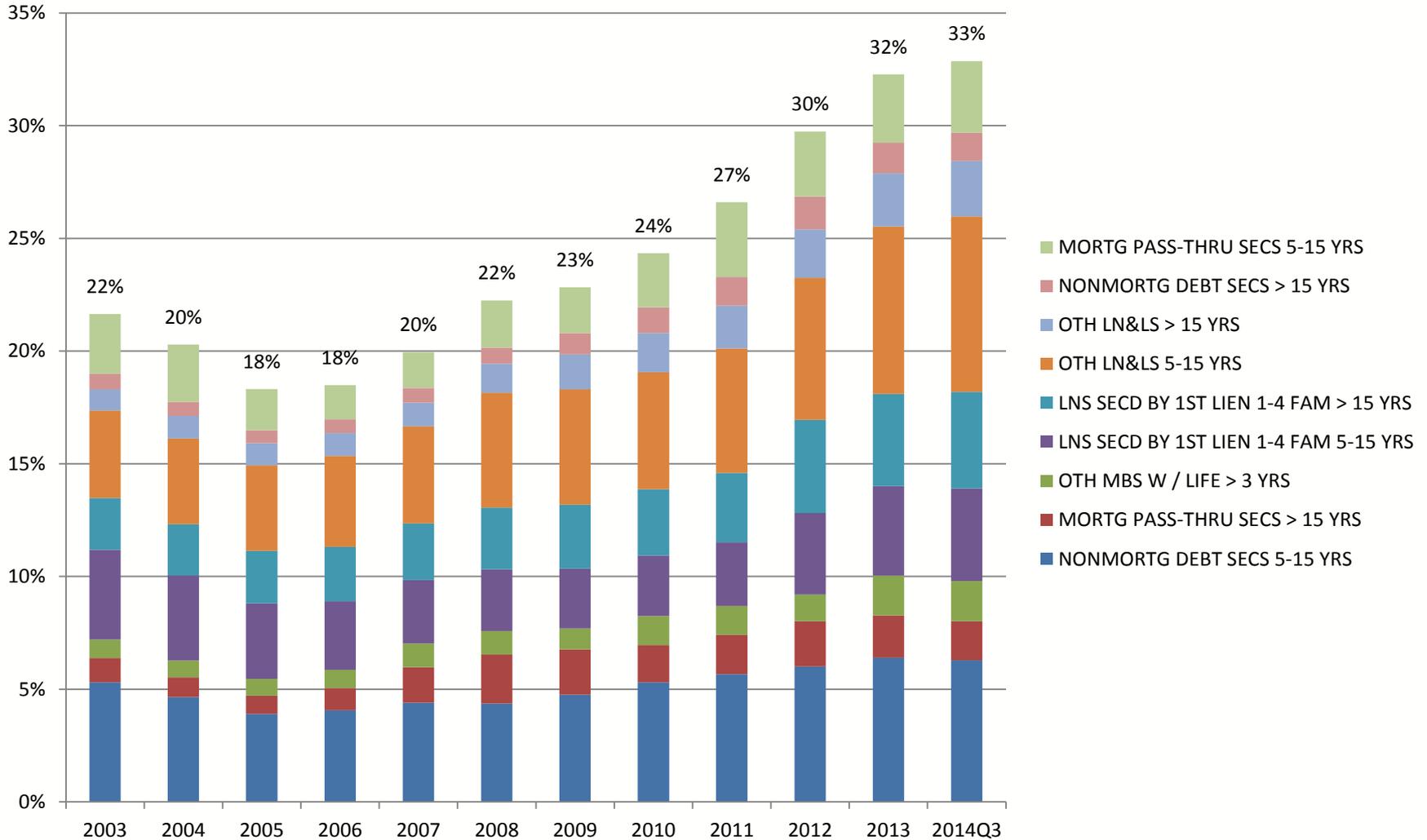
### Deposits Experienced Considerable Growth



### Long-term Assets as a Percentage of Total Assets



### Long-term Assets as a Percentage of Total Assets



## IRR Range of Practice

The prolonged low rate environment has resulted in pressure on net interest margins and net income as asset yields declined and cost of funds hit historic lows.

- OCC regulated entities responded to the interest rate environment by either:
  - Positioning their balance sheets for a rising rate scenario – these banks remain more liquid, or
  - Positioning for a prolonged low rate environment – these banks increased the maturity and repricing length of assets.
- Compounding the complexity of IRR management is the sustained volume of non-maturity deposit (NMD) inflows resulting in a considerable amount of funding at historically low rates. Predicting the future behavior of these depositors is a key component of IRR modeling.
- The combination of lengthening or shortening asset duration while managing liability stability directly affects IRR.

During 4Q13 and 1Q14, the OCC began gathering additional information to establish the range of practices MCBS banks use to identify and measure IRR.

- This information included multiple data points ranging from modeled exposure, both short-term and long-term measures, to rate scenarios and NMD assumptions.
- Information gathered provided insight into IRR identification processes.
- This information supplements quarterly call report data that provides balance sheet and income statement trend data.

<b><u>National Statistics on Risk Limits</u></b>		
<u>Scenario</u>	<u>EAR - 12 month NII</u>	<u>EVE</u>
-100	-8%	-10%
100	-8%	-10%
200	-10%	-20%
300	-15%	-25%
400	-20%	-30%

- The above chart shows the median risk limits for Earnings-at-risk (EAR) and Economic Value of Equity (EVE) models by parallel shock scenarios.
  - Most banks correlate the limits to the scenario.
  - The limits expand and contract based on the severity of rate movements in the scenario; the larger the scenario’s rate movements, the larger the limit.
  - Typically banks run a standard set of scenarios with risk limits. There is no expectation that every rate scenario will include a risk limit.

**National Statistics on Earnings at Risk - 12-Month, Net  
Interest Income, Parallel Shocks**

<u>Scenario</u>	<u>Number</u>	<u>Largest Loss</u>	<u>25th %ile</u>	<u>Median</u>	<u>75th %ile</u>	<u>Largest Gain</u>
-100	1,163	-13%	-4%	-2%	0%	6%
100	1,189	-8%	-1%	1%	4%	16%
200	1,229	-16%	-3%	2%	7%	30%
300	1,220	-24%	-4%	2%	9%	44%
400	1,134	-31%	-6%	3%	12%	57%

- Banks typically measure EAR to identify the short-term risk to interest rate changes.
  - The majority of banks measure earnings risk to NII; some banks measure to NI also capturing risk to non-interest sources of revenue that are interest rate sensitive.
  - Banks measure EAR over multiple horizons including 12-month, 24-month, and longer horizons.
- As this chart indicates, 1,229 banks reported results of their +200 basis points shock.
  - The results for this scenario ranged from a 16% loss in annual NII to a 30% increase in NII.
  - The median, 25<sup>th</sup> and 75<sup>th</sup> percentiles indicate a much narrower band of results for the majority of the population (from a 3% loss to a 7% gain).

### National Statistics on Economic Value of Equity, Parallel Shocks

<u>Scenario</u>	<u>Number</u>	<u>Largest Loss</u>	<u>25th %ile</u>	<u>Median</u>	<u>75th %ile</u>	<u>Largest Gain</u>
-100	1,289	-17%	-3%	3%	9%	31%
100	1,306	-22%	-7%	-3%	2%	18%
200	1,343	-44%	-15%	-7%	2%	29%
300	1,338	-65%	-23%	-11%	1%	41%
400	1,193	-85%	-31%	-14%	1%	52%

- EVE is the primary long-term IRR assessment method. Banks assess EVE under a variety of rate scenarios with the majority using interest rate shocks. EVE measures the sensitivity of the present value of the current balance sheet to potential changes in interest rates.
- In this chart, 1,343 banks reported results from the +200 basis points shock.
  - The results ranged from a 44% loss in EVE to a 29% increase in EVE.
  - The median, 25<sup>th</sup> and 75<sup>th</sup> percentiles indicate a much narrower band of results for most of the population (a 15% loss to a 2% increase).

<b>National Statistics on +100 BPs Repricing Rates</b>				
<u>Deposit Type</u>	<u>Count</u>	<u>25th %ile</u>	<u>Median</u>	<u>75th %ile</u>
MMDA	1,282	25%	40%	55%
High Yield MMDA	240	35%	50%	76%
Now-Interest Checking	1,256	15%	23%	35%
Savings	1,282	15%	25%	37%
Other	197	20%	50%	75%

- NMD assumptions are a primary driver of IRR model results. Assumptions should reflect bank's profile and not rely on external proxies.
- Repricing assumptions, a measure of deposit volatility that identifies the change in deposit price for a given rate change, were collected for five deposit categories.
  - In the above chart, 1,282 banks reported MMDA repricing rates.
  - The median MMDA repricing rate was 40%, with half of the banks between the 25<sup>th</sup> and 75<sup>th</sup> percentile observations of 25% and 55%, respectively.
  - This indicates that in a +100 basis point rate move, the majority of banks expect MMDAs to reprice upward 40 basis points, much less than the full rate move.
- Data reveals a wide range of assumptions on deposit pricing volatility. Differences are a result of unique funding profiles in addition to different customer types and behaviors across geographies or depositor balances.

<b>National Statistics on Annual Deposit Decay Rates</b>				
<u>Deposit Type</u>	<u>Count</u>	<u>25th %ile</u>	<u>Median</u>	<u>75th %ile</u>
MMDA	1,149	12%	21%	36%
High Yield MMDA	213	11%	20%	36%
Now-Interest Checking	1,131	9%	15%	25%
Savings	1,151	9%	14%	23%
Non-Int Bearing	1,024	10%	15%	21%
Other	145	11%	17%	32%

- Decay assumptions, a measure of average life that shows the percentage of deposits that “run-off” or move out of a type of deposit, were collected for six different deposit categories.
  - In the chart above, for MMDAs, 1,149 banks reported decay rates over the full range of possibilities (0% to 100% decay).
  - The majority of banks reported decay rates falling within the 25<sup>th</sup> to 75<sup>th</sup> percentiles of 12% to 36% for a move of 100 basis points.
- Similar to repricing rates, banks report decay rates that are contingent on multiple factors.

The IRR data collection reflects a range of modeling processes to gauge exposure to earnings and capital from significant interest rate moves.

- Different processes are due to the complexity of banks' balance sheets and operations as well as the sophistication of modeling assumptions.
- It is difficult to predict how assets and liabilities will respond to an increase in interest rates.

Based on existing OCC IRR guidance (OCC Bulletin 2010-1) and FAQs (OCC Bulletin 2012-5), and the results of this IRR data collection, banks should consider the following factors when managing IRR:

- Determine areas for further research and analysis based on a comparison of each bank's modeled exposures and limits to the peer benchmarks.
  - Risk limits should protect earnings and equity, and exposures outside limits should be reviewed for potential action
  - Earnings-at-risk measurements should include a "static", no growth balance sheet throughout the modeling horizon; consider 24 month simulation to better capture embedded options risk and cash flow volatility
  - Evaluate large exposures to equity from rate shocks and potential mitigants
- Incorporate IRR modeling results into strategic planning.
- Evaluate balance sheet evolution over the interest rate cycle.
  - Stress NMD assumptions to identify the potential impact of depositor stability.
  - Consider liability mix reversion.