



Risk-Managed Internal Audit and Credit Review Expertise

NEWS

## **AuditOne Advisory: IRR Limits & Assumptions Analysis**

By AuditOne, LLC    July 2, 2019

### **AuditOne Advisory**

From Bud Genovese, Chairman

This advisory presents data that we have compiled to help you in management of your institution's Interest Rate Risk (IRR) process. AuditOne performs remote-based IRR audits each week at institutions in the Western US and around the nation. One of our IRR audit specialists, Kruskal Hewitt, has developed the following presentation of IRR data from a variety of financial institutions. Mr. Hewitt has been a risk and portfolio manager at international and large regional banks. I hope you find this information useful and please share with your colleagues having responsibilities related to IRR modeling and related controls, thank you, — Bud

### **AUDITONE LLC'S ANALYSIS OF IRR LIMITS AND ASSUMPTIONS 2016 – 2018**

AuditOne LLC is a leading provider of outsourced internal audit and related services for community banks, regional banks, credit unions and other financial institutions (FI). Please refer to our website for further information ([www.auditonellc.com](http://www.auditonellc.com)). Interest rate risk (IRR) is among AuditOne's audit areas, part of our ALM practice. US FI are expected to have an annual internal audit of their modeling, monitoring and control of IRR. Key to modelling IRR are various forward-looking assumptions, while controlling IRR requires appropriate limits

AuditOne has compiled (anonymously) data from 91 of our IRR clients on IRR limits and assumptions. We have used data from the most recent AuditOne IRR audit, no further back than 2016. AuditOne believes this database is relevant to our clients because it covers a relatively narrow range of asset size, geography and business lines. We update this analysis annually.

## DEFINITIONS

**NII:** Net interest income (NII) exposure is a current period (generally, at least one-year and two-year) estimate of interest-sensitive revenues and expenses under different interest rate scenarios.

**EVE:** Economic value of equity (EVE) is a theoretic valuation of the institution whereby cash flows from all assets and liabilities are discounted to their net present value (NPV), then summed. EVE captures long term risk in the balance sheet. Conceptually, EVE can be thought of as the sum of the NPV of all future NII.

**INSTANT vs. RAMPED INTEREST RATE SHOCKS (for NII):** The averages showing in the tables below are for instant (or immediate) rate shocks (81 clients) which assumes rates change instantly, as opposed to a gradual and even rate rise (ramp) spread over 12 months.

**BETA:** This represents the assumed portion of a market rate change that is reflected in administered rates – most importantly, deposit rates. For example, if the driver rate is Fed Funds and the beta for saving accounts is 45%, then for every 100 basis point rise in Fed Funds, savings account rates are assumed (predicted) to rise 45 basis points. Very few of our clients have different betas for down versus up rate movements. 19 FI assume a time lag in administered rate changes; most of these lags are 15-days and only three FI exceed 30-days.

**AVERAGE LIFE:** Non-maturity deposits (NMDs) have no contractual maturity and therefore form a stable, longer-term funding source. In order to get a meaningful estimate of EVE, NMDs are assigned an assumed average life by account type, reflecting an assumed run-off (or decay) rate.

**PARALLEL vs. NON-PARALLEL RATE SHOCKS:** The standard rate shock set-up assumes the yield curve shifts in parallel fashion over the entire maturity spectrum. However, many institutions also run simulations based on flatteners, steepeners and other non-parallel shocks. These can be helpful for assessing specific balance sheet vulnerabilities. But we advise against basing IRR limits on non-parallel shocks because shock details are difficult to define for measurement and control purposes.

**STATIC vs. DYNAMIC BALANCE SHEET:** For NII simulations, the balance sheet can either be static (constant), with replacement of run-off assets and liabilities, or it can incorporate change, both growth and shrinkage (e.g., budgeted balances). The 2010 Interagency Guidance specified that a static balance sheet be used, though simulations could also be run off a dynamic balance sheet.

## 2016 – 2018 DATABASE ANALYSIS

There are no major changes from the 2015-17 report to this 2016-18 report. It presents results across the entire database of 91 FI. We would be happy to recalculate any of the results for subsets of institutions based on asset size, primary regulator, and/or model vendor. Please contact David Kellerman or Jeremy Taylor at [Contact Us](#).

See the final section below for the key identifiers. Note, too, that we have presented only average (mean) figures in the tables below. We also computed medians, but these were very close to the corresponding averages.

### NII (one-year) simulation limits

| NII Shocks     | -200   | -100  | +100  | +200   | +300   | +400   |
|----------------|--------|-------|-------|--------|--------|--------|
| <b>Average</b> | -14.1% | -8.5% | -8.3% | -14.1% | -19.8% | -24.9% |

### EVE simulation limits

| EVE Shock      | -200   | -100   | +100   | +200   | +300   | +400   |
|----------------|--------|--------|--------|--------|--------|--------|
| <b>Average</b> | -18.8% | -11.4% | -11.7% | -19.6% | -27.2% | -33.7% |

### Beta assumptions for administered deposit rates

| Beta           | NOW   | Savings | MMA   | CD    |
|----------------|-------|---------|-------|-------|
| <b>Average</b> | 28.2% | 32.1%   | 48.0% | 78.8% |

### Average life assumptions (in months) for NMD

| Aver. Life     | NOW  | Savings | MMA  | DDA  |
|----------------|------|---------|------|------|
| <b>Average</b> | 65.4 | 58.7    | 49.3 | 60.9 |

### NII (one-year) simulation limits

| Instant | Ramp |
|---------|------|
| 81      | 0    |

Note: If asset and liability repricing is evenly spaced during the year (i.e., a ramped shock), then it has roughly half the impact on NII as an instantaneous shock at beginning of the year. This means that institutions running ramped shocks would be expected to have NII risk limits at roughly half the limits for instantaneous shocks.

### Parallel versus non-parallel shock analysis

| Parallel only | Non-Parallel only | Both |
|---------------|-------------------|------|
| 41            | 0                 | 40   |

## Balance sheet growth analysis

| Static only | Dynamic only | Both |
|-------------|--------------|------|
| 71          | 1            | 9    |

## DATABASE MIX SUMMARY

### Database mix by asset size (all dollar figures in millions)

| Count | Max      | Median | Min  | Total |
|-------|----------|--------|------|-------|
| 81    | \$11,400 | \$307  | \$24 |       |

### Database mix by primary regulator (all dollar figures in millions)

| Count | Max      | Median | Min   | Regulator |
|-------|----------|--------|-------|-----------|
| 58    | \$11,400 | \$307  | \$71  | FDIC      |
| 9     | \$1,023  | \$429  | \$194 | FRB       |
| 13    | \$1,069  | \$270  | \$24  | OCC       |
| 1     | na       | na     | na    | NCUA      |

### Database mix by model vendor (all dollar figures in millions)

| Count | Max      | Median | Min   | Vendor                            |
|-------|----------|--------|-------|-----------------------------------|
| 13    | \$1,023  | \$303  | \$89  | ALX Consulting                    |
| 5     | \$270    | \$227  | \$128 | Baker Group IRR Monitor           |
| 7     | \$11,400 | \$727  | \$230 | Darling Consulting BASIS          |
| 4     | \$834    | \$251  | \$172 | FIMAC Risk Analytics              |
| 10    | \$2,133  | \$383  | \$174 | Fiserv Sendero                    |
| 5     | \$858    | \$110  | \$24  | Plansmith Bankers GPS             |
| 8     | \$1,266  | \$378  | \$71  | Plansmith Compass                 |
| 11    | \$1,316  | \$241  | \$113 | Jack Henry Associates Profitstars |
| 11    | \$4,786  | \$429  | \$140 | ZMDesk / ZMOnline                 |
| 7     | \$5,960  | \$400  | \$112 | Other Systems (6)                 |

## AuditOne LLC – Company Overview

AuditOne LLC is a leading provider of risk management services to financial institutions in the Western US and nationally. Our sole focus enables us to deliver effective and efficient internal audit and credit review services. This exclusive focus translates into exceptional benefits to our financial institution clients. We have experience with all regulatory authorities and offer a full selection of audit services comprising BSA/Anti-Money Laundering Program, Automated AML System Validation, Asset/Liability Management (ALM) and IRR Audits, ADA Website Compliance Reviews, IT/Information Security/Cybersecurity, Network Penetration Tests, Credit Review/ALLL, ACH Rules

Compliance, Operations, Trust Audits, SOX/FDICIA Testing, and many specialty areas within each of these.

Our deep expertise is your edge. For more information on this article, or to receive a proposal for an ALM/ IRR Audit, please contact Jeremy Taylor, CEO, AuditOne LLC, at [Contact Us](#). In addition, contact Jeremy for information on how our other services can help reduce risk at your institution. Also, for more information about AuditOne LLC and all our audit services see [AuditOneLLC.com](http://AuditOneLLC.com)

AuditOne has been [audited for compliance](#) with the QAR requirements of the Institute for Internal Auditors (IIA).

[AuditOne, LLC | LinkedIn](#)

Address:  
6131 Orangethorpe Avenue, Suite 470  
Buena Park, CA 90620

Phone: 562.802.3581  
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