

RATE SENSITIVITY

Core Analysis Decision Factors

Examiners should evaluate the Core Analysis in this section to determine if an Expanded Analysis is necessary. Click on the hyperlinks found within each of the Core Analysis Decision Factors to reference the applicable Core Analysis Procedures.

Do Core Analysis and Decision Factors indicate that risks are appropriately identified, measured, monitored, and controlled?

C.1. Do the bank's assets, investments, deposits, other funding sources, and financial derivatives present a low or well-controlled level of interest rate risk? Refer to Core Analysis [Procedures #1-5](#).

C.2. Have adequate corporate governance processes (policies, procedures, risk limits, and strategies) been established? Refer to Core Analysis [Procedures #6-12](#).

C.3. Are internal measurement processes and systems adequate? Refer to Core Analysis [Procedures #13-16](#).

C.4. Are model inputs and management's assumption development process adequate? Refer to Core Analysis [Procedures #17-19](#).

C.5. Are the audit and internal control functions adequate? Refer to Core Analysis [Procedures #20-22](#).

C.6. Has an effective Independent Review function been established? Refer to Core Analysis [Procedures #23-26](#).

C.7. Are management information systems and reporting adequate? Refer to Core Analysis [Procedures #27-29](#).

C.8. Is the level of risk reasonable relative to capital and earnings levels? Refer to Core Analysis [Procedure #30-33](#).

C.9. Do the Board and senior management effectively supervise this area? Refer to Core Analysis [Procedure #34-38](#).

RATE SENSITIVITY
Core Analysis Procedures

Examiners are to consider the following procedures but are not expected to perform every procedure at every bank. Examiners should complete only the procedures relevant for the bank’s activities, business model, risk profile, and complexity. If needed, based on other identified risks, examiners can complete additional procedures. References to laws, regulations, supervisory guidance, and other resources are not all-inclusive.

Preliminary Review
<p>1. Review prior examination reports, supervisory reviews, and file correspondence to identify prior rate-sensitivity concerns. Also, review internal, or third party, audits and reviews to identify any concerns or recommendations.</p>
<p>2. Review board or committee minutes and information packets for evidence of oversight, responsibility, routine management reports, and any identified rate sensitivity concerns.</p>
<p>3. Determine whether there are any recent or planned changes in strategic direction and discuss with management the implications for rate sensitivity risks.</p>
<p>4. Review offsite analytical reports (FDIC: IRRSA) to develop a preliminary assessment of rate sensitivity trends and risks.</p>
<p>5. Review UBPR, Call Report, balance sheet, and income statement data to develop an initial rate sensitivity profile. Note common risk areas such as:</p> <ul style="list-style-type: none"> • Shifts in long term assets and long term liabilities; • Mortgage-loan exposure (direct or indirect through mortgage backed investments); • Mortgage servicing assets; • Significant securities depreciation; • Structured notes; • Fluctuations in non-maturity deposits; and • Hedging activities, such as rate swaps, forwards, futures, options, or other derivative products.
Policies, Procedures, and Risk Limits

6. Review rate sensitivity policies. Policy guidance may be incorporated in liquidity, loan, investment, interest rate risk (IRR), or other policies, but taken as a whole, should provide sufficient guidance to management relative to the board's risk tolerances and oversight responsibilities. Policy formality and sophistication will vary, depending upon the level of the bank's risk and the complexity of its holdings and activities. In general, satisfactory policies:

- **Assign authority and responsibility to an individual(s) or committee for establishing and maintaining an effective IRR management program that identifies, measures, monitors, and controls IRR within board-approved risk limits;**
- **Identify the types of instruments and activities that may be used to manage IRR exposure;**
- **Provide for comprehensive measurement systems that are commensurate with the size and complexity of the institution for valuing positions and assessing performance, including procedures for updating model scenarios and underlying key assumptions;**
- **Require regular, detailed reporting that informs management and the board of IRR exposures;**
- **Outline the process and responsibility for sensitivity testing of critical model assumptions;**
- **Require periodic back testing of IRR projections and analysis of significant variances;**
- **Establish earnings and capital exposure limits commensurate with the risk tolerance of the board;**
- **Require management to factor IRR into broader risk management considerations and strategic decisions to ensure interrelationships between IRR and other risks are considered and addressed;**
- **Require the board or a designated committee to periodically review and approve the policy, risk limits, and strategies;**
- **Assign responsibility for authorizing policy exceptions, and require documentation of the rationale for authorizing such exceptions; and**
- **Provide that the asset/liability committee (ALCO), or a similar committee, has sufficient representation across major functions that influence IRR exposure.**

7. Determine whether the board or a delegated committee oversees the establishment, approval, implementation, and annual review of IRR management strategies, policies, procedures, and limits (or risk tolerances).

8. Discuss IRR management processes and practices with management. Review ALCO meeting minutes and packages to evaluate the process. Potential topics for discussion include:

- **Lines of responsibility and authority for IRR exposure management;**
- **Development of IRR policies and practices;**
- **Adequacy of IRR measurement system used (e.g., gap, income simulation, economic value of equity);**
- **Assumptions used in the IRR measurement system (e.g., asset prepayments, deposit price sensitivity, decay rates, growth rates) and any adjustments to key assumptions;**
- **Management's understanding of the underlying analytics and methodologies of IRR models;**
- **Board/management understanding of model assumptions, particularly if developed by third parties;**
- **Strategies to manage IRR (e.g., cash flow or duration matching, altering balance sheet composition, hedging with derivatives);**
- **Technical expertise of staff relative to the complexity of products used and the complexity of the**

<p>IRR measurement system; and,</p> <ul style="list-style-type: none"> • Board and management understanding of the specific embedded risk characteristics of the institution, (e.g., basis risk, option risk).
<p>9. If IRR management processes include hedging with derivatives, determine whether policies outlining hedging strategies include:</p> <ul style="list-style-type: none"> • Requirements for analysis of market, liquidity, credit, and operating risks; • Requirements regarding the expertise/experience of personnel involved in implementing and monitoring derivative hedging strategies; • Permissible strategies and types of derivative contracts; • Risk limits for hedging activity such as position limits (gross and net), maturity parameters, and counterparty credit guidelines; • Names of individuals authorized to initiate hedging transactions and their limits of authority; • Requirements for monitoring hedging activity and ensuring activities fall within approved limits and lines of authority; and • Descriptions of how management will ensure compliance with technical accounting guidance that governs hedging activity, most notably ASC Topic 815.
<p>10. Determine whether management uses static balance sheet modeling to assess baseline IRR exposure. Refer to the 1996 Joint Agency Policy Statement on IRR and the 2010 FFIEC Advisory on IRR Management for further discussion of balance sheet modeling.</p>
<p>11. Determine whether management uses IRR modeling to evaluate large-scale shifts in strategies, product offerings, or significant concentrations.</p>
<p>12. Determine whether procedures and risk limits are reasonable relative to current economic conditions and the overall condition of the bank. Determine whether management:</p> <ul style="list-style-type: none"> • Evaluates the potential effect on income and capital levels when establishing risk limits; • Reviews limits at least annually (and more frequently if the bank’s financial condition, strategic direction, or products and services are changing); and • Considers the risks and potential rewards of adverse/favorable rate movements when establishing an IRR position or strategy.
<p>Measurement System Capabilities</p>
<p>13. Determine whether the measurement system contains the functionality (and is updated as needed) to adequately assess risk exposures.</p>

14. Determine whether the IRR measurement system captures and reports all material on- and off-balance sheet positions. Consider the level of detail in charts of account, data input, and output reports.
15. Determine whether the system measures the potential effect of changes in market rates on both earnings and capital.
16. Determine whether the IRR measurement system has capabilities to provide meaningful stress-test simulations applicable to the institution. Consider the following:
<ul style="list-style-type: none"> • Instantaneous and significant rate shocks (considering the current rate environment); • Substantial changes in rates over time (prolonged rate shocks exceeding periods of 1 year); • Changes in the relationships between key market rates (i.e., basis risk); • Various scenarios (e.g., base case, worst case, static, dynamic); and • Nonparallel yield curve shifts (e.g. steepened, flattened, and inverted yield curves).
Assumptions and Data Inputs
17. Assess management’s process for developing and reviewing key scenarios and assumptions. Consider the institution’s documentation, monitoring, and update procedures. Typical key assumptions include:
<ul style="list-style-type: none"> • Asset prepayment speeds, • Non-maturity deposit price sensitivities, • Non-maturity deposit decay rates or average life, and • Key/driver rates.
18. Review the reasonableness and support for management’s key assumptions.
19. Review the institution’s sensitivity analysis on key assumptions.
Internal Controls
20. Determine whether management established sufficient lines of authority and separation of duties, or comparable controls, over the development and use of measurement systems and monitoring tools.

21. Determine whether IRR reports are reviewed by senior management and the board at least quarterly.
22. Determine whether management complies with policy parameters and documents the reasons for variances, and any actions plans initiated. If applicable, discuss the board’s oversight and approval of variances and any related mitigating actions.
Audit or Independent Review
23. Determine whether management provides for an adequate audit of the IRR measurement process.
24. Determine whether the independent review includes an adequate scope (certain aspects of which may have been completed by internal audit or an external model validation). Adequate scoping generally includes an assessment of items such as the:
<ul style="list-style-type: none"> • Adequacy of, and compliance with, policies and procedures; • Suitability of the bank’s measurement system given the size and complexity of activities; • Appropriateness of rate scenarios used; • Validity of risk measurement calculations; and • Reasonableness and accuracy of assumptions and data inputs including back testing.
25. Ensure that the results of annual independent reviews are promptly reported to the board, or committee thereof. Determine whether management reviewed and reported the results of any validation performed on the IRR model used.
26. If recent reviews disclosed any deficiencies, or if back testing has shown past estimates deviated significantly from actual performance, determine whether management responses are reasonable and timely.
Reporting and Communication Systems
27. Determine whether internal reports provide sufficient information for ongoing IRR management decisions and for monitoring the results of those decisions. Reports should contain sufficient detail for the board and senior management to:

<ul style="list-style-type: none"> • Analyze IRR levels and trends and estimate the potential effect on earnings and capital; • Identify material risk exposures and sources; • Evaluate key assumptions, including interest rate forecasts, deposit behaviors, and loan prepayments; • Make pricing decisions; • Verify compliance with risk limits/policy guidelines and to monitor policy exceptions; • Assess the institution’s IRR sensitivity in base-case and changing-rate scenario, and • Assess important assumptions underlying the measurement systems.
<p>28. Determine whether interest rate risks are communicated to all relevant operational and oversight personnel.</p>
<p>29. Consider testing reports for accuracy by comparing results with regulatory reports and internal records.</p>
<p>Risk Exposure Considerations</p>
<p>30. Determine the level of IRR and assess the potential effect on the institution's risk profile. Consider IRR trends that, while still within established risk tolerances, may indicate an increasing risk profile.</p>
<p>31. Compare the earnings projections used in the IRR measurement systems to management’s budget. Determine the magnitude of any differences and the reason for the differences. Determine the extent to which management relies on IRR projections and uses them in strategic and capital planning.</p>
<p>32. Determine whether recent or anticipated changes or trends in the balance sheet composition alter the IRR profile relative to historical data. When significant structural changes have or are expected to occur, de-emphasize historical analysis and focus on current and forecasted balance sheet composition. Significant structural changes may include:</p> <ul style="list-style-type: none"> • Major shift in the maturity (repricing) characteristics of the investment portfolio, loans, borrowings, or deposit accounts; • Increased holdings of financial instruments such as mortgage securities, callable securities, fixed-rate residential loans, and structured notes; • Fundamental changes in liability mix between core deposits and other funding sources; • Unexpected changes in level or trend of securities appreciation and depreciation; and • Adoption of, or an increase in, the volume of derivative or hedging instruments.

<p>33. Analyze changes in the net interest margin and net operating income relative to:</p> <ul style="list-style-type: none"> • Market interest rate fluctuations, • Reliance on rate sensitive noninterest income activities (such as mortgage banking activities), • Earnings and capital levels, and • Strategies to manage the effect of the changes on earnings and capital.
<p>Oversight & Risk Mitigation</p>
<p>34. Determine whether the board understands and is regularly informed about the level and trend of IRR exposure. Consider the following board responsibilities:</p> <ul style="list-style-type: none"> • Setting the bank's tolerance level for interest rate risk, • Identifying lines of authority and responsibility for managing risk, • Ensuring adequate resources are devoted to IRR management, • Monitoring the overall IRR profile, and • Ensuring that IRR is maintained at prudent levels.
<p>35. Determine whether senior management ensures that board-approved strategies, policies, and procedures for managing IRR are appropriately executed within the designated lines of authority and responsibility. Consider the following management responsibilities:</p> <ul style="list-style-type: none"> • Implementing detailed reporting processes to inform senior management and the board of the level of IRR exposure; • Maintaining comprehensive systems and standards for measuring IRR, valuing positions, and assessing performance, including procedures for updating IRR measurement scenarios and key underlying assumptions driving the institution's IRR analysis; • Developing and implementing procedures that translate the board's goals, objectives, and risk limits into operating standards that are understood and followed by bank personnel; • Providing sufficient staff to operate measurement systems, including back-up personnel who possess requisite technical expertise; • Establishing adequate training and development programs; • Implementing internal controls over the IRR process; and • Ensuring independent reviews and validations of the IRR program are regularly completed.
<p>36. Determine whether historical performance indicates weakness in board and senior management oversight.</p>
<p>37. Determine whether the board effectively oversees and management effectively implements planned</p>

initiatives and strategies.
38. If risk limits were breached, determine what steps management took, or plans to take, to remedy, or mitigate exposures. If management decides against corrective action, determine whether such decisions are reasonable and appropriately reported and documented.
End of Core Analysis. If needed, Continue to the Expanded and Impact Analyses.