

**OMB No. 7100-0341**  
**Expiration Date: October 31, 2015**

**General Instructions for the Reporting of the  
Capital Assessments and Stress Testing information collection  
(FR Y-14A)**

This Report is required by law: section 165 of the Dodd-Frank Act (12 U.S.C. § 5365) and section 5 of the Bank Holding Company Act (12 U.S.C. § 1844). Public reporting burden for this information collection is estimated to vary from 907 to 1,289 hours per response, with an average of 983 hours per response, including time to gather and maintain data in the required form and to review instructions and complete the information collection. Comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing the burden, may be sent to Secretary, Board of Governors of the Federal Reserve System, 20th and C Streets, NW, Washington, DC 20551, and to the Office of Management and Budget, Paperwork Reduction Project (7100-0341), Washington, DC 20503.

## General Instructions for Preparation of the Annual Capital Assessments and Stress Testing Report FR Y-14A

The FR Y-14A report collects detailed data on bank holding companies' quantitative projections of balance sheet assets and liabilities, income, losses, and capital across a range of macroeconomic scenarios and qualitative information on methodologies used to develop internal projections of capital across scenarios. One or more of the macroeconomic scenarios includes a market risk shock that the bank holding companies (BHCs) will assume when making trading and counterparty loss projections. The Federal Reserve will provide details about the macroeconomic scenarios to the BHCs. The FR Y-14A report includes data schedules for Summary, Macro Scenario, Counterparty Credit Risk (CCR), Basel III and Dodd-Frank (Basel III), and Regulatory Capital Instruments.

### (1) Who Must Report

#### (i) Reporting Criteria

- a. Large BHCs that meet an annual threshold of \$50 billion or more in total consolidated assets, as defined by the capital plan rule (12 CFR 225.8), are required to submit the Capital Assessment and Stress Testing report to the Federal Reserve. The capital plan rule defines total consolidated assets as the average of the company's total consolidated assets over the course of the previous four calendar quarters, as reflected on the BHC's consolidated financial statement for bank holding companies (FR Y-9C). The calculation shall be effective as of the due date of the bank holding company's most recent FR Y-9C.
- b. Separate [FR Y-14A annual](#) schedules must be reported for each scenario. All [FR Y-14A annual](#) schedules are required to be reported by all BHCs with the exception of the CCR schedule, the Trading and CCR worksheets of the Summary schedule, and Historical Capital worksheets of the Operational Risk schedule.
  - 1) **CCR schedule and Trading and CCR worksheets:** Only BHCs with greater than \$500 billion in total consolidated assets who are subject to the amended market risk rule (12 CFR Parts 208, Appendix, E and 225, Appendix E) must submit this schedule and worksheets.
  - 2) **Operational Risk Historical Capital worksheet:** BHCs subject to the Board's advanced approaches risk-based capital rules (12 CFR part 225, Appendix, G) must submit the OpRisk Historical Capital worksheet of the FR Y-14A Operational Risk Schedule.
- c. Certain data elements within the [FR Y-14A annual](#) schedules are subject to materiality thresholds. The instructions to these data schedules provide details on whether or

not a BHC must submit a specific data element.

**(ii) Exemptions**

- a. Only BHCs that did not meet the reporting criteria listed in paragraph one above are exempt from reporting.

**(2) Where to Submit the Reports**

- (i) All BHCs subject to these reporting requirements must submit completed reports electronically. BHCs will be provided information on how to transmit data to the FR Y-14 IntraLinks Collaboration website.

**(3) When to Submit the Reports**

- (i) BHCs must file the FR Y-14A report according to the appropriate time schedules described below:
- a. ~~All FR Y-14A schedules will be due on or before January 5 (unless that day falls on a weekend (subject to timely filing provisions)).~~ With the exception of the CCR schedule and the Trading and CCR worksheets of the Summary schedule, the data collected will be reported as of September 30. The as-of-date for the CCR schedule and the Trading and CCR worksheets of the Summary schedule will be between October 1 and December 1 of that calendar year.<sup>2</sup> ~~All schedules will be due on or before January 5 (unless that day falls on a weekend (subject to timely filing provisions)).~~
- b. The Summary and the Macro Scenario schedules of the FR Y-14A related to the mid-cycle company-run stress test will be due on or before July 5 (unless that day falls on a weekend (subject to timely filing provisions)). The data collected will be reported as of March 31.
- ~~c.~~ **General Timing:** If the submission date falls on a weekend, the data must be received on the first business day after the weekend. No other extensions of time for submitting reports will be granted. The data are due by the end of the reporting day on the submission date. Early submission aids the Federal Reserve in reviewing and processing data and is encouraged.

**(4) How to Prepare the Reports**

- (i) **Applicability of GAAP, Consolidation Rules, and Other Instructional Guidance**
- a. BHCs are required to prepare and file the FR Y-14A schedules in accordance with generally accepted accounting principles (GAAP) and these instructions. The financial records of the BHCs should be maintained in such a manner and scope to ensure the FR Y-14A is prepared in accordance with these instructions and reflects a fair presentation of the BHCs' financial condition and assessment of performance under stressed scenarios.
- b. **Rules of Consolidation:** Reference the FR Y-9C General Instructions for a discussion of the rules of consolidation.

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<sup>2</sup> BHCs are permitted to submit the CCR schedule and the Trading and CCR worksheets of the Summary schedule as of the most recent date that corresponds to the regular reporting cycle that falls prior to the specified as-of date. That as-of date will be communicated to the BHCs by December 1.

c. BHCs should review the following published documents (in the order listed below) when determining the precise definition to be used in completing the schedules:

- 1) The FR Y-14A instructions;
- 2) The latest available FR Y-9C instructions published on the Federal Reserve's public web site: <http://www.federalreserve.gov/reportforms>;

**(ii) Confidentiality:** As these data will be collected as part of the supervisory process, they are subject to confidential treatment under exemption 8 of the Freedom of Information Act. 5 U.S.C. 552(b)(8). In addition, commercial and financial information contained in these information collections may be exempt from disclosure under Exemption 4. 5 U.S.C. 552(b)(4). Disclosure determinations would be made on a case-by-case basis.

**(iii) Amended Reports**

- a. The Federal Reserve will require the filing of amended reports if previous submissions contain significant errors. In addition, a reporting institution must file an amended report when it or the Federal Reserve discovers significant errors or omissions subsequent to submission of a report. Failure to file amended reports on a timely basis may subject the institution to supervisory action.

**(iv) Questions and Requests for Interpretations:** BHCs should submit any questions or requests for interpretations by email to [info@CCAR.frb.org](mailto:info@CCAR.frb.org).

# Scenario Schedule Instructions

## Introduction

These instructions provide guidance for reporting the variables used in the firm-defined macroeconomic scenarios underlying the projections of losses, revenue, and capital. These scenarios include the supervisory baseline scenario, supervisory adverse scenario, supervisory severely adverse, BHC baseline scenario, and BHC stress scenario, as well as, any additional scenarios generated by the firm or supplied by the Federal Reserve. (Additional Scenario #1; Additional Scenario #2; etc.)<sup>1</sup>

The template consists of three worksheets that each BHC must complete. Additional worksheets are provided if the BHC generated additional variables for the supervisory scenarios or reported additional scenarios beyond the BHC baseline and BHC stress scenarios. The worksheets in the template are:

**Scenario Variable Definitions:** This worksheet should be used to list and define the variables included in the BHC baseline and BHC stress scenarios, as well as, any additional BHC scenarios reported.

- The worksheet provides space for the supervisory baseline scenario, supervisory adverse scenario, supervisory severely adverse scenario, BHC baseline scenario, and BHC stress scenario, as well as, space for an additional scenario. The sections for the BHC baseline and BHC stress scenarios must be completed. If no additional scenarios are provided, then this section of the worksheet may be left blank. If one or more additional scenarios are provided, then a section should be created for each additional scenario and labeled accordingly (Additional Scenario #1; Additional Scenario #2; etc.)
- For each scenario, list the variables included in the scenario in the column titled "Variable Name."
- Variable definitions should be provided in the column titled "Variable Definition." Variable definitions should include a description of the variable (e.g., "Real GDP") and the denomination and/or frequency of the variable (e.g., "Billions of 2005 dollars" or "in percent, average of monthly values").
- For convenience, the worksheet provides space for 10 variables per scenario, but any number of variables may be reported, depending on the variables actually used in the scenario. Extra lines may be created as needed. The same variables do not necessarily have to be included in each scenario.
- The last nine columns in the scenario projection worksheets are marked PQ 1 through PQ 9. PQ stands for projected quarter. PQ 1 through PQ 9 are nine quarterly projections over which the planning horizon extends.
- Firms should include all economic and financial market variables that were important in projecting results, including those that affect only a subset of portfolios or positions. For example, if asset prices had a meaningful impact, the assumed level of the equity market and interest rates should be included, or if bankruptcy filings affect credit card loss estimates, then

<sup>1</sup> For example, required scenarios for annual and mid-cycle company-run stress tests are outlined in Sections 252.144 (Annual stress test) and 252.145 (Mid-cycle stress test) of Regulation YY (12 CFR 252) Supervisory and Company-Run Stress Test Requirements for Covered Companies. In addition, required scenarios for the Comprehensive Capital Analysis and Review (CCAR) have been outlined in summary instructions and guidance published by the Federal Reserve. See for example <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20121109b1.pdf>

the assumed levels of these should be reported.

- Firms should also include any variables capturing regional or local economic or asset value conditions, such as regional unemployment rates or housing prices, if these were used in the projections.
- Firms should include historical data, as well as projections, for any macroeconomic, regional, local, or financial market variables that are not generally available. Historical data for these variables can be included in a separate worksheet.

**Supervisory Baseline Scenario:** This worksheet should be used to report the values of any additional variables generated for the supervisory baseline scenario. For the mid-cycle company-run stress test, this worksheet should remain blank.

**Supervisory Adverse Scenario:** This worksheet should be used to report the values of any additional variables generated for the supervisory adverse scenario. For the mid-cycle company-run stress test, this worksheet should remain blank.

**Supervisory Severely Adverse Scenario:** This worksheet should be used to report the values of any additional variables generated for the supervisory severely adverse scenario. For the mid-cycle company-run stress test, this worksheet should remain blank.

**BHC Baseline Scenario:** This worksheet should be used to report the values of the variables included in the BHC baseline scenario.

**BHC Stress Scenario:** This worksheet should be used to report the values of the variables included in the BHC stress scenario. For the mid-cycle company-run stress test, this worksheet should be used to report the values of the variables included in the BHC adverse scenario.

**Additional Scenario #1/#2/etc.:** These worksheets should be used to report the values of the variables included in any additional scenarios. For the mid-cycle company-run stress test, an additional worksheet should be used to report the values of the variables included in the BHC severely adverse scenario.

--Please create a separate worksheet (tab) for each additional scenario. Name the worksheets "Additional Scenario #1;" "Additional Scenario #2;" etc.

**All Scenarios:** The following applies to all of the Scenario tabs:

--The variables should be the same (and have the same names) as the variables listed in the corresponding sections of the *Scenario Variable Definitions* Worksheet.

--List quarterly values for the variables starting with the last realized value (3Q 2012) through the end of the forecast horizon (4Q 2014).

--Please enter all variables as levels rather than as changes or growth rates (for instance, the dollar value of real GDP rather than the GDP growth rate).

## FR Y-14A: Summary Schedule Instructions

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## I. Overview

### A. Summary

This document contains instructions for the FR Y-14A Summary schedule. The schedule includes data collection worksheets related to the following:

1. Income, Balance Sheet, and Equity/Capital Statements;
2. Retail;
3. Securities;
4. Trading;
5. Counterparty Credit Risk;
6. Operational Risk; and
7. Pre-Provision Net Revenue (PPNR).

The bank holding company (BHC) should submit a **separate** Summary schedule for **each** scenario (Use the “Save As” function of the original Excel workbook provided to the institution.). Name the file using the following style: **FR\_Y-14A\_SUMMARY\_BHCRSSD\_BHCMNEMONIC\_SCENARIO.xlsx**.

In the tab labeled *Summary Submission Cover Sheet*, include:

- The name and RSSD ID of the submitting BHC;
- The date of submission to the Federal Reserve;
- Which scenario this Summary Schedule applies to (choose from the drop-down box); and
- A brief description of the scenario.

### B. Technical Details

The following instructions apply to all worksheets within the Summary schedule.

- Do not enter any information in gray highlighted cells with embedded formulas.
- Ensure that any internal consistency checks are correct before submission.
- Report income and loss data on a quarterly basis, and not on a cumulative or year-to-date basis.
- Report dollar values in millions of US dollars (unless specified otherwise).
- For worksheets that collect non-scenario dependent data (e.g. the historical data collection on the Retail Repurchase worksheet), report information for the Baseline Scenario only.
- The “projection horizon” refers to nine quarters starting with the fourth quarter of the reporting year (e.g., from fourth quarter of 2012 to fourth quarter of 2014).
- Many column headings refer to PQ 1 through PQ 9. PQ stands for projected quarter. PQ 1 through PQ 9 are nine quarterly projections over which the planning horizon extends. In some cases the projected quarters will extend beyond the nine-quarter planning horizon (as in the case of projected future losses charged to the repurchase reserve), necessitating PQ 10 or more.
- If there are no data for certain fields, then populate the fields with a zero (0). If the fields are optional and a BHC chooses not to report data, leave the fields blank.

### C. Supporting Documentation

For each part of the Summary Schedule, submit supporting documentation that clearly describes the methodology used to produce the BHC's projections. In the documentation, include a description of how the BHC translated the macroeconomic factors (or market shock for the Trading and Counterparty Risk sections) associated with the scenario into the BHC's projections and technical details of any underlying statistical methods used, including information on model validation and independent review. Where judgment is an essential part of the forecast, include documentation that demonstrates rationale and magnitude, as well as the process involved to ensure consistency of projections with scenario conditions. Furthermore, include thorough discussion of any material deviations from the instructions and how the materiality of such deviations was decided upon. Additional information to be included in the documentation is described below and in more detail in each section of the schedule instructions.

### **Model Risk Management Policy**

BHCs should include in their submission their model risk management policies, which should provide the BHC's general framework for model development, calibration, validation, escalation, and oversight by specifying criteria and controls across various stages of the model lifecycle (Identification; Inventory/Tracking; Development and Documentation; Independent Validation; Approval for Implementation; Ongoing monitoring; Model Retirement).

### **Documentation of Risk Measurement Practices**

Capital plan submissions should include documentation of key risk identification and measurement practices supporting the BHC-wide stress testing required in the capital plans. BHC submissions should also include internal documentation describing the BHC's framework for development, calibration, estimation, validation, oversight, and escalation of key risk identification and measurement practices. As noted above, an assessment of the robustness of these practices is a critical aspect of the supervisory assessment of capital adequacy processes.

### **Documentation of Internal Stress Testing Methodologies**

BHCs should include in their capital plan submissions thorough documentation that describes and makes transparent key methodologies and assumptions for performing stress testing on their portfolios. In particular, the design, theory, and logic underlying the methodology should be well documented and generally supported by published research and sound industry practice. The documentation should include

- discussion of historical data set construction, including data sources, adjustments to the data set, and documentation validating the use of any external data;
- rationale for portfolio segmentation and a discussion on how a particular methodology and model captures the key characteristics and the unique risk drivers of each portfolio segment;
- an explanation of the theory, logic, and design behind each model;
- a description of model selection and specification, variable choice, and estimation methodology, including the statistical results used to arrive at the selected model;
- an analysis of the model output, including the congruence of inputs with the assumed economic scenario, the justification of any qualitative adjustment, along with the statistical analysis used to support the model output;
- a model inventory log specifying, at a minimum, the model's version, the date of model approval, the date of its last revision, its intended use, the name of its model owner and developer, the model's priority, the date of the model's last independent validation, and the

date of the model's next expected independent validation.

Documentation should also include mapping that clearly conveys the methodology used for each FR Y-14A product line under each stress scenario. If third-party models are used, the documentation should describe how the model was constructed, validated, and any known limitations of the model.

Documentation should clearly describe assumptions concerning new growth and changes to credit policy. Supporting documentation should transparently describe internal governance around the development of comprehensive capital plans. Documentation should demonstrate that senior management has provided the board of directors with sufficient information to facilitate the board's full understanding of the stress testing used by the firm for capital planning purposes.

### **Documentation of Assumptions and Approaches**

BHCs should provide credible support for all assumptions used to derive loss estimates, including assumptions related to the components of loss, severity of loss, and any known weaknesses in the translation of assumptions into loss estimates. BHCs should demonstrate that these assumptions are clearly conditioned on the stated macroeconomic scenario, are consistent with stated business strategies, and reflect the competitive environment of each business line. If firm-specific assumptions (other than broad macroeconomic assumptions) are used, also describe these assumptions and how they relate to reported projections. If the BHC models rely upon historical relationships, provide the historical data and clearly describe why these relationships are expected to be maintained in each scenario. The impact of assumptions concerning new growth or changes to credit policy on forecasted loss estimates relative to historical performance should be clearly documented.

While judgment is an essential part of risk measurement and risk management, including for loss forecasting, BHCs should not be over-reliant on judgment to prepare their loss estimations without providing documentation or evidence of transparency and discipline around the process. BHCs should adequately support their judgments and should ensure that judgments are in line with scenario conditions. BHCs should be consistently conservative in the assumptions they make to arrive at loss rates. Where appropriate, documentation should quantify the impact of qualitative adjustments from modeled output.

Supporting documentation also should transparently describe internal governance around the development of stress testing models and methodologies, and discuss how the stress testing methodologies have been implemented in the BHC's existing firm-wide risk management practices. Furthermore, documentation should include a discussion of the stress testing outcomes in terms of the nature of the portfolio and the modeled scenario. The BHC should demonstrate that senior management provided the board of directors with sufficient information to facilitate the board's full understanding of the stress testing used by the firm for capital planning purposes and allow for the appropriate level of challenge of assumptions and outcomes.

### **Validation and Independent Review**

In addition to being properly documented, models employed by BHCs (either developed internally or supplied by a vendor) should be independently validated or otherwise reviewed in line with model risk management expectations presented in existing supervisory guidance, including Supervisory Letter SR 11-7.

BHCs should also provide their model validation policy. Institutions should provide model validation documentation on the following elements: conceptual soundness, inputs, transparency, implementation, reporting, model robustness and limitations, use of expert judgment, exception

reports, outcomes analysis (backtesting and/or benchmarking) and qualitative adjustments. Validation documentation should include the BHC's assessment of the vulnerability of their models to error, an understanding of any of their other limitations, and consideration of the risk to the BHC should estimates based on those models prove materially inaccurate. Specifically, validation reviews should examine the efficacy of model use in both base case and stress scenarios. While the use of existing risk measurement models and processes provides a useful reference point for considering stress scenario potential loss estimates, validation efforts should consider whether these processes generate outputs that are relevant in a stressful scenario or if the use of models should be supplemented with other data elements and alternative methodologies. To the extent available, the above items should also be provided for any vendor supplied models used by the BHC, along with any third party validation documentation available for the vendor supplied model.

## **II. Income Statement, Balance Sheet, and Capital**

### **A. Income Statement worksheet**

The Income Statement worksheet collects projections for the main components of the income statement. Federal Reserve Micro Data Reference Manual (MRDM) codes are provided in the 'Notes' column for many of the line items.<sup>1</sup> Where applicable, use the definitions for the FR Y-9C line items corresponding to the MDRM code. For each scenario used, input the loan loss projections for the various line items in this worksheet. The BHC should include losses tied to the relevant balances reported on the Balance Sheet worksheet. Losses associated with accrual loans should be reported in the appropriate line items under the "Accrual Loan Losses" section and any losses due to changes in the fair value of assets that are held for sale or held for investment under the fair value option should be reported in the appropriate line items under the "Losses Associated With Loans Held for Sale and Loans Accounted for Under the Fair Value Option" section.

For Corporate and CRE loans, if an MDRM number is not provided, use the same definitions as provided in the FR Y-14Q Corporate and Commercial Real Estate schedules. For credit card loans, use the same definitions as provided in the FR Y-14M Credit Card schedule. The Repurchase Reserve/Liability for Mortgage Reps and Warrants line items are included to provide information on the expected evolution of any reserve or accrued liability that has been established for losses related to sold or government-insured mortgage loans (first or second lien). Losses charged to this reserve can occur through contractual repurchases, settlement agreement, or litigation loss, including losses related to claims under securities law or fraud claims; it is likely that most losses charged to this reserve will come through contractual repurchases or settlements. Quarterly reserve/accrued liability levels and quarterly provisions and net charge-offs to the reserve/accrued liability should be reported as forecast under the applicable scenario. To ensure consistency across the sheets of each Y-14A summary workbook, the Provisions during the quarter line is linked to the PPNR Projections Worksheet rows where BHCs are expected to report any provisions to the Repurchase Reserve/Liability for Mortgage Reps and Warrants. For the same reason, the Net charges during the quarter line is linked to Table G.3 in the Retail Repurchase Worksheet.

### **B. Balance Sheet worksheet**

For each scenario used, input the loan balance projections in the various line items in this worksheet. Balances for loans held in the accrual loan portfolio should be reported in the appropriate wholesale line items in the "Accrual Loans" section and balances for held for sale or held for investment under the fair

<sup>1</sup> Each MDRM code is associated with a specific line item (data cell) on the FR Y-9C report. See <http://www.federalreserve.gov/reportforms/mdrm/> for a list of MDRM codes and data descriptions.

value option should be reported in the appropriate line items in the “Loans Held for Sale and Loans Accounted for Under the Fair Value Option” section. MDRM codes are provided within the ‘Notes’ column for many of the line items. When applicable, the definition of the BHC’s projections should correlate to the definitions outlined by the corresponding MDRM code within the FR Y-9C report. Domestic refers to portfolios in the domestic US offices (as defined in the FR Y-9C report), and International refers to portfolios outside of the domestic US offices.

Explain any M&A and divestitures included and how they are funded (liabilities, asset sales, etc.)

### **C. Capital worksheet**

The Capital worksheets collect projections of the main drivers of equity capital and the key components of the regulatory capital schedule. MRDM codes are provided in the ‘Notes’ column for many of the line items.

The schedule collects projections of components of equity capital and regulatory capital (as reported in FR Y-9C schedules HI-A and HC-R), components of assets and liabilities (as reported in schedules HC, HC-F, HC-G), and deferred tax asset items. The projections should follow the definitions currently used in the FR Y-9C report and found in the Federal Reserve’s risk based capital guidelines. All data collected in the Capital worksheet should be reported on a quarterly basis and not on a year-to-date, cumulative basis.

BHCs are required to provide projections of Tier 1 common capital, which is defined as Tier 1 capital less non-common elements<sup>2</sup>, including perpetual preferred stock and related surplus, minority interest in subsidiaries, trust preferred securities, and mandatory convertible preferred securities.

The projections should clearly show any proposed capital distributions or other scenario-dependent actions that would affect the BHC’s regulatory capital, including any assumptions required under the Board’s regulations.

Projections of risk-weighted assets – RWA (line item 33) must be based on the Board’s capital rules in effect in a given quarter. For example, for the first quarter of the planning horizon associated with the FR Y-14A with the September 30, 2012 as-of date, a BHC subject to the Board’s market risk rule must report market RWAs in a manner consistent with the market risk capital rule in effect on December 31, 2012.<sup>3</sup> Similarly, for the second through ninth quarters of the planning horizon associated with the FR Y-14A with the September 30, 2012 as-of date, a BHC subject to the Board’s market risk rule must report market RWAs in a manner consistent with the final market risk capital rule that becomes effective on January 1, 2013.<sup>4</sup>

Two worksheets are provided, labeled “Capital Worksheet – CCAR” and “Capital Worksheet – DFAST.” BHCs should fill out the first worksheet (CCAR) using assumptions about capital distributions as outlined

<sup>2</sup> Non-common elements should include the following items captured in the FR Y-9C: Schedule HC, line item 23 net of Schedule HC-R, line item 5; and Schedule HC-R, line items 6a, 6b, and 6c.

<sup>3</sup> See 12 CFR part 225, Appendix E.

<sup>4</sup> See 77 Federal Register 53060 (August 30, 2012).

in the “Comprehensive Capital Analysis and Review 2013 Summary Instructions and Guidance.”<sup>5</sup> BHCs should fill out the second (DFAST) using assumptions about capital distributions as outlined in the final rule “Supervisory and Company-Run Stress Test Requirements for Covered Companies.”<sup>6</sup> BHCs should only fill out the worksheets for each scenario as specified by the CCAR instructions and final rule; the worksheets should be left blank if not required for that scenario.

#### **D. Supporting Documentation**

##### **Income Statement, Balance Sheet, and Capital Worksheets**

BHCs should submit supporting documentation that clearly describes the methodologies used to make the loss, reserve change, and revenue projections that underlie the pro forma projections of equity capital. The supporting document should be titled

**BHCRSSD\_BHCMNEMONIC\_CAPITAL\_METHODODOLOGY\_YMMMDD**. Each BHC should include in its supporting documentation a clear description of how the various balance sheet and income statement line items were reported.

Provide information on the specific assumptions used to calculate regulatory capital, including a discussion of any proposed capital distributions. When appropriate, clearly state assumptions related to the corporate tax rate and the evolution of the deferred tax assets. In situations where the BHC chooses not to project components of the balance sheet, those components should be held constant at the last current level and the BHC should explain why the zero delta assumption is appropriate in the given scenario.

BHCs should submit any other information and documentation necessary to support or understand its capital calculations. For example, a BHC could show the calculations related to the projections of the deferred tax asset or servicing assets that may be disallowed for regulatory capital purposes. Where applicable, BHCs should link the additional supporting documentation to the Summary Memo of Capital Methodology and Assumptions and the Capital worksheet.

### **III. Retail**

Throughout the retail-related worksheets, Domestic refers to portfolios in the domestic US offices (as defined in the FR Y-9C report), and International refers to portfolios outside of the domestic US offices.

#### **A. Retail Balance and Loss Projections worksheet**

The Retail Balance and Loss Projections worksheet collects projections of business-line level loan balances and losses on BHCs’ accrual loans only.

- Balances: According to FR Y-9C definition (end of quarter levels). Where requested, please segment the total balances reported by vintage. Balances should be classified according to the origination vintage of the account with which the balance is associated.
- New Originations: Total dollar amount of new originations net of sales to Agencies. Only include

<sup>5</sup> Available at <http://www.federalreserve.gov/bankinfo/ccar.htm>.

<sup>6</sup> See 77 Federal Register 62378 (October 12, 2012).



originations you expect to hold in portfolio.

- Paydowns: Total dollar of repayments received in the given quarter.
- Asset Purchases: Total dollar of assets purchased in the given quarter.
- Asset Sales: Total dollar of assets sold in the given quarter.
- Loan Losses: Total dollar of loan losses recognized in the given quarter.
- Cumulative Interim Loan Losses – Non-PCI: The total unpaid principal balance that has been charged-off on loans in the segment through Q3 of the reporting period on non-PCI loans. Interim charge-offs include all cumulative partial chargeoffs/write-downs for loan that have not been fully charged-off or otherwise liquidated.
- Cumulative Interim Loan Losses – PCI: The total unpaid principal balance that has been determined to be uncollectible through Q3 of the reporting period and for which the non-accretable difference or ALLL has been used to absorb the uncollectible amount. The amounts reported in this line should be consistent with the Non-Accretable Difference Remaining and other information reported on the ASC 310-30 worksheet. As above, this measure should not include liquidated loans.
- Reporting of projections for credit cards should be based on all open accounts (active + inactive), but not charged-off accounts.

## **B. Retail Repurchase Worksheet**

The Retail Repurchase worksheet collects data on loans sold by the BHC that may be subject to repurchase risk due to breaches of representations and warranties made during the sale of the loans. It also collects data on loans insured by the US Government for which the insurance coverage could be denied if loan defects are identified. Information about loans sold between first quarter 2004 and third quarter 2012 should be aggregated and reported in the following categories on Tables A-F:

- Tables A—Loans Sold to Fannie Mae;
- Tables B—Loans Sold to Freddie Mac;
- Tables C—Loans Insured by the US Government (e.g. FHA, VA): loans (whether on balance sheet or in a GNMA security) insured by the US government and subject to a denial of insurance payment if certain defects are discovered;
- Tables D—Loans Securitized with Monoline Insurance: loans packaged into a securitization and wrapped with monoline insurance. If it cannot be identified whether a given loan is monoline insured, include the loan in this category;
- Tables E—Loans Securitized without Monoline Insurance: loans packaged into a securitization but not wrapped with monoline insurance;
- Tables F—Whole Loans Sold: loans sold as whole loans to parties other than Fannie Mae or Freddie Mac, even if the whole loans were subsequently sold to Fannie Mae or Freddie Mac.

Please report information aggregated by vintage for each of the data fields below. In cases where the data may not be available by vintage, report the data in the Unallocated column. It is expected that use of the Unallocated column will be very limited. Any data reported in the Unallocated column will be treated with conservative assumptions by the Federal Reserve. Loans that have been sold, repurchased and then sold again should be reported in the most recent year of sale.

For row variables described below with the note *Excluding Exempt Population*, the data submitted

should exclude any loans for which the BHC has no risk of repurchase liability because of settlement or

previous repurchase. Only exclude finalized settlements; any loans subject to a pending settlement should be included on this worksheet. Also exclude loans for which a repurchase request has been made and subsequently rescinded. Loans paid in full are not part of the exempt population unless they satisfy the exemption criteria defined above.

For each set of tables A-F, please complete Table X.1 for all loans for which the outstanding UPB and delinquency information requested in Table X.1 is available. If the requested outstanding UPB or delinquency information is not available, please complete Table X.2 instead. Due to the missing data associated with loans reported in Table X.2, loans in this population will be treated with conservative assumptions. Tables X.1 and X.2 should be mutually exclusive.

The row variables for each table should be filled out as follows:

- Original UPB: The original unpaid principal balance (UPB) of all of the loans, including closed loans;
- Original UPB (Excluding Exempt Population): The original UPB of the loans, including closed loans but excluding the exempt population as defined above;
- Outstanding UPB (Excluding Exempt Population): The outstanding UPB as of September 30 of the reporting year, excluding the exempt population as defined above;
- Delinquency Status as of 3Q (Excluding Exempt Population): Report the data as of September 30 of the reporting year, excluding the exempt population as defined above. The sum of the four delinquency categories listed below should equal the outstanding UPB reported for that vintage.
  - Current: The UPB of loans less than 30 days past due;
  - Past due 30 to 89 days: The UPB of loans 30-89 days past due;
  - Past due 90 to 179 days: The UPB of loans 90-179 days past due;
  - Past due 180+ days: The UPB of all loans that are 180 days or more past due and have not yet been fully charged-off;
- Net Credit Loss Realized to-date (Excluding Exempt Population): Cumulative net credit losses realized by investors in the loans through September 30 of the reporting year, excluding the exempt population as defined above;
- Repurchase Requests Outstanding (Excluding Exempt Population): The UPB of loans for which a buyer has requested a repurchase but a resolution had not been reached as of September 30 of the reporting year. No loans that belong in this row will fit the definition of the exempt population, so this variable is by definition exclusive of the exempt population as defined above;
- Loss to-date Due to Denied Insurance (applicable to Table C only): Losses realized through September 30 of the reporting year due to insurance claims denied by the US Government due to an identified defect on the loan in question;
- Estimated Lifetime Net Credit Losses (Excluding Exempt Population): The firm's estimate of lifetime net credit losses by investors in the loans (inclusive of net credit losses realized-to-date) under the scenario in question, excluding from the estimate losses on the exempt population as defined above;
- Projected Future Losses to BHC Charged to Repurchase Reserve (Excluding Exempt Population): Lifetime future losses related to sold or government-insured loans under the scenario in question that the BHC expects to charge through its repurchase reserve.

In Table X.3, please distribute the projected future lifetime losses that would be charged-off through the repurchase reserve under each scenario, as defined above, over the quarters displayed in the column headers. For each Table A-F, the sum of the projected future losses in Table X.3 expected to be charged

off to the repurchase reserve should equal the sum of the projected future losses expected to be charged off through the repurchase reserve in Tables X.1 and X.2. The Projection Validity Check cells will read "TRUE" when these projected losses are filled out correctly. Further, the sum of the projected future losses reported in Tables A.3-F.3 is calculated in table G.3. The sum of losses expected to be charged to the repurchase reserve is linked to the net charge-off lines in the Repurchase Reserve on the Income Statement to ensure consistency across the sheets of the Y-14A summary workbook.

### **C. ASC 310-30 worksheet**

The Retail ASC 310-30<sup>7</sup> worksheet collects information and projections on the BHCs' retail purchased credit impaired (PCI) portfolio. Provide actual information<sup>8</sup> for the third quarter of the reporting period and projected information for the future quarters.

*Submit the information requested by product, as segregated on the worksheet. In the event that a firm has ASC 310-30 pools that include more than one of the products provided on the worksheet, please allocate the data between the products in question and provide documentation for the methodology you used for the allocation.*

**1. Carry Value:** The carry value of the ASC 310-30 purchased impaired loans as reported on the balance sheet. Carry value should not reflect any allowance for loan losses that may be in place for the PCI loans being reported, consistent with the instructions for Y-9C item HC-C M5(b).

**2. Allowance:** The amount of any allowance for loan losses that has been established for the PCI loans.

**3. Net Carry Value:** Net Carry Value: The carry value less any allowance. This field is automatically calculated.

**4. Unpaid Principal Balance:** Total contractual Unpaid Principal Balance of ASC 310-30 (SOP 03-3) PCI loans as of quarter-end.

**5. Initial Day 1 Non-Accrutable Difference to Absorb Cash Flow Shortfalls on PCI Loans:** The original Day 1 full non-accrutable difference to absorb amounts determined to be uncollectible on PCI loans when the PCI portfolio was acquired. Please specify if this includes principal only or principal and interest. Provide only for the first quarter on the reporting schedule.

**6. Quarter Ending Non Accrutable Difference (NAD):** The amount of the Day 1 NAD remaining, net of the amount allocated to offset 'Charge Offs to Date' (provided in Line 7) and any amounts reclassified to accrutable yield.

<sup>7</sup> Accounting Standards Codification (ASC) Subtopic 310-10, Receivables—Loans and Debt Securities Acquired with Deteriorated Credit Quality (formerly AICPA Statement of Position 03-3, "Accounting for Certain Loans or Debt Securities Acquired in a Transfer").

<sup>8</sup> Required only in the baseline scenario

**7-8. Cumulative “Charge-Offs” to Date:** Total cumulative contractual amounts due on PCI loans that would have been deemed charged-off under a non-PCI charge-off policy (i.e. losses accumulated to date that will be offset against the non-accretable difference (NAD) and/or the PCI Allowance). Please split between amount planned to be applied against the NAD and the amount planned to be applied against the Allowance. Provide only for the first quarter on the reporting schedule.

**9. Provisions to Allowance:** The amount of provisions to the allowance recognized in the income statement in the quarter due to changed expectations of lifetime cash flows to be received for the PCI loans. Provide increases to the allowance as a positive number and reversals of the allowance as a negative number.

**10-11. Quarterly “Charge-Offs”:** The total contractual amount of PCI loans that would be deemed charged off or identified as loss under a non-PCI charge-off policy in the quarter (i.e. losses in the quarter that will be offset at some point against the non-accretable difference (NAD) and/or the PCI Allowance). Please split between amount planned to be applied against the NAD and the amount planned to be applied against the Allowance.

**12. Accretable Yield Remaining:** The accretable yield remaining as of the quarter-end.

**13. Accretable Yield Accreted to Income:** The amount of accretable yield recognized as income in the quarter.

**14. Effective Yield (%):**The effective interest rate at which income is recognized in the quarter.

#### **D. Supporting Documentation**

BHCs should submit separate documentation for their Retail-related projections. The supporting document should be titled **BHCRSSD\_BHCMNEMONIC\_RETAIL\_METHODODOLOGY\_YMMDD**. You may submit separate documents for different models and/or methodologies. In this case, title the documents: **BHCRSSD\_BHCMNEMONIC\_RETAIL\_METHODODOLOGY\_MODELTYPE\_YMMDD**. Model Type refers to the type of Retail model. Documentation should be submitted for all aspects of the retail portfolio, including purchased credit impaired loans and mortgage repurchase risk. Mortgage repurchase documentation should include descriptions of all important assumptions made in each scenario, including, but not limited to, assumptions about legal process outcomes and counterparty behavior. All retail documentation should include documentation of assumptions, governance, validation and independent review as outlined in the Supporting Documentation section of the Overview.

#### **IV. Wholesale**

BHCs should submit separate documentation for their Wholesale (Corporate and CRE) loan balances and loss projections. The supporting document should be titled **BHCRSSD\_BHCMNEMONIC\_WHOLESALE\_METHODODOLOGY\_YMMDD**. You may submit separate documents for different models and/or methodologies. In this case, title the documents: **BHCRSSD\_BHCMNEMONIC\_WHOLESALE\_METHODODOLOGY\_MODELTYPE\_YMMDD**. Model Type refers to the type of Wholesale model.

BHCs should include supporting documentation that describes the key methodologies and assumptions

for performing stress testing on each wholesale portfolio. Documentation should include an index of

documents submitted, a general overview document providing a broad summary of the stress testing methodologies utilized, and detailed supporting documentation that clearly describe the model development process, the derivation of outcomes, and validation procedures as outlined below. The methodologies' formulaic specification, assumptions, numerical techniques, and approximations should be explained in detail with particular attention to both their merits and limitations. Specifically, documentation should include:

- Discussion of historical data set construction, including data sources, adjustments to the data set, and documentation validating the use of any external data.
- Time period of model calibration.
- Rationale for portfolio segmentation and a discussion on how a particular methodology and model captures the key characteristics and the unique risk drivers of each portfolio segment.
- A description of how the loss estimates appropriately capture the severity of the macroeconomic scenario, reflecting both industry and borrower characteristics. Documentation should include a justification for explanatory variables selected, including coefficients from statistical models, measures of their statistical significance, and qualitative assessments where appropriate. Where relevant, descriptive statistics, including their mean, median, minimum, maximum, and standard deviation should be outlined.
- Step-by-step examples of loss calculation, including a transparent breakdown of all components of forecasted loss (i.e., probability of default, severity of loss, exposure at default) and how each component is adjusted for the given macroeconomic scenario.
- Discussion of how losses were distributed to each quarter in the forecasted period as it relates to changes in the macroeconomic factors within the modeled scenario.
- Qualitative or quantitative adjustment to main model output. Firms should perform pre-adjustment / post adjustment loss analysis and supply that analysis for material disparity.

Where the current total balances in the wholesale line items do not tie directly to the corresponding category on the FR Y-9C, BHCs should provide a reconciliation which accounts for all wholesale balances. To the extent that loss projection line items include the consolidation of various loan portfolios which have different risk characteristics, supporting documentation should break out the relevant sub-portfolio losses. Furthermore, BHCs should provide supporting documentation and forecasts for any wholesale loan portfolios acquired after the beginning quarter of the stress scenario and/or for loans covered by loss sharing agreements with the FDIC.

## **V. Loans Held for Sale and Loans Accounted for Under the Fair Value Option**

BHCs should submit separate documentation for their Fair Value Option and Held for Sale retail and wholesale loans. The supporting document should be titled **BHCRSSD\_BHCMNEMONIC\_FVOHFS\_METHODODOLOGY\_YMMDD**. You may submit separate documents for different models and/or methodologies. In this case, title the documents: **BHCRSSD\_BHCMNEMONIC\_FVOHFS\_METHODODOLOGY\_MODELTYPE\_YMMDD**. The documentation should include:

- Total loss and outstanding fair market value balances segmented by Commercial/Wholesale, Commercial Real Estate and Retail along with explanation as to the main drivers of loss for each category noted above.

- Please document the amount of funded and non-funded commitments for wholesale loans and for retail loans please include the average amount of loans that had been rejected or were in not in conformance with agency standards.
- An attestation to completeness: describe the process and governance & oversight for ensuring the full set of positions were accounted for and included,
- Documentation should clearly make note of instances where different methodologies were used across different business lines with like assets,
- Documentation should make note where judgment was used in defining and allocating exposure,
- Where shocks were used that differed from prescribed shocks,
- Document approach and asset coverage under these approaches,
- Describe any additional broadening or simplification of the scenario done to get the requisite amount of granularity needed to run to scenario,
- Scenario design and choice for BHC scenario and method of application compared to the FRB scenario.

## **VI. AFS/HTM Securities**

### **A. Projected OTTI for AFS Securities and HTM Securities by CUSIP**

For each position that incurred a loss in P&L, please state the identifier value (CUSIP or ISIN) and the amount of loss projected (over the entire forecast horizon). Create a separate line item for each position. Total projected losses should reconcile to the total sum of projected losses (across all quarters) provided in the Securities OTTI by Portfolio tab of this schedule. Responses should be provided in USD millions.

### **B. Projected OTTI for AFS and HTM Securities by Portfolio**

Please provide the credit loss portion and non-credit loss portion of projected OTTI (for relevant portfolios) for the quarters detailed in the tables provided in the Securities OTTI by Portfolio tab. Responses should be provided in USD millions. Values should be quarterly, not cumulative.

OTTI related to the security's credit loss is recognized in earnings, whereas the OTTI related to other factors (defined as the non-credit loss portion) is included as part of a separate component of other comprehensive income (OCI). For only those securities determined to be other-than-temporarily impaired, BHCs should provide both projected losses that would be recognized in earnings and any projected losses that would be captured in OCI.

Only securities projected to experience an other-than-temporary impairment loss in the P&L should be reported in the tables provided in the Securities OTTI by Portfolio tab. Securities not projected to be other-than-temporarily impaired (for example, any securities implicitly or explicitly guaranteed by the U.S. government or any other securities for which no OTTI is projected) should not be reported in this tab.



**C. High-Level OTTI Methodology and Assumptions for AFS and HTM Securities by Portfolio**

Please complete the unshaded cells in the table provided.

**D. Post-Trading Shock Market Values for AFS Securities**

BHCs should estimate and provide fair market values of AFS securities based on a re-pricing of 09/30/2012 positions under the trading shock scenario.

**E. Actual AFS and HTM Fair Market Value Sources by Portfolio**

Provide information on the sources of actual fair market values as of September 30 of the reporting year.

**F. Supporting Documentation**

The supporting document should be titled

**BHCRSSD\_BHCMNEMONIC\_SECURITIES\_METHODODOLOGY\_YMMMDD**. You may submit separate documents for different models and/or methodologies. In this case, title the documents:

**BHCRSSD\_BHCMNEMONIC\_SECURITIES\_METHODODOLOGY\_MODELTYPE\_YMMMDD**. The documentation should clearly address the OTTI methodologies used by BHCs to complete the FR Y-14A Summary schedule. The documentation should, at a minimum, address the questions outlined below by major product/portfolio type (e.g., non-agency residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), auto asset-backed securities (ABS), corporate bonds, etc.).

**OTTI Methodology**

- Describe the model/methodology used to develop stressed OTTI losses. Please state whether a vendor or proprietary model was used.
- If a vendor model was used, please provide the name of the vendor model. If a vendor model was used, has the BHC performed an independent review of the vendor model?
- What data source(s) was used to estimate the model?
- What were the key inputs/variables and how were these determined? (E.g., how were default, severity, and other elements determined? What were the key inputs in determining default, severity, and other elements? What were the key assumptions and how were these assumptions determined?)
- If using a cash flow model, was a vendor or proprietary model used? If using a vendor model, please provide the name of the vendor and model.
- How did the model/methodology (whether vendor or proprietary) incorporate macroeconomic assumptions?
- If relevant, how were macroeconomic assumptions (as prescribed under the supervisory stress scenario) used to determine projected collateral default and severity?
- Were all securities reviewed for impairment? If not, describe the rationale, decision rule, or filtering process.

- If the threshold for determining OTTI on structured products was based on a loss coverage multiple, describe the multiple used.
- If OTTI was estimated for multiple quarters, describe the process for determining OTTI in each period of the forecast time horizon.
- Is the BHC using shortcuts or rules of thumb to recognize the OTTI charges for this analysis or going through the BHC's normal process for recognizing OTTI charges? If using shortcuts or rules of thumb, state how this process differs from the normal process for recognizing OTTI charges.

#### **Validation and Independent Review**

- Has the model undergone model validation, with results reviewed independently of the business line?
- Has any performance testing been conducted on the model? If so, what type of performance testing has been conducted?

#### **Fair Market Value Determination**

- If more than one third-party vendor is used as the principal pricing source for a given security, what are the criteria for determining the final price? (e.g., is a mean, median, weighting scheme or high/low price taken?) Is there a hierarchy of sources? If appropriate, describe responses by major product or portfolio type (e.g., non-agency RMBS, CMBS, Consumer ABS).
- If an internal model is used as the principal pricing source for a given security, are prices (from an internally created model) compared with third party vendor prices? If so, which vendors are used? If prices are not compared with third party vendors, state the reason. If appropriate, describe responses by major product/portfolio type (e.g., non-agency RMBS, CMBS, Consumer ABS.).
- Describe any additional adjustments made to prices determined by internal model(s) and/or third parties. How is the ultimate price determined?
- If an internal model is used as the principal pricing source for a given security, what are the primary market pricing variables used for fair value estimation?
- Describe briefly the BHC's price validation and verification process. Provide readily available documentation related to the BHC's price validation and verification process.

#### **Post-Trading Shock Market Values for AFS Securities**

- For the supervisory stress scenario only, BHCs should provide documentation on how trading shocks were applied to 9/30 positions. BHCs should make every effort to use the shocks specified; however, there may be cases where a BHC may require a shock that differs from those provided. For these cases, supplemental documentation must be submitted with the BHC's trading shock estimates. Supplemental documentation should include, at a minimum, the following information:
  - For each type of security, the rationale for using a shock other than those provided.
  - The methodology and assumptions used to determine the shocked market value.
  - The shocks used by the BHC by type of security.
  - The data source(s) used by the BHC to determine the shock.

## VII. Trading

### A. Trading worksheet

The Trading worksheet collects firm-wide trading profit and loss (P/L) results decomposed into the various categories listed (Equities, FX, Rates) as of a date specified by the Federal Reserve. These categories are not meant to denote lines of business or desks, but rather firm-wide totals by risk. Definitions of terms can be found in the instructions to the quarterly Trading schedule. The decomposition of losses into risk areas should sum to equal the total trading mark-to-market (MTM) loss reported on the income statement. On the trading tab, report total P/L for the entire scenario horizon, not quarterly decomposition.

### B. Supporting Documentation

The supporting document should be titled

**BHCRSSD\_BHCMNEMONIC\_TRADING\_METHODODOLOGY\_YMMDD.** You may submit separate documents for different models and/or methodologies. In this case, title the documents:

**BHCRSSD\_BHCMNEMONIC\_TRADING\_METHODODOLOGY\_MODELTYPE\_YMMDD.**

- Documentation should include supporting details explaining the main drivers and attribution of loss for the overall trading and MTM loss estimate, and for each respective primary risk/business unit area details on the loss attribution by the primary risk factors.
- Documentation should provide a complete and technical definition of second and higher order risk factors (cross gamma, vanna, etc.) and describe the methods undertaken by the firm to estimate the cross gamma and higher order effects.
  - Estimate the contribution to total losses from higher-order risks.
- Describe the evolution of risk per each risk area two weeks before and after the submission date, i.e. make note of positions that may expire or terminate within this time frame that significantly alters a risk profile.
- Describe the process and governance & oversight for ensuring the full set of positions were accounted for and included and also please make note of differences in the products and/or exposures included in the 14Q vs. the 14A.
- A detailed and technical description of modeling methods (including pricing models) used,
  - Documentation should clearly make note of instances where different methodologies were used across different business lines with like assets.
  - Document approach (full revaluation vs. grid based approach, e.g.) and asset coverage under these approaches,
  - Please identify those products or exposures where the firm used models or systems that were outside of the normal routine stress testing framework for the FRB stress scenario and indicate if they were reviewed or validated by an independent Model Review function.
- The decision-making used for allocating exposures according to risk area. Documentation should make note where judgment was used in defining and allocating exposure per each risk area.

- Where shocks were used that differed from prescribed shocks.

- Describe any additional broadening or simplification of the scenario done to get the requisite amount of granularity needed to run to scenario,
- Scenario design and choice for BHC scenario and method of application compared to the FRB scenario.

## VIII. Counterparty Credit Risk (CCR)

### A. Counterparty Risk Worksheet

The CCR worksheet collects projected counterparty credit losses as of a date specified by the Federal Reserve. Use the following definitions for the fields in the worksheet.

- **Trading IDR losses:** Capture incremental default risk (IDR) of credit sensitive assets in the trading book over the projection horizon. Trading IDR represents the additional losses incurred from default of underlying securities (obligors) in the trading book, beyond the MTM losses already captured by the MTM trading book shocks. To estimate Trading IDR, firms can leverage calculations under the Basel methodology as defined in Basel Committee on Banking Supervision (BCBS) Guidelines for Computing Capital for Incremental Risk in the Trading Book.<sup>9</sup> Default risk should be consistent with the macroeconomic scenario. Where separate methodologies are used to calculate CCR IDR and Trading IDR, provide separate results and supporting details.
  - a. **Trading IDR losses from securitized products:** Trading IDR losses from securitized products, including RMBS, CMBS, and other securitized products as specified on the Securitized Products Worksheet of the FR\_Y-14Q\_TRADING Schedule.
  - b. **Trading IDR losses from other credit sensitive instruments:** Trading IDR losses from all other credit sensitive instruments (i.e., all products considered in Trading IDR losses other than securitized products), such as sovereigns, advanced economy corporate credits, and emerging market corporate credits.
- **CVA losses:** Total losses reported are equivalent to the BHC's calculation of aggregate stressed CVA less unstressed CVA for each scenario. This figure should correspond to the difference between aggregate stressed CVA and aggregate unstressed CVA, as reported in the FR\_Y-14A\_CCR schedule, Worksheet 1e, for both scenarios.
- **CCR IDR losses:** Capture incremental default risk (IDR) over the projection horizon of over-the-counter (OTC) derivative counterparties in the trading book, beyond the mark-to-market (MTM) losses already captured by stressing CVA. A methodology conceptually similar to the Trading IDR book can be applied, where instead of obligor defaults, the CCR IDR would account for counterparty defaults. Exposure at default (EAD) calculations should capture stressed counterparty exposures, and should deduct stressed asset-side, unilateral CVA. Stressed EAD should be based on the trading asset stress scenarios (adverse scenario provided by the Federal Reserve and adverse scenario developed by BHC), while default risk should be consistent with

<sup>9</sup> Available at <http://www.bis.org/publ/bcbs159.pdf>.

the macroeconomic scenario. Where separate methodologies are used to calculate CCR IDR and Trading IDR, provide separate results and supporting details. Only single name credit default swap (CDS) hedges of the defaulting counterparty may be used to offset counterparty defaults in CCR IDR losses.

- a. **Impact of hedges:** The decrease in CCR IDR losses due to the gains from single name CDS hedges of defaulting counterparties.
- **Other CCR losses:** Other CCR losses not associated with Trading IDR, CVA, or CCR IDR.

## **B. Supporting Documentation**

The supporting document should be titled

**BHCRSSD\_BHCMNEMONIC\_CCR\_METHODODOLOGY\_YYMMDD**. You may submit separate documents for different models and/or methodologies. In this case, title the documents:

**BHCRSSD\_BHCMNEMONIC\_CCR\_METHODODOLOGY\_MODELTYPE\_YYMMDD**. Model Type refers to CVA, CCR IDR, Trading IDR, and Other CCR Losses.

The documentation should include a detailed description of the methodologies used to estimate Trading IDR, CVA, and CCR IDR losses under the stress scenario as well as methodologies used to produce the data in the FR\_Y-14A\_CCR schedule. All information relevant for supervisors to understand the approach should be included. Any differences between the BHC and the FR scenarios in methodology, position capture, or other material elements of the loss modeling approach should be clearly described.

As part of the detailed methodology document, BHCs should provide an Executive Summary that gives an overview of each model and answers each of the questions below. If one of the questions below is not fully addressed in the Executive Summary, cite the page number(s) of the methodology document that fully addresses the question.

In addition to the Executive Summary, there should be a section of the methodology document devoted to any divergence from the instructions to the Counterparty Risk Worksheet or the FR\_Y-14A Schedule. Use this section to explain any data that is missing or not provided as requested. This section should also be used to describe where and how judgment was used to interpret an instruction.

### **Trading IDR**

If different models were used for different product types (e.g., corporate credit and securitized products), provide a response for each model type where appropriate.

1. Data and systems
  - a. What product types are included and excluded? Specifically, comment on whether equities are excluded and what types of securitized products, if any, are excluded. Comment on the materiality of any exclusions.
  - b. Are there any issuer type exclusions? Comment on the materiality of any exclusions.
  - c. Are there any exposure measurement or trade capture limitations impacting the Trading IDR loss estimate in Item 1 on the Counterparty Risk Worksheet in the SUMMARY\_SCHEDULE or the data provided in Worksheets Corporate Credit-Advanced,

Corporate Credit-EM, Sovereign Credit, Credit Correlation, IDR-Corporate Credit, or IDR-

- Jump To Default in the FR\_Y-14Q\_TRADING Schedule? If so, make sure to elaborate in the documentation, particularly where these limitations understate losses.
- d. Are there any discrepancies in position capture between the MV and Notionals reported in Worksheets Corporate Credit-Advanced, Corporate Credit-EM, Sovereign Credit, Credit Correlation, or IDR- Corporate Credit in the FR\_Y-14Q\_TRADING Schedule? If so, elaborate on the discrepancies in the documentation.
  - e. Are any index or structured exposures decomposed/unbundled into single name exposures on the IDR Corp Credit or IDR Jump to Default Worksheets in the FR\_Y-14Q\_TRADING Schedule? If so, provide a description of the exposures that are decomposed and the methodology used.
  - f. What types of CVA hedges are included in the FR\_Y-14Q\_TRADING Schedule and Item 10 on the Trading Worksheet of the SUMMARY\_SCHEDULE (e.g., market risk hedges, counterparty risk hedges)? Which, if any, of these hedges are excluded from the Trading IDR loss estimates (Item 1 on the Counterparty Risk Worksheet of the SUMMARY\_SCHEDULE)? Confirm that hedges modeled in Trading IDR are excluded from CCR IDR.
2. PD methodology
    - a. How is the severity of default risk treated? Is a stressed expected PD used, or is it an outcome in the tail of the default distribution? If an outcome in the tail is used, what is the tail percentile?
    - b. How is default risk represented over the horizon of the stress test? Is a cumulative two-year PD or a one-year PD used as a model input? How is migration risk captured?
    - c. What data sources and related time periods are used to generate the assumptions on stressed expected PD or the default distribution? In the documentation, provide a breakdown of PDs (e.g., by rating, asset category). Provide stressed PDs if a stressed PD is used, or provide PD inputs if an outcome in the tail is used.
  3. Correlation assumptions
    - a. What correlation assumptions are used in the Trading IDR models?
  4. LGD methodology
    - a. Do the models assume a static LGD or a stochastic LGD with a non-zero recovery rate volatility?
      - i. If a static LGD is used, were the mean LGDs stressed? What data sources and related time periods were used to determine the LGDs? In the methodology documentation, provide the relevant breakdown of LGDs used in the model (e.g., by ratings, asset category).
      - ii. If a stochastic LGD is used, elaborate on the assumptions generating the stochastic LGD in the documentation, including assumptions on the LGD mean and volatility and rationale for modeling choices.
  5. Liquidity horizon
    - a. What liquidity horizon assumptions are used?
  6. Exposure at default (EAD)
    - a. What Exposure at Default (EAD) is used for Trading IDR? For example, is the calculation based on actual issuer exposures, stressed exposures, a mix of both, or something else? If exposures are stressed, please explain how the exposures were stressed.
  7. Treatment of gains
    - a. Are any gains being reflected in the Trading IDR calculations? If so, elaborate in the documentation how gains are treated.



## 8. Model validation and documentation

- a. For any models used to report numbers in the SUMMARY\_SCHEDULE or the FR\_Y-14A\_Trading that are also used in Business as Usual (BAU) production, have those models been validated as used in BAU? If so, attach model validation documents. If not, elaborate in the documentation on any review process.
- b. For any ad-hoc models used for CCAR that would not have been previously validated, what review if any has occurred? Elaborate in the documentation where appropriate.

## CVA

1. Divergence from instructions
  - a. In the FR\_Y-14A\_CCR or Summary Schedules, is liability-side CVA (i.e., DVA) included in any element of the submission? If so, elaborate in the documentation.
  - b. In the FR\_Y-14A\_CCR or Summary Schedules, is bilateral CVA included in any element of the submission (i.e., CVA where the counterparty default probabilities are conditional on the survival of the BHC)? If so, elaborate in the documentation.
  - c. Is there any place where CVA data is reported net of hedges on the FR\_Y\_14A\_CCR Schedule or Item 2 on the Counterparty Risk Worksheet in the SUMMARY\_SCHEDULE?
  - d. In calculating Stressed Net CE in Worksheets 1a, 1b, 1c, 1d, and 1e in FR\_Y-14A\_CCR, are there any occasions where it is assumed additional collateral has been collected after the shock? If so, elaborate in the documentation.
  - e. Are there any counterparties for which your firm did not fully implement the FR specification for the EE profiles on Worksheets 2a and 2b in the FR\_Y-14A\_CCR? If so, elaborate in the documentation.
2. Data and systems: In the documentation, clearly identify, describe, and comment on the materiality of any exclusions that prevent 100% capture of counterparties or trades. At a minimum, address the questions below and elaborate in the documentation where appropriate.
  - a. Are any counterparties on Worksheet 1a of FR\_Y-14A\_CCR excluded from Worksheet 2a? Where specific counterparties are reported as top 200 counterparties on one Worksheet of the Schedule, but are not listed on other top 200 Worksheets, list these counterparties in the documentation by name and provide a reason for their exclusion.
  - b. Are any counterparties excluded from the unstressed or stressed aggregate data reported in Worksheets 1e, 2b, or 3b of FR\_Y-14A\_CCR or the losses reported in the SUMMARY\_SCHEDULE SUMMARY\_SCHEDULE (Item 2 in the Counterparty Risk Worksheet)? In the documentation, elaborate on the nature, materiality, and rationale for these exclusions.
  - c. Do the expected exposure (EE) profiles, CDS spreads, PDs, LGDs, discount factors, as provided on FR\_Y-14A\_CCR Schedule (Worksheets 2a and 2b), come from the same systems as that used for the calculation of CVA losses as provided in the SUMMARY\_SCHEDULE (Item 2 in the Counterparty Risk Worksheet)? If not, elaborate in the documentation.
  - d. For unstressed and stressed CVA reported in the FR\_Y-14A\_CCR Schedule, which counterparties, counterparty types, or trade types are calculated offline or using separate methodologies? Why are they calculated offline or with a different methodology? Elaborate in the documentation.
  - e. Are any add-ons used to calculate stressed CVA in the FR\_Y-14A\_CCR Schedule? Elaborate regarding the nature and rationale for each type of add-on in the documentation.
  - f. Are there any additional/ offline CVA reserves reported in Worksheet 1e in the

- FR\_Y-14A\_CCR Schedule? If so, elaborate about the nature of these reserves in the documentation. Explain what counterparties, counterparty types, or trade types are included, why are they calculated as reserves, and how they are stressed.
- g. Are there any exposure measurement or product capture limitations impacting the loss estimate in Item 2 on the Counterparty Risk Worksheet in the SUMMARY\_SCHEDULE? If so, make sure to elaborate in the documentation, particularly where these limitations understate losses.
  - h. Does the firm conduct a reconciliation between the sum of items 15(a) in Schedule HC-L of the FRY-9C and the aggregate unstressed Gross CE on Worksheet 1e of the FRY-14A\_CCR Schedule? Note that the figures in the FRY-9C are called "net current credit exposure", as the "net" refers to counterparty netting.
  - i. Are all sensitivities/ slides provided as requested? If slides are not provided as requested in the FR\_Y-14A\_CCR Schedule, elaborate in the documentation why they are missing or not provided correctly.
  - j. Are the sensitivities/ slides provided in Worksheet 4 of FR\_Y-14A\_CCR sourced from the same calculation engine and systems as used for the firm's loss estimates (Item 2 in the Counterparty Risk Worksheet in the SUMMARY\_SCHEDULE)? If not, elaborate in the documentation.
  - k. Elaborate on how sensitivities/ slides in Worksheet 4 of FR\_Y-14A\_CCR were determined to be material. What qualifies a risk factor as immaterial?
3. LGD methodology
    - a. For the LGD used to calculate PD, are market implied recovery rates used? If not, elaborate on the source of the LGD assumption in the methodology documentation.
    - b. Is the same recovery/LGD used in the CVA calculation as is used to calculate PDs from the CDS spread? If not, in the documentation provide a detailed rationale and backup data to support the use of a different LGD, and provide the source of the LGD used to calculate CVA.
  4. Exposure at default (EAD)
    - a. What Margin Period of Risk (MPOR) assumptions are used for unstressed and stressed CVA?
    - b. Are collateral values stressed in the numbers reported in the FR\_Y\_14A\_CCR Schedule or Items 2 or 3 on the Counterparty Risk Worksheet in the SUMMARY\_SCHEDULE? If so, elaborate on the stress assumptions applied.
    - c. In the FR\_Y-14A\_CCR on Worksheets 2a and 2b, for the BHC specification, are downgrade triggers modeled in the exposure profiles?
  5. Application of shocks
    - a. Are the shocks applied to CVA (for calculating Item 2 in the Counterparty Risk Worksheet in the SUMMARY\_SCHEDULE as well as the Stressed figures reported in FR\_Y-14A\_CCR) the same as those applied to the Trading Book (Item 10 in the Trading Worksheet in the SUMMARY\_SCHEDULE)? Where they are different, or where shocks applied diverge from the FR shock scenario, elaborate in the documentation.
    - b. Have the models for CVA been validated? If not, elaborate on the review process, if any.
  6. Model validation and documentation
    - a. For any models used to report numbers in the SUMMARY\_SCHEDULE or the FR\_Y-14A\_CCR that are also used in Business as Usual (BAU) production, have those models been validated as used in BAU? If so, attach model validation documents. If not, elaborate in the documentation on any review process.
    - b. For any ad-hoc models used for CCAR that would not have been previously validated,

what review if any has occurred? Elaborate in the documentation where appropriate.

## CCR IDR

1. Data and systems
  - a. Are there any exposure measurement or product capture limitations impacting the loss estimate in Item 3 on the Counterparty Risk Worksheet in the SUMMARY\_SCHEDULE? If so, make sure to elaborate in the documentation, particularly where these limitations understate losses.
  - b. What types of CVA hedges are included in CCR IDR? Confirm that hedges modeled in CCR IDR were excluded from Trading IDR.
2. PD methodology
  - a. How is the severity of default risk treated? Is a stressed expected PD used, or is it an outcome in the tail of the default distribution? If an outcome in the tail is used, what is the tail percentile?
  - b. How is default risk represented over the horizon of the stress test? Is a cumulative two-year PD or a one-year PD used as a model input? How is migration risk captured?
  - c. What data sources and related time periods are used to generate the assumptions on stressed expected PD or the default distribution? In the documentation, provide a breakdown of PDs (e.g., by rating, counterparty type). Provide stressed PDs if a stressed PD is used, or provide PD inputs if an outcome in the tail is used.
3. Correlation assumptions
  - a. What correlation assumptions are used in the CCR IDR models?
4. LGD methodology
  - a. Do the models assume a static LGD or a stochastic LGD with a non-zero recovery rate volatility?
  - b. If a static LGD is used, are the mean LGDs stressed? What data sources and related time periods are used to determine the LGDs? In the methodology documentation, provide the relevant breakdown of LGDs used in the model (e.g., by ratings, counterparty type).
  - c. If a stochastic LGD is used, elaborate on the assumptions generating the stochastic LGD in the documentation, including assumptions on the LGD mean and volatility and rationale for modeling choices.
5. Liquidity horizon
  - a. What liquidity horizon assumptions are used?
6. Exposure at default (EAD)
  - a. Provide an overview of how EAD is modeled for CCR IDR.
  - b. Are any downgrade triggers assumed in the CCR IDR model? If so, elaborate in the documentation.
  - c. What Margin Period of Risk (MPOR) assumptions are modeled in CCR IDR?
7. Treatment of gains
  - a. Are any gains being reflected in the CCR IDR calculations? If so, elaborate in the documentation how gains are treated.
8. Model validation and documentation
  - a. For any models used to report numbers in the SUMMARY\_SCHEDULE or the FR\_Y-14A\_CCR that are also used in Business as Usual (BAU) production, have those models been validated as used in BAU? If so, attach model validation documents. If not, elaborate in the documentation on any review process.
  - b. For any ad-hoc models used for CCAR that would not have been previously validated,

what review if any has occurred? Elaborate in the documentation where appropriate.

### **Other CCR Losses**

- 1) Data and systems
  - a. What types of CCR losses are included in the "Other CCR Losses" Counterparty Risk Worksheet of the SUMMARY\_SCHEDULE? What are the loss amounts for each major category of "Other CCR Losses"? For any material losses, discuss the methodology and rationale in the documentation.

## **IX. Operational Risk**

Operational risk losses are defined in Basel II as losses arising from inadequate or failed internal processes, people and systems, or from external events. Operational risk losses include legal losses but exclude boundary events (e.g., operational losses that could also be classified as credit event losses). The Interagency Final Rule further defines an operational loss as a financial loss (excluding insurance or tax effects) resulting from an operational loss event and includes all expenses associated with an operational loss event except for opportunity costs, forgone revenue, and costs related to risk management and control enhancements implemented to prevent future operational losses. Some examples of operational loss events that BHCs may consider are losses related to improper business practices (including class action lawsuits), execution errors, and fraud. Operational risk loss projections should be included in the PPNR Projections worksheet in line 29, Operational Risk Expense, and should not be included as reserves. The following should be considered when completing each operational risk schedule in the FR Y-14A:

### **Support for Sponsored Funds**

Stress on asset markets can jeopardize the unit value of certain sponsored funds and asset management products. Firms that offer these vehicles should anticipate this kind of duress and factor it into their forecasts and capital planning. In doing so, firms should consider possible outcomes such as:

- a. A decision against providing support for products which have traditionally carried unit asset values may initiate client flight, and force the liquidation of assets into falling and illiquid markets. Client flight may not be confined to the product in question but may also involve withdrawal from other profitable relationships within the BHC. In addition, firms may be exposed to client litigation based on the represented risk of these products.
- b. A decision in favor of supporting the product, thus limiting reputational risk, will involve a direct cost represented by the decline of the fund's asset values. In addition, this choice may trigger the consolidation of the product with the bank's core balance sheet, which would increase risk-weighted assets and subsequently increase capital requirements.

In either event, the impact on the BHC could be substantial. When assessing capital adequacy under stress, management should estimate the impact conservatively, model the exposure, and include the results in the loss projections. Recently, large BHCs have provided a notable amount of non-contractual support to affiliated funds. Consideration should be given to the number and size of these funds, as well as how the supervisory macroeconomic scenarios would impact the value of these funds and the firm's propensity to support a particular fund or set of funds. Although cash amounts paid to support funds are

not within the generally accepted definition of operational risk events, each event can significantly and directly impact the capital of the sponsoring BHC and should be considered as an event in a capital planning context.

### **Legal Reserves and Provisions**

BHCs should report operational risk loss projections that include significant amounts paid to prevent or mitigate an operational loss settlement with clients to prevent future legal action. Each of the Operational Risk loss projections in each of the required scenarios should include all projected settlements, make-whole payments, and payouts that comply with adverse legal rulings if they are not covered on the PPNR Projections Worksheet under lines 14N and 30 (Provisions to Repurchase Reserve / Liability for Residential Mortgage Representations and Warranties). If specifically linked to operational risk, please also include all legal consultation fees, retainer fees, and provisions to the legal reserve within the Operational Risk loss projections.

### **Unrelated Professional Services**

The cost of outside consulting, routine “business as usual” legal expenses, external audit, and other professional services unrelated to operational risk should be included in line 31 (Professional and Outside Services Expenses) on the PPNR Projections Worksheet.

### **Definitions**

Refer to the following definitions when completing the Op Risk Scenario Inputs worksheet, the Projected Quarterly Op Risk Losses worksheet, and the Historical Op Risk Capital worksheet:

1. **Event Types:** The event type is one of seven industry standard categories that reflect the nature of the underlying operational loss. The seven categories are:
  - **Internal Fraud:** Losses due to acts of a type which involve at least one internal party and are intended to defraud; misappropriate property; or circumvent regulations, the law, or company policy, excluding diversity and discrimination events.
  - **External Fraud:** Losses due to acts of a type intended to defraud, misappropriate property or circumvent the law, by a third party.
  - **Employment Practices and Workplace Safety:** Losses arising from acts inconsistent with employment, health or safety laws or agreements, from payment of personal injury claims, or from diversity / discrimination events.
  - **Clients, Products and Business Practices:** Losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements), or from the nature or design of a product.
  - **Damage to Physical Assets:** Losses arising from loss or damage to physical assets from natural disaster or other events.
  - **Business Disruption and System Failure:** Losses arising from disruption of business or system failures.
  - **Execution, Delivery and Process Management:** Losses from failed transaction processing or process management, from relations with trade counterparties and vendors.
2. **Type of Data:**
  - **External data:** Historical operational losses that have been experienced by other BHCs.
  - **Internal data:** Historical operational losses that have been experienced by the BHC.
  - **Operational Risk Scenario Analysis:** A systematic process of obtaining expert opinions from business managers and risk management experts to derive reasoned assessments of the

likelihood and loss impact of plausible high severity operational losses.

- **Model Output:** Output generated by an internal or external model, such as a factor model
3. **Brief Description:** Description of operational loss event or other factor considered.
  4. **Unit of Measure:** The level at which the BHC's quantification model generates a separate distribution for estimating potential operational losses (e.g., organizational unit, operational loss event type, risk category).
  5. **Dollar Contribution to Operational Loss Estimate:** For each row of operational risk data considered in the operational loss projections, indicate the dollar amount that was used in the operational loss projection included in PPNR in millions of dollars.

## **Worksheets**

### **A. BHC Operational Risk Scenario Inputs Worksheet**

The Op Risk Scenario Inputs worksheet collects information about the composition of the operational risk loss projections. Each reporting institution should gather data using a number of tools, including external data, internal data, scenario analysis, risk assessment, and so on. Each data tool produces an input to the overall loss projection. The Unit of Measure ("UOM") is used to capture the data from these tools in a uniform manner. Although an institution can develop idiosyncratic UOMs, in general reporting institutions utilize the Basel II Event Types and Business Lines (or combinations of these) to categorize the data into specific inputs to the loss projection models. Reporting institutions, therefore, are expected to provide the type of data, a brief description of the loss event, how it was categorized (UOM), and the contribution the data made to the loss projection. The sum of the OpRisk Scenario Inputs Worksheet should equal the total of the losses projected on the OpRisk Projected Losses worksheet.

### **B. BHC Operational Risk Projected Losses Worksheet**

The sum of the quarterly data provided should equal the total of the scenarios listed in the OpRisk Scenario Inputs worksheet.

### **C. Supporting Documentation and Independent Review**

The supporting document should be titled **BHCRSSD\_BHCMNEMONIC\_OP\_METHODODOLOGY\_YMMMDD**. BHCs may submit separate documents for different models and/or methodologies. In this case, title the documents: **BHCRSSD\_BHCMNEMONIC\_OP\_METHODODOLOGY\_MODELTYPE\_YMMMDD**.

## **Documentation**

Generally, a BHC should have robust internal controls governing its operational risk loss projection methodology and process components, including sufficient documentation, model validation and independent review. Supporting documentation should cover all models, loss and resource forecasting methodologies and processes. Adequate documentation includes comprehensive and clear policies and procedures. For models, adequate documentation includes specific delineation of all key assumptions for projecting operational losses under each scenario, a description of the underlying operational risk data used to determine projected losses and the approach for translating the data into loss projections. If a budgeting process was used, the BHC should describe the budgeting process and provide specific detail on how operational losses are estimated. Adequate documentation includes articulating the models' vulnerability to error, and estimates of an error's impact should parameter specifications prove

inaccurate. Documentation of all models should clearly identify the exact statistical process employed by the BHC including:

1. How the current set of explanatory factors was chosen, what variables were tested and then discarded, and how often the set of possible explanatory factors is reviewed and, if appropriate, revised;
2. A description of work the BHC has done to assess relationships between macroeconomic factors and operational risk losses, including relationships that were found to have the highest level of dependency, a summary of statistical results, and how these results were incorporated in the estimates;
3. A discussion of how pending litigation and reserves for litigation were incorporated into operational loss projections for all requested scenarios;
4. A narrative describing the methodology and process for assessing and forecasting losses associated with supporting sponsored funds;
5. A description of the methodology for allocating an operational loss amount to a particular quarter;
6. An explanation summarizing the reasonableness of results, how they differ from expectations, and what the BHC does when the results are deemed "unreasonable";
7. A description of internal controls that ensure the integrity of reported results and that all material changes to the process and its components are appropriately reviewed and approved. BHCs should ensure that change control principles apply to forecasting models used in the stress scenario analysis program, including processes that rely on management judgment;
8. An assessment of how effective or accurate the model is---preferably utilizing an out-of-sample testing and analysis framework;
9. Identification of possible drawbacks and limitations of the selected approach.

### **Model Validation**

Models employed by BHCs should be independently validated or otherwise reviewed in line with model risk management expectations presented in SR 11-7 issued in April 2011, which provides a clear outline of expectations surrounding model risk management. Specifically, management should provide supporting documentation demonstrating that an independently executed verification of CCAR models, whether purchased or developed in-house, has been implemented and that the models perform as expected and align with design and business use. Model validation should be performed independently of designers, developers, and users. Validators should comprehensively evaluate inputs, processing, outputs, and reports to ensure that models are conceptually sound and that potential limitations have been identified and conveyed to senior management. Management should also implement ongoing monitoring processes to track known limitations and to identify new ones, and should analyze and backtest outcomes between model forecasts vs. actual results. Validation should be governed by robust policies, effective procedures, proper allocation of resources for execution, and accurate documentation of results.

### **Independent Review**

Internal audit should periodically assess and document whether the CCAR process is functioning as intended. Beyond the detailed analysis of the performance of forecasting models, this includes an end to end review of the entire capital planning and forecasting process including assessments of process governance, the detail and quality of reporting, the process through which CCAR deficiencies are



identified, tracked, and remediated, and generally whether the program is functioning in a manner consistent with established policies.

## **X. Pre-Provision Net Revenue (PPNR)**

### **A. General Technical Details**

This document provides general guidance and data definitions for the three PPNR worksheets included in the Summary Schedule: PPNR Projections worksheet, PPNR Net Interest Income (NII) worksheet, and PPNR Metrics worksheet. The three worksheets are described in detail below.

Certain commonly used terms and abbreviations, including PPNR, are defined at the end of this section. Other definitions are embedded in the Schedule. Undefined terms should be assumed to follow FR Y-9C definitions. In cases where FR Y-9C guidance is unavailable, BHCs should use internal definitions and include information about the definitions used in the supporting documentation for FR Y-14A projections.

All line item definitions and identification numbers are consistent between the Y-14A and Y-14Q and data should be reported accordingly. Where specific FR Y-14 PPNR and/or FR Y-9C guidance exists for business line and/or other items, provide both historical and projections data consistently throughout time in accordance with the instructions. If a BHC has not done so in prior filings, restate and resubmit. If a BHC is unable to consistently adhere to definitions, it can rely on internal definitions at the present time. Note in such cases which FR Y-14 PPNR items were affected, which quarters were affected, describe the reasons, and note how the situation may be remedied over time (including estimate of time required). Where BHCs were instructed or allowed to rely on internal definitions in mapping internal data to FR Y-14 PPNR schedules (historical and/or projections), they do not need to provide consistency across different quarters at the present time. However, identify all quarters where major shifts in mapping have occurred historically or are expected to occur during the projection period, describe such shifts, and provide pertinent information in the memo supporting the FR Y-14A submission. Such information may include, but is not limited, to the internal business line relationships to a) major client segments (and how those are defined e.g. sales thresholds, asset size thresholds, etc.), b) major product categories, and c) key types of revenues (e.g. equity investment income, brokerage commissions, etc.), as well as the motivations behind the shifts.

All quarterly figures should be reported on a quarterly basis (not on a year-to-date basis).

Provide data for all non-shaded cells, except where the data requested is optional. The BHC is not required to populate cells shaded gray.

If there are no data for certain fields, then populate the fields with a zero (0). If the fields are optional and a BHC chooses not to report data, leave the fields blank.

### **Materiality Thresholds**

BHCs for which deposits comprise less than 25 percent of total liabilities for any period reported in any FR Y-14Q should complete the PPNR Projections worksheet as well as the Metrics by Business Segment/Line and “Firm-Wide Metrics: PPNR Projections Worksheet” sections of the PPNR Metrics worksheet. The Net Interest Income worksheet is optional for these BHCs.

All other BHCs should complete all three worksheets, including the Net Interest Income worksheet and the Net Interest Income worksheet section of the PPNR Metrics worksheet.

Report data for all quarters for a given business segment in the PPNR Projections and PPNR Metrics worksheets if the total revenue of that business segment (calculated as the sum of net interest income and non interest income for that segment), relative to total revenue of the BHC exceeded 5 percent in any of the most recent four actual quarters as provided by the BHC in the FR Y-14Q. BHCs have the option to report less material business segment revenue in separate line items "Optional Immaterial Business Segments". The reported total optional immaterial business segment revenue relative to total revenue cannot exceed 10 percent. If the total immaterial business segment revenue relative to total revenue would be greater than 10 percent in any of the most recent four actual quarters as provided by the BHC in the FR Y-14Q, report data for the largest business segment among the immaterial business segments for all quarters in the PPNR Projections and PPNR Metrics worksheets such that the amount reported in the Optional Immaterial Business segments line items does not exceed 10 percent. BHCs should provide comprehensive information in the supporting documentation on which business segments are included in the Optional Immaterial Business segments line items in both FR Y-14Q and FR Y-14A schedules, their relative contribution to the totals reported in both schedules and the manner in which the revenues were projected for FR Y-14A purposes.

If international revenue exceeded 5 percent of total revenue in any of the most recent four actual quarters as provided by the BHC in the FR Y-14Q, provide regional breakouts (PPNR Metrics worksheet, line items 46A-46D) for all quarters in the PPNR Metrics worksheet.

If International Retail and Small Business revenues exceeded 5 percent of Total Retail and Small Business Segment revenue and Total Retail and Small Business Segment revenues were material based on an applicable 5 percent threshold in any of the most recent four actual quarters as provided by the BHC in the FR Y-14Q, provide related metrics data for all quarters (PPNR Metrics worksheet, line item 10).

#### **Net Interest Income: Primary and Supplementary Designation**

BHCs are expected to report all line items for all worksheets subject to applicable thresholds as detailed in the instructions. In addition, for all BHCs that are required to complete the *PPNR Net Interest Income* worksheet, the *PPNR Net Interest Income* worksheet should be designated as "Primary Net Interest Income." The PPNR Submission worksheet for such BHCs will be "Supplementary Net Interest Income" by default. For BHCs that are not required to complete the *PPNR Net Interest Income* worksheet the *PPNR Submission/Projections* worksheet should be designated as "Primary Net Interest Income." PPNR Net Interest Income Worksheet will be "Supplementary Net Interest Income" for such BHCs by default, but is optional. Note that this designation would refer only to the net interest income portion of the worksheets.

#### **B. PPNR Projections Worksheet**

The PPNR Projections worksheet is based on standardized reporting of each component of PPNR, using business segment/line views as discussed below. Data reflecting a BHC view of PPNR revenues and expenses should be provided separately, accompanying the memo required with the FR Y-14A Projections.

#### **Revenue Components**

Revenue items are divided into net interest income and non-interest income, with totals expected to reconcile with what would be reported in the FR Y-9C when adjusted for Valuation Adjustment for firm's

own debt under fair value option (FVO), loss resulting from trading shock exercise (if applicable), and operational risk expense adjustments required for PPNR purposes. For related items, reference PPNR Projections worksheet and related instructions for the line items 29, 40, and 42. In the documentation supporting the FR Y-14A PPNR submission, BHCs are encouraged to discuss operational risk losses reported as contra-revenues for FR Y-9C purposes and their reallocation to Operational Risk expense in accordance with the PPNR instructions. Do not report gains and losses on AFS and HTM securities, including other than temporary impairments (OTTI) estimates, as a component of PPNR.

Report all items either in the segments that generated them and/or segments that they were allocated to through funds transfer pricing (FTP). Net interest income allocation to the defined segments should be based on the cost of funds applicable to those segments as determined by the BHC. Supporting documentation regarding methodology used should be provided in the memo required with the FR Y-14A Projections. Business segments and related sub-components do not have to correspond to but may include certain line items on the FR Y-9C schedule. The Business segment structure of the worksheet is defined by product/service (e.g. credit cards, investment banking) and client type (e.g. retail, medium size businesses); it is not defined by client relationship.

BHCs are encouraged to note which line items contain Debit Valuation Adjustments (DVA) and/or Credit Valuation Adjustments (CVA) (note: these are different from fair value adjustment on the BHC's own debt under the Fair Value Option (FVO) which is excluded from PPNR by definition), including amounts if available, and whether these are generated with the purpose to generate profit.

All revenue and expenses related to mortgage servicing rights (MSRs) and the associated non-interest income and non-interest expense line items should be evolved over the nine quarter projection horizons, and reported in the pre provision net revenue (PPNR) schedules.

### **Business Segment Definitions**

Subject to applicable thresholds, reporting of net interest income and non-interest income items is requested based on a business segment/line view, with business segments/lines defined as follows<sup>10</sup>:

- Retail and Small Business Banking and Lending Services: Report in the appropriate sub-item all revenues related to retail and small business banking and lending, including both ongoing as well as run-off and liquidating businesses<sup>11</sup>. Exclude any revenues related to Wealth Management/Private Banking (WM/PB) clients. BHCs may include such revenues in WM/PB line items instead. In case of WM/PB mortgage repurchase contra-revenues, if any, report them as outlined in the PPNR Submission worksheet.

As general guidance, small business clients are those with annual sales of less than \$10 million. Business, government, not-for-profit, and other institutional entities of medium size are those with annual sales between \$10 million and \$2 billion. Large business and institutional entities are those with annual sales of more than \$2 billion. If a BHC's internal reporting for these client

<sup>10</sup> As noted earlier, data reflecting a BHC view should be provided separately, accompanying the memo required with the FR Y-14A Projections.

<sup>11</sup> See "Commonly Used Terms and Abbreviations" for the definition.

segments deviates from this general guidance, continue to report according to internal definitions and describe how the BHC defined these or similar client segments and the scope of related business segments/lines (internal and those defined in the FR Y-14 PPNR worksheets) in the memo supporting the FR Y-14A submission.

Business lines are defined as follows:

*Domestic:*

- **Credit Cards:** Domestic credit and charge cards offered to retail customers. Exclude other unsecured borrowing and debit cards. May include revenue that is generated on domestic accounts due to foreign exchange transactions.
- **Mortgages:** Domestic residential mortgage loans offered to retail customers.
- **Home Equity:** Domestic Home Equity Loans and Lines of Credit (HELOANS/HELOCs) provided to retail customers.
- **Retail and Small Business Deposits:** Domestic branch banking and deposit-related products and services provided to retail and small business customers. Include debit card revenues in this line. May include revenue that is generated on domestic accounts due to foreign exchange transactions.
- **Other Retail and Small Business Lending:** Other Domestic Retail and Small Business lending products and services. These include but are not limited to small business loans, auto loans, student loans, or personal unsecured credit.

*International Retail and Small Business:*

Includes, but is not limited to, all revenues from credit/charge/debit cards, mortgages, home equity, branch and deposit services, auto, student, and small business loans generated outside of the US and Puerto Rico.

- **Commercial Lending:** Report revenues from lending products and services provided to business, government, not-for-profit, and other institutional entities of medium size, as well as to commercial real estate investors and owners. Exclude treasury, deposit, and investment banking services provided to commercial lending clients.
- **Investment Banking:** Report in the appropriate sub-item all revenues generated from investment banking services provided to business and institutional entities of both medium and large size. Include revenues from new issue securitizations for third parties. Business lines are defined as follows:
  - **Advisory:** Corporate strategy and financial advisory, such as services provided for mergers and acquisitions (M&A), restructuring, financial risk management, among others.
  - **Equity Capital Markets:** Equity investment banking services (e.g. IPOs or secondary offerings).
  - **Debt Capital Markets:** Generally non-loan debt investment banking services.
  - **Syndicated/Corporate Lending:** Lending commitments to larger corporate clients, including event or transaction-driven lending (e.g. to finance M&A, leveraged buyouts, bridge loans). Generally, all syndicated lending origination activity should be included here (not in Commercial Lending).
- **Merchant Banking/ Private Equity:** Report revenues from private equity (PE), real estate, infrastructure, and principal investments in hedge funds. May include principal investment related to merchant banking activities.

- Sales and Trading: Report in the appropriate sub-item all revenues generated from sales and trading activities. Any interest income from carry should be included in Sales & Trading net interest income. May include short-term trading made for positioning or profit generation related to the Sales & Trading activities in this line item. Business lines are defined as follows:
  - Equities: Commissions, fees, dividends, and trading gains and losses on equity products. Exclude prime brokerage services.
  - Fixed Income: Commissions, fees, and trading gains and losses on rates, credit, and other fixed income products. Exclude prime brokerage services.
    - Rates: Generally U.S. Treasury, investment grade sovereign, U.S. agency bonds, and interest rate swaps. Rates revenues related to trading activities outside of the Sales & Trading division need not be included into the Rates trading in this section, but describe where they are allocated in the BHC's documentation supporting the FR Y-14A submission.
    - Credit: Generally corporate bonds, loans, ABS, muni, emerging markets, CDS. If a BHC classifies some of the credit related trading (such as distressed debt) in segments other than "Sales & Trading," it can continue to report it as in its internal financial reports but indicate where they are reported in the documentation supporting FR Y-14A submission.
    - Other: e.g. FX/Currencies if not included above.
  - Commodities: Commissions, fees, and trading gains and losses on commodity products. Exclude prime brokerage services.
  - Prime Brokerage: Securities financing, securities lending, custody, clearing, settlement, and other services for hedge funds and other prime brokerage clients. Include all prime brokerage revenues in this line and not in any other business segments/lines.
- Investment Management: Report in the appropriate sub-item all revenues generated from investment management activities. Business lines are defined as follows:
  - Asset Management: Professional management of mutual funds and institutional accounts. Institutional clients may include endowments, not-for-profit entities, governments, and others.
  - Wealth Management/Private Banking (WM/PB): Professional portfolio management and advisory services for individuals. Individual clients may be defined as mass market, affluent, and high net worth. Activities may also include tax planning, savings, inheritance, and wealth planning, among others. May include deposit and lending services to WM/PB clients here. Also include retail brokerage services. May report retail brokerage revenues for both WM/PB and non WM/PB clients. here
- Investment Services: Report in the appropriate sub-item all revenues generated from investment servicing. Exclude prime brokerage revenues. Business lines are defined as follows:
  - Asset Servicing: Custody, fund services, securities lending, liquidity services, collateral management; and other asset servicing. Include record keeping services for 401K and employee benefit plans, but exclude funding or guarantee products offered to such clients.
  - Issuer Services: Corporate trust, shareowner services, depository receipts, and other issuer services.
  - Other Investment Services: Clearing and other investment services.
- Treasury Services: Report cash management, global payments, working capital solutions, deposit services, and trade finance from business and institutional entities of both medium and large size. Include wholesale and commercial cards.

- Insurance Services: Report revenues from insurance activities including, but not limited to, individual (e.g. life, health), auto and home (property and casualty), title insurance and surety insurance, and employee benefits insurance.
- Retirement/Corporate Benefit Products: Report premiums, fees, and other revenues generated from retirement and corporate benefit funding products, such as annuities, guaranteed interest products, and separate account contracts. The fees/revenues that may be recorded here are generally generated as a result of the BHC accepting risks related to actuarial assumptions or the estimation of market returns where guarantees of future income streams have been made to clients.
- Corporate/Other: Report revenues associated with:
  - Capital and asset-liability management (ALM) activities. Among other items, may include investment securities portfolios (but not gains and losses on AFS and HTM securities, including OTTI, as these are excluded from PPNR by definition). Also may include principal investment supporting the corporate treasury function to manage firm-wide capital, liquidity, or structural risks.
  - Run-off or liquidating businesses<sup>12</sup> (but exclude retail and small business run-off/liquidating businesses, per Retail and Small Business segment definition)
  - Non-financial businesses (e.g. publishing, travel services)
  - Corporate support functions (e.g. Human Resources, IT)
  - Other non-core revenues not included in other segments (e.g. intersegment eliminations).

A BHC may include public funds in the segment reporting based on the type of the relationship that exists between the public funds and the BHC. For example, if the BHC acts in a custodial or administrative capacity, the BHC may report public funds in Investor Services. If a BHC is involved in the management of funds, the BHC may report the public funds in “Investment Management.”

### **Non-Interest Expense Components**

Non-Interest Expense figures are to be broken out as detailed on the worksheet. The total is expected to reconcile with what would be reported in the FR Y-9C when adjusted for certain items. As presented on the PPNR worksheets, the adjustments include exclusions of goodwill impairment and adjustments related to operational risk expense required for PPNR purposes. For the related items, reference PPNR Projections worksheet and related instructions for the line items 29 and 41.

Expense data on the PPNR Submission worksheet are only intended to be reported as firm-wide BHC expenses, with exception of line item 34A, i.e. Marketing Expense for Domestic Credit Cards. This line item is for Domestic Credit Cards business line only. See the description of the Domestic Credit Card business line in the Business Segment Definitions section of the document.

<sup>12</sup> See “Commonly Used Terms and Abbreviations” for the definition.

### **C. PPNR Net Interest Income (NII) Worksheet**

BHCs for which deposits comprise 25 percent or more of total liabilities for any period reported in any FR Y-14Q are required to submit the Net Interest Income worksheet. This worksheet requires BHCs to provide average asset and liability balances and average yields to calculate net interest income. The total net interest income calculated should equal the total net interest income reported using a business segment/line view in the PPNR Projections worksheet.

The average balances and rates are meant to reflect the average over each quarter as best as possible. The Federal Reserve understands that because of changes in balances over the period, the simple multiplication of average loan rates and balances may not yield the actual interest income. In these cases, the BHCs may report the average loan rate so that it equals a weighted average rate over the period and the interest income total for each quarter reflects historical results or the BHC's projection, as applicable. If the average rates are materially impacted by large shifts in balances over the period, highlight this in documentation supporting the FR Y-14A submission.

#### **Average Interest Bearing Assets**

BHCs should reference FR Y-9C and other definitions provided in the PPNR Net Interest Income worksheet when completing this section. Align the asset categories definitions, where no FR Y9C code is provided, with those on the Balance Sheet worksheet of the FR Y-14A Summary Schedule. In the case of loans, align definitions with the "total loans" section of the Balance Sheet worksheet. Note that the definitions for Large Commercial Credits and Small Business (Graded) are too aligned with Balance Sheet definitions (e.g. in the current reports, consistent with CCAR 2012 Balance Sheet worksheet). However, on the Net Interest Income worksheet, exclude from the balances reported loans that are classified as nonaccrual. The aggregate total of all nonaccrual loans should be reported on the PPNR Metrics worksheet instead (line item 55). Although the metric aggregates all nonaccruals for reporting purposes, BHCs are encouraged to provide details on the nonaccrual loans by Balance Sheet worksheet definition, if available, in the documentation supporting their FR Y-14A submission.

#### **Average Interest Bearing Liabilities**

For the classification of liabilities, BHCs should report based on internal definitions (those deemed to best represent the behavior characteristics of deposits).

### **D. PPNR Metrics worksheet**

The PPNR Metrics worksheet requests information on certain metrics relevant for the assessment of various components of PPNR. Elements in Section C of the PPNR Metrics worksheet (line items 55-85B) are required only for BHCs that must complete the Net Interest Income worksheet. All other metrics are required of all BHCs, subject to applicable thresholds.

Metrics in Section A, "Metrics by Business Segment/Line," correspond to Business Segments/Lines on PPNR Submission worksheet. This means that each metric is reflective of revenues reported on the PPNR Submission worksheet for a given business segment/line, unless explicitly stated otherwise (e.g. line item 2). In contrast, Sections B and C are both for firm-wide metrics.

In providing industry market size information, BHCs can use third party data and are not required to independently derive these metrics. Any supporting information should be described in detail, including the data source, and corresponding data should be provided in the worksheet.

BHCs should use internal definitions of proprietary trading and clearly describe the covered activities and transactions in methodology narratives.

If a BHC is unable to provide a metric on PPNR Metrics worksheet, it should offer a data series for alternative metrics that are considered by the BHC in projecting the relevant component(s) of PPNR and include in the documentation memo required with the FR-14A Projections a discussion of why the standard metric could not be provided.

#### **E. Commonly Used Terms and Abbreviations**

- Domestic Revenues: Revenues from the US and Puerto Rico only.
- International Revenues: Revenues from regions outside the US and Puerto Rico.
- Pre-provision Net Revenue (PPNR): Sum of net interest income and non-interest income net of non-interest expense, with components expected to reconcile with those reported in the FR Y-9C when adjusted for certain items. As presented on the PPNR schedules, the adjustments include exclusions of Valuation Adjustment for BHC's debt under fair value option (FVO), goodwill impairment, loss resulting from trading shock exercise (if applicable), as well as adjustments related to operational risk expense required for PPNR purposes. For the related items, reference the PPNR Projections worksheet and related instructions for the line items 29, 40-42. Gains and losses on AFS and HTM securities, including other than temporary impairments (OTTI) estimates, are not a component of PPNR. All revenue and expenses related to mortgage servicing rights (MSRs) are components of PPNR to be reported in the associated noninterest income and non-interest expense line items on the PPNR schedules.
- Run-Off or Liquidating Businesses: operations that do not meet an accounting definition of "discontinued operations" but which the BHC intends to exit.
- Revenues: Sum of net interest income and non-interest income adjusted for selected exclusions, as reported on line item 27 of the PPNR Projections worksheet.

#### **F. Supporting Documentation**

##### **PPNR Documentation**

The supporting document should be titled

**BHCRSSD\_BHCMNEMONIC\_PPNR\_METHODODOLOGY\_YYMMDD**. Separate documents may be submitted for different models and/or methodologies. In this case, title the documents:

**BHCRSSD\_BHCMNEMONIC\_PPNR\_METHODODOLOGY\_MODELTYPE\_YYMMDD**.

Each methodological memo should clearly describe how a BHC approached the PPNR projection process and translated macro-economic factors into the reported projections.

##### **Projected Outcomes**

- 1) Provide an explanation summarizing the reasonableness of projected outcomes relative to the stated macroeconomic scenario, business profile, as well as regulatory and competitive environment. Especially in the more adverse scenario(s), include substantial supporting evidence for PPNR estimates materially exceeding recently realized values.
- 2) BHCs should discuss linkages between PPNR projections and the balance sheet as well as other exposure assumptions used for related loss projections.



- 3) Include discussion of PPNR outcomes by component (i.e. Net Interest Income, Non Interest Income, and Non Interest Expense) and by major source of each component (e.g. by major balance/rate category, type of revenue/expense, and/or business activity).
- 4) Consideration should be given to how changes in regulation will impact the BHC's revenues and expenses over the projection period. The memo should include a section that addresses how recent or pending regulatory changes have impacted projected figures and business strategies and in which line items these adjustments are reflected.

### **Models and Methodology**

- 1) The documentation should include a full list of all models and parameters used to generate projections of PPNR components for CCAR purposes and whether these models are also used as part of other existing processes (e.g. the business-as-usual budgeting and forecasting process). Where existing processes are leveraged, discuss how these are deemed appropriate for stress testing purposes, including any modifications that were necessary to fit a stressful scenario. Also discuss those items that are particularly challenging to project and identify limitations and weaknesses in the process.
- 2) Thorough discussion of use of management/expert judgment, including information about rationale and process involved in translation of macroeconomic scenario variables into projections of various PPNR components should be provided. Where a combination of a modeled approach and management judgment was used to project an item, quantify the impact of qualitative adjustments to modeled output.
- 3) Provide support for all key assumptions used to derive PPNR estimates, with a focus on the link of these assumptions to projected outcomes and whether the assumptions are consistent with the stated macroeconomic scenario, regulatory and competitive environment as well as business strategies for each of major business activities. Document the impact of assumptions concerning new growth, divestitures or other substantial changes in business profile on PPNR estimates. In cases where there is a high degree of uncertainty surrounding assumptions, discuss and reference sensitivity of projections to these assumptions. Also ensure that all relevant macro-economic factors used for PPNR projections are also reported on the firm submitted Scenario Schedule.
- 4) In addition to broad macro-economic assumptions that will guide the exercise, it is expected that more specific assumptions will be used by BHCs in projections of PPNR, including macro-economic factors other than those provided by the Federal Reserve System as well as BHC specific assumptions. Such assumptions and their link to reported figures, standardized and/or BHC business segments and lines should be discussed in the methodology memo.
- 5) Where historical relationships are relied upon (e.g. ratios of compensation expense to total revenues), BHCs are expected to document the historical data used and describe why these relationships are expected to hold true in each scenario, particularly under adverse conditions.
- 6) Projecting future business outcomes inevitably relies on the identification of key relationships between business metrics and other explanatory variables. Key limitations and difficulties encountered by the BHC in the process to model these relationships should be identified and discussed in the memo.
- 7) Highlight changes in various aspects of BHC's PPNR forecasting models and methodology, primarily focusing on the changes that occurred since the last CCAR submission.

### **Projections Governance and Data**

- 1) BHCs are asked to describe governance aspects for the PPNR projections development. This includes but is not limited to a description of:
  - a. The roles of various business lines and management teams involved in the process
  - b. How the projections are generated. Particular attention should be given to how the BHC ensures that assumptions are consistent across different business line projections, how assumptions are translated into projections of revenue and expenses, and the process of aggregating and reporting the results.
  - c. Senior management's involvement of the process and the process in which the assumptions are vetted and challenged.

Also note whether established policies and procedures are in place related to this process.

- 2) Also include a separate section devoted to any divergence from the instructions in completing the PPNR worksheets in the FR Y-14A and FR Y-14Q Schedules. Use this section to explain any data that is missing or not provided as requested. Use this section to discuss major instances where judgment was used to interpret PPNR instructions.
- 3) Discuss general data validation and reconciliation practices here as they pertain to FR Y-14Q/A submissions. PPNR is defined as the sum of net interest income and non-interest income net of non-interest expense, with components expected to reconcile with those reported in the FR Y-9C when adjusted for certain items (see "Commonly Used Terms and Abbreviations" section of FR Y14-Q/A PPNR instructions for guidance for such items). BHCs are encouraged to include information allowing confirmation that the data were reported per the PPNR definition. Documentation should discuss consistency of a given schedule with the BHC's external reporting and internal reporting and forecasting. Provide a description of broadly-defined types of business models currently used (e.g. Asset/Liability, Relationship, Business Product/Services/Activity as defined or named by the BHC). Provide reconciliation between BHC reporting used to manage and forecast operations and a standardized business segment/line view required for FR Y-14A reporting. Note if allocation methodologies were used when providing data for PPNR worksheets in FR Y-14A/Q Schedules.
- 4) Highlight changes in various aspects of BHC's PPNR forecasting governance and data, primarily focusing on the changes that occurred since the last CCAR submission.

#### **Other**

- 1) BHCs are also expected to address items requested in the Supporting Documentation portion of the Overview section (beginning on page 4) as applicable to PPNR if not already addressed per PPNR documentations guidance as stated above.
- 2) Other sections of the FR Y-14A and FR Y-14Q PPNR Instructions request additional information and supporting documentation. Please ensure that these items are also referenced and described in this memo. For example, include a discussion of small/medium/large business segmentation, as noted in section "B. PPNR Projections Worksheet."
- 3) BHCs are encouraged to submit any other information and documentation (including data series) that would support of the BHC's PPNR projections. One example of such information would be identification and discussion of major deviations of BHC historical performance from forecasted figures, focusing on the last four quarters and noting items that the BHC regards as non-recurring and/or non-core. Where applicable, it would be useful to reference this additional supporting information in the memo outlined above.

#### **MSR Projection Documentation**

The supporting document should be titled

**BHCRSSD\_BHCMNEMONIC\_MSR\_METHODODOLOGY\_YMMMDD**. Separate documents may be submitted for different models and/or methodologies. In this case, title the documents:

**BHCRSSD\_BHCMNEMONIC\_MSR\_METHODODOLOGY\_MODELTYPE\_YMMMDD**. The documentation should address the questions outlined below.

## 1. Models and Methodologies

- Describe the models and related submodels that were used to complete the submission, and please state whether the model is a third-party vendor or proprietary model.
  - Income/Expense/Valuation Engine
  - Prepayment Model
  - Default Model
  - Delinquency Model
  - Hedging Simulation
- If a vendor model was used, please provide the name of the vendor model. If a vendor model was used, has the BHC performed an independent review of the vendor model?
- Has the model undergone rigorous model validation, with results reviewed independently of the business line?
- Has any performance testing been conducted on the model? If so, what type of performance testing has been conducted?
- What data sources were used to calibrate each model?
- What were the key inputs/variables and how were these determined?
- How did the model (whether vendor or proprietary) incorporate macroeconomic assumptions?

## 2. Assumptions

- For each quarter, what new loan capitalizations and amortizations are assumed over both the baseline and supervisory stress scenarios?
  - How were the new loan capitalization forecast assumptions developed?
  - What excess spread assumptions were made with respect to new loan capitalizations in each scenario and how was this assumption derived (e.g., historical buy-up/buy-down grids, etc.)?
  - How were HARP assumptions, if any, estimated?
  - What market share is assumed, and does this change within the stress scenario?
  - Does the submission include any MSR sales or purchases under the supervisory stress? If yes, please provide detail.
- What is the composition of the underlying portfolio of loans serviced for others with respect to the following, and how does this composition change (if at all) during the supervisory stress scenario?
  - i. Loan type
  - ii. Geographical region
  - iii. FICO score
- How were macroeconomic assumptions as prescribed under the supervisory baseline and stress scenarios used to determine the respective projected loan prepayment, delinquency, and default experience for each quarter?
- How were macroeconomic assumptions that were not prescribed under the supervisory baseline and stress scenarios (for example, interest rate volatility, option adjusted spreads, primary to secondary spreads) used to determine the respective projected loan prepayment, delinquency, and default experience for each quarter?

- What are the voluntary prepayment speeds (e.g., conditional prepayment rates (CPRs) associated with refinancing) assumed for each quarter in the respective baseline and supervisory stress scenarios? Do not include constant default rates (CDRs).
- What are the factors that drive or explain the level and trend in prepayment speeds through the nine quarters over the baseline and supervisory stress scenarios?
- What are the default rates assumed for each quarter in the respective baseline and supervisory stress scenarios?
- What are the factors that drive or explain the level and trend in default rates through the nine quarters over the baseline and supervisory stress scenarios?
- How were the assumptions regarding cost of service with respect to both the baseline and stressed scenarios derived?
- Was inflation incorporated into the projection?
- What is the servicing cost structure on a per loan basis on a base and incremental basis for each level of delinquency? What are the foreclosure costs per loan?
- Does the cost structure per loan stay the same throughout the nine quarters with the number of delinquent loans changing, or do both change?
- What foreclosure time frames are used in the baseline scenario? Do these lengthen or contract in the supervisory stress?
- Is late fee income included in the submission?
  - If so, what is the BHC's actual late fee income structure, as well as waiver policy if applicable?
  - What is the late fee income assumed in the baseline and stress scenarios?
  - Is it assumed that late fees are 100% collectable in the stress scenario?
- Are earnings on escrow and other balances included in the submission?
  - If yes, how are the balances forecasted, and what is the crediting rate?
- Is cost to finance advances to investors relating to delinquent loans incorporated in the submission?
  - If yes, how is the borrowing rate determined?

### 3. Hedging and Rebalancing

- Are MSR hedges assumed to be rebalanced or rolled-over at any time during the nine quarter CCAR horizon? How often are hedges assumed to be rebalanced or rolled-over? What is the timing of such rebalancing or roll-over trades?
- What are the hedge rebalancing and/or roll-over rules applied during the baseline and stress scenarios?
- Are the hedge rebalancing and/or roll-over rules applied in the baseline and stress scenarios consistent with the firm's risk appetite statement and Board/management approved limit structure?
- To what degree does hedge effectiveness decline in the stress scenarios? How was this estimated?
- How is the impact of hedging instrument bid-ask spreads captured in the submission? To what degree does the bid-ask spread widen in the stress scenario? How was this estimated?
- How does the firm account for the liquidity risk from concentrated hedge positions?
- What is assumed regarding collateral requirements?
- What are the current risk tolerance limits with respect to MSR hedging?