

Oracle® Regulatory Capital Manager

User Guide

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Oracle Regulatory Capital Manager User Guide, Release 11i

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Contents

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Preface

1 Introduction to Oracle Regulatory Capital Manager

Overview of Oracle Regulatory Capital Manager and Basel Accord	1-1
Oracle Regulatory Capital Manager Solution	1-2
Application Components	1-2
Solution Components	1-6
Using Oracle Regulatory Capital Manager	1-7
Producing Results Under Multiple Scenarios	1-7
Stress Testing	1-9

2 Calculating Capital Requirements for Credit Risk Under the Standardized Approach

Overview of Credit Risk and the Standardized Approach	2-1
Determining Risk Weights	2-2
Asset Class Categorization	2-3
Credit Ratings and Country Risk Scores	2-3
Risk Weight Adjustments	2-4
Determining Net Exposures	2-4
On-balance Sheet Exposures	2-4
Off-balance Sheet Commitments	2-5
Over the Counter Derivatives	2-5
Applying Credit Risk Mitigation Techniques	2-6
Currency Conversion	2-6
Collateral	2-6
On-balance Sheet Netting	2-10
Repo-Style Netting Agreements	2-12
Calculating Final Net Exposure Value	2-16
Calculating Risk Weighted Assets	2-17
Calculating Risk Weighted Assets for Cash, Cash in Process and All Other Assets	2-18
Calculating Required Capital	2-18

3 Calculating Capital Requirements for Credit Risk Under the Internal Ratings Based Approach

Overview of Credit Risk and the Internal Ratings Based Approach	3-1
Asset Classes	3-1
Non-Retail Corporates, Sovereign, and Bank Assets	3-2
Determining Risk Components for Corporates, Bank, and Sovereign Exposures	3-3
Risk Functions	3-6
Guarantees and Credit Derivatives	3-8
Retail Assets	3-9
Credit Risk Mitigation	3-9
Retail Purchased Receivables	3-9
Defaulted Assets	3-10
Equity	3-10
Simple Risk Weight Method	3-10
Internal Model Method	3-10
Probability of Default or Loss Given Default Methods	3-11
Total Risk Weighted Assets and Required Capital Calculation	3-11
Historical Default Date	3-11
Securitization	3-12

4 Calculating Capital Requirements for Operational and Market Risk

Overview of the Calculation Process of Required Capital for Operational and Market Risks	4-1
Deriving Required Capital for Operational Risk	4-1
Basic Indicator Approach	4-2
Standardized Approach	4-2
Advanced Measurement Approach	4-3
Calculating Risk Weighted Assets	4-4
Using Internal Controls Manager for Standardized and Advanced Measurement Approaches	4-4
Deriving Required Capital for Market Risk	4-5
Migration of Market Risk Data to the Financial Ledger	4-5
Currency Conversion	4-6
Calculating Risk Weighted Assets	4-6

5 Common Rule Management Tasks

Overview of Common Rule Management Tasks	5-1
Searching for Rules	5-1
Creating Rules	5-2
Viewing and Updating Rules	5-3
Duplicating Rules	5-3
Deleting Rules	5-4

6 Working with Rule Approval Status

About Rule Approval and Production Data Sets	6-1
The Rule Approval Process	6-2

The Rule Deletion Process	6-2
7 Regulatory Capital Manager Methodology Elections	
Overview of Regulatory Capital Manager Methodology Elections	7-1
Selecting Rules	7-1
Creating a Regulatory Capital Manager Methodology Elections Rule	7-2
Creating a Version	7-3
Creating Credit Risk Attribute Set Definition.	7-4
Procedure to Define Credit Risk Methodology	7-4
Procedure to Define Asset Classes	7-4
Procedure to Define Organizational Units	7-7
Modify Configuration Settings	7-7
Procedure to Configure the Regulatory Capital Percent Value	7-8
Procedure to Configure the Standardized Approach Values	7-8
Procedure to Configure the Risk Components Values	7-9
Procedure to Configure the Risk Function Values	7-10
Procedure to Configure the Haircuts Values	7-11
Procedure to Configure the Operational Risk Values	7-11
Defining Operational Risk Methodology Settings.	7-12
Duplicating Rules and Versions.	7-13
8 Regulatory Capital Manager Process Rule	
Overview of Regulatory Capital Manager Process Rule	8-1
Selecting Rules	8-1
Creating a Regulatory Capital Manager Process Rule	8-2
Creating a Version	8-3
Running a Process Rule	8-4
Procedure to Execute a Process Rule	8-4
9 Generating Regulatory Capital Manager Reports	
Overview of Regulatory Capital Manager Reports	9-2
Accessing Regulatory Capital Manager Reports	9-2
Customizing Reports	9-3
List of Reports	9-3
Distributing Reports	9-6
Analysis of Total Credit Risk Required Capital by Portfolio Risk Weighted Under Different Methodologies	9-6
Disclosure of Capital Requirements for Equity Risk Using Internal Ratings Based Approach	9-11
Disclosure of Capital Requirements for Market Risk	9-13
Disclosure of Capital Requirements for Operational Risk	9-14
Total Credit Exposure and Average Gross Credit Risk Exposure Broken Down by Product Type	9-16
Total Credit Exposure Broken Down by Geography and Product Type	9-17
Analysis of Credit Risk Exposure Broken Down by Industry and Product Type	9-19

Analysis of Credit Risk Exposure Broken Down by Residual Contractual Maturity and Product Type	9-20
Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography	9-22
Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry	9-24
Reconciliation of Changes in the Allowances for Loan Impairment	9-25
Analysis of Outstandings for Exposures Subject to Standardized Approach by Risk Bucket Split Between Externally Rated and Not Externally Rated	9-27
Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for High Volatility Commercial Real Estate and Specialized Lending Products	9-29
Disclosure of Nominal Exposure and Undrawn Exposure by Credit Risk Methodologies	9-31
Disclosure of Each Portfolio Across Probability of Default Grades of Exposure, Default Weighted Average Loss Given Default, and Default Weighted Exposure at Default	9-34
Analysis of Estimates Against Actual Outcomes over a Longer Period	9-37
Analysis of Publicly Traded and Privately Traded Equity Investments by Carrying Value, Fair Value, and Market Value	9-41
Analysis of Gains and Losses from Sales and Liquidations in Other Reporting Periods, and Realized Gains and Losses in Tier 1 and Tier 2 Capital	9-43
Analysis of Equity Exposures for Banks Broken Down by Groupings, Provisions, Supervisory Transactions, and Grandfathering	9-44
Total Gross Credit Exposures, Which are Covered by On-balance Sheet Netting, Collateral, Guarantees, and Credit Derivatives	9-47
Disclosure of the Operational Risk Charge Before and After any Reduction in Capital from Insurance (Advanced Measurement Approach Only)	9-49
Analysis of Net Income or Market Value for Upward and Downward Rate Shocks	9-50
Disclosure of the Capital Requirements for Interest Rate Risk, Equity Position Risk, Foreign Exchange Risk, and Commodity Risk	9-52
Disclosure for Each Internal Model Approach Portfolio of Aggregated, High, Mean, and Low Value-at-Risk Values and Comparison with Actual Outcomes	9-54

A Business Line Data

Overview of Business Line Data	A-1
Business Line Alpha and Beta Factors	A-1
Operational Risk Data	A-2

B Seeded Lookup Tables

Overview of Seeded Lookup Tables	B-1
Credit Rating Tables	B-2
Credit Conversion Factors	B-12
Haircuts	B-13
Minimum Holding Period	B-15
Multiplier Table.	B-15
Collateral Type Table	B-16
Equity Risk Weights	B-16
Provision Ratio	B-16
Current Exposure Method	B-16
Slotting Criteria Approach	B-17

Slotting Criteria Approach Adjusted	B-17
Internal Ratings Based Collateral Table	B-17

C Basel II Reports

List of Reports	C-1
---------------------------	-----

D Standard Navigation Paths

Standard Navigation Paths	D-1
-------------------------------------	-----

Glossary

Index

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Oracle Regulatory Capital Manager User Guide, Release 11i

Part No. B14435-01

Oracle welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

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Preface

Intended Audience

Welcome to Release 11i of the *Oracle Regulatory Capital Manager User Guide*.

This guide contains the information needed to use Oracle Regulatory Capital Manager.

See Related Documents on page xii for more Oracle Applications product information.

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Structure

1 Introduction to Oracle Regulatory Capital Manager

This chapter gives you an overview of the Oracle Regulatory Capital Manager solution.

2 Calculating Capital Requirements for Credit Risk Under the Standardized Approach

This chapter gives you detailed information related to calculation of capital requirements for credit risk under the standardized approach using the Oracle Regulatory Capital Manager solution.

3 Calculating Capital Requirements for Credit Risk Under the Internal Ratings Based Approach

This chapter gives you detailed information related to calculation of capital requirements for credit risk under the internal ratings based approach using the Oracle Regulatory Capital Manager solution.

4 Calculating Capital Requirements for Operational and Market Risk

This chapter gives you detailed information related to calculation of capital requirements for operational and market risks using the Oracle Regulatory Capital Manager solution.

5 Common Rule Management Tasks

This chapter focuses on the rule management tasks that are common across all rules in this application.

6 Working with Rule Approval Status

This chapter discusses the rule approval process and the procedure for managing approved rules.

7 Regulatory Capital Manager Methodology Elections

This chapter gives you detailed information related to creation and usage of methodology elections rules in the Oracle Regulatory Capital Manager solution.

8 Regulatory Capital Manager Process Rule

This chapter gives you detailed information related to creation and usage of process rules in the Oracle Regulatory Capital Manager solution.

9 Generating Regulatory Capital Manager Reports

This chapter gives you detailed information related to Oracle Regulatory Capital Manager reports.

A Business Line Data

This appendix gives you information about the business line alpha and beta factors.

B Seeded Lookup Tables

This appendix gives you information about different seeded lookup tables.

C Basel II Reports

This appendix gives you information about the various Basel II reports.

D Standard Navigation Paths

This appendix gives you information to navigate through the RCM application pages referred to in this guide.

Glossary

Related Documents

You can choose from many sources of information, including online documentation, training, and support services, to increase your knowledge and understanding of Oracle Regulatory Capital Manager.

If this guide refers you to other Oracle Applications documentation, use only the Release 11*i* versions of those guides.

Online Documentation

All Oracle Applications documentation is available online (HTML or PDF).

- **PDF Documentation:** See the Oracle Applications Documentation Library CD for current PDF documentation for your product with each release. The Oracle Applications Documentation Library is also available on *OracleMetaLink* and is updated frequently.
- **Online Help:** Online help patches (HTML) are available on *OracleMetaLink*.
- **About Documents:** Refer to the About Document for the mini-pack or family pack that you have installed to learn about new documentation or documentation patches that you can download. About Documents are available on *OracleMetaLink*.

Guides Related to All Products

- **Oracle Applications User's Guide:** This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes. You can access this user guide online by choosing *Getting Started with Oracle Applications* from any Oracle Applications help file.

Guides Related to This Product

- **Oracle Regulatory Capital Manager Data Dictionary:** This dictionary describes in detail the structure and content of different tables and related information used in Oracle Regulatory Capital Manager.
- **Oracle Financial Services Implementation Guide:** This guide provides information about setting up the 11*i* releases of Oracle Financial Services (OFS) applications.
- **Oracle Enterprise Performance Foundation User Guide:** Use this guide to learn more about Oracle Enterprise Performance Foundation, which provides the data model infrastructure and user interface components to the 11*i* releases of Oracle Financial Services (OFS) applications.
- **Oracle Discoverer 4i Plus User's Guide:** Use this guide to learn more about Oracle Discoverer, which is the tool you use to generate reports for Basel Pillar III requirements.
- **Oracle Workflow User's Guide:** This guide describes how Oracle Applications users can view and respond to workflow notifications and monitor the progress of their workflow processes.

Installation and System Administration

- **Oracle Applications Concepts:** This guide provides an introduction to the concepts, features, technology stack, architecture, and terminology for Oracle Applications Release 11*i*. It provides a useful first book to read before installing Oracle Applications. This guide also introduces the concepts behind Applications-wide features such as Business Intelligence (BIS), languages and character sets, and Self-Service Web Applications.

- **Installing Oracle Applications: A Guide to Using Rapid Install:** This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle Rapid Install, which minimizes the time to install Oracle Applications and the technology stack by automating many of the required steps. This guide contains instructions for using Oracle Rapid Install and lists the tasks you need to perform to finish your installation. You should use this guide in conjunction with individual product users' guides and implementation guides.
- **Upgrading Oracle Applications:** Refer to this guide if you are upgrading your Oracle Applications Release 10.7 or Release 11.0 products to Release 11*i*. This guide describes the upgrade process and lists database and product-specific upgrade tasks. You must be either at Release 10.7 (NCA, SmartClient, or character mode) or Release 11.0, to upgrade to Release 11*i*. You cannot upgrade to Release 11*i* directly from releases prior to 10.7.
- **Maintaining Oracle Applications Documentation Set:** Use this guide to help you run the various AD utilities, such as AutoUpgrade, AutoPatch, AD Administration, AD Controller, AD Relink, License Manager, and others. It contains how-to steps, screenshots, and other information that you need to run the AD utilities. This guide also provides information on maintaining the Oracle Applications file system and database.
- **Oracle Applications System Administrator's Documentation Set:** This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage concurrent processing.
- **Oracle Alert User's Guide:** This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.
- **Oracle Applications Flexfields Guide:** This manual provides flexfields planning, setup, and reference information, as well as information on creating custom reports on flexfields data.

Other Implementation Documentation

- **Oracle Workflow Administrator's Guide:** This guide explains how to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes, as well as how to monitor the progress of runtime workflow processes.
- **Oracle Workflow Developer's Guide:** This guide explains how to define new workflow business processes and customize existing Oracle Applications-embedded workflow processes. It also describes how to define and customize business events and event subscriptions.
- **Oracle Workflow API Reference:** This guide describes the API's provided for developers and administrators to access Oracle Workflow.
- **Oracle Applications Developer's Guide:** This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in *Oracle Applications User Interface Standards for Forms-Based Products*. It also provides information to help you build your custom Oracle Forms Developer 6*i* forms so that they integrate with Oracle Applications.

- **Oracle eTechnical Reference Manuals:** Each eTechnical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications and integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on *OracleMetaLink*.

Do Not Use Database Tools to Modify Oracle Applications Data

Oracle **STRONGLY RECOMMENDS** that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using an Oracle Applications form can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Introduction to Oracle Regulatory Capital Manager

This chapter gives you an overview of the Oracle Regulatory Capital Manager solution. This chapter covers the following topics:

- Overview of Oracle Regulatory Capital Manager and Basel Accord
- Oracle Regulatory Capital Manager Solution
- Using Oracle Regulatory Capital Manager

Overview of Oracle Regulatory Capital Manager and Basel Accord

The Basel Committee on Banking Supervision's International Convergence of Capital Measurement and Capital Standards, also referred to in this document as *Basel II* or *Accord*, is a regulatory framework developed by the Bank of International Settlements (BIS) requiring internationally active banks to better manage their risks. The Accord requires internationally active financial services companies to adopt consistent risk management practices for tracking and publicly reporting exposure to operational, credit, and market risks. It also defines the standards by which these companies should assess their regulatory capital requirements.

BIS first introduced regulatory capital standards for the financial services industry in 1988. The 1988 Basel Accord established common minimum regulatory capital standards for internationally active banks. In June 1999, the Bank of International Settlements announced the intention to revise the 1988 Basel Accord as a regulatory response to its lack of risk sensitivity. It is also a response to the significant advances in technology and risk management practices since the original accord was written.

Note: The Oracle Regulatory Capital Manager user guide should be read along with the Accord. This user guide does not take the place of the accord but supplements it. Any content pertaining to the Accord or references to the Accord is based on the June 2004 version of the Accord.

The Accord seeks to strengthen existing capital adequacy standards by introducing more sensitive calculations for credit and market risks, and new capital requirements for operational risk. The Accord also details requirements for the supervisory review process and outlines external disclosure standards. The Accord refers to these areas as the three pillars:

- Pillar One: Minimum Capital Requirement

- Pillar Two: Supervisory Review Process
- Pillar Three: Market Discipline and Reporting

The Oracle Regulatory Capital Manager (RCM) solution was developed to help banks fulfill their Pillar I requirements while still providing the transparency required by Pillars II and III requirements. Banks will use the data generated by RCM to:

- Calculate minimum regulatory capital requirements,
- Meet reporting requirements for external market participants mandated under Pillar III,
- Generate a measure of economic capital for risk and profitability management, and
- Leverage regulatory capital results in capital planning.

The following section describes the components of the Oracle Regulatory Capital Manager solution. See: Oracle Regulatory Capital Manager Solution, page 1-2

Oracle Regulatory Capital Manager Solution

Oracle Regulatory Capital Manager (RCM) solution consists of the Regulatory Capital Manager application components and a number of integrated application solution components, including the Enterprise Performance Foundation data model, the Oracle Internal Controls Manager (ICM), and Oracle Risk Manager (RM), to name a few. Together, these components help financial institutions to comply with the Basel II requirements.

Application Components

Oracle Regulatory Capital Manager consists of the following application components:

- A calculation engine for deriving risk weighted assets and required capital. See: Overview of Credit Risk and the Standardized Approach, page 2-1, Overview of Credit Risk and the Internal Ratings Based Approach, page 3-1, and Overview of the Calculation Process of Required Capital for Operational and Market Risks, page 4-1.
- A user-friendly interface to create rule definitions covering Basel elections, elect and run processing parameters, run stress test scenarios, and manage data dimensions and hierarchies. See: Overview of Regulatory Capital Manager Methodology Elections, page 7-1 and Overview of the Regulatory Capital Manager Process Rule, page 8-1.
- A set of seeded reports to address Basel's external market reporting requirements. See: Overview of Regulatory Capital Manager Reports, page 9-2.

Calculation Engine

The Regulatory Capital Manager (RCM) calculation engine enables financial institutions to calculate credit risk weighted assets and required capital for all asset classes (except securitizations), as defined by the Accord, using either the standardized or the internal ratings based (IRB) approaches. See: Overview of Credit Risk and the Standardized Approach, page 2-1 and Overview of Credit Risk and the Internal Ratings Based Approach, page 3-1 for detailed information.

The calculation engine also enables financial institutions to calculate operational and market risk weighted assets and minimum required capital directly within the

management ledger table. For operational risk, RCM uses one of the following approaches, the Basic Indicator approach, the Standardized approach, or the Advanced Measurement approach. The data is then used to generate seeded reports for minimum required capital. See: Overview of the Calculation Process of Required Capital for Operational and Market Risks, page 4-1.

User Interface

This section describes the various components of the RCM User interface (UI) as listed in the following list. The RCM solution has five different UI sections or tabs under the following headings:

- Home
- Business Rule
- Process Management
- Documents
- Administration

Home

Click Home to display the home page section. This is the default page that you see when you log on to RCM. There are three distinct areas on the home page that you may use navigate through the application.

- The ownership area displays the application name and other information about the application on the top and on the bottom of the page.
- The notifications area displays notifications directed to you.
- The shortcuts area contain a list of headings and links.

Working with Notifications

A notification could be an informational broadcast that requires no response, or a message that requires a response. The notification may also include a link to a document. The Notifications area lists active notifications, ordered by priority and then by date.

- To open and respond to a notification, click Subject.
- To view the complete list of all your notifications, click Full List.
- To sort the list, click the column by which you want to sort: From, Subject, or Sent column heading to sort the list by that column.

See: Overview of Oracle Workflow for Users, *Oracle Workflow User's Guide*.

Business Rule

Click Business Rule to open the business rule section. In this section, you can define the various business rules of RCM. This section has four options.

- Calculation
- Dimension
- Condition
- Data Inspector

Calculation

Through this menu option, you can define the following:

- **Methodology Elections:** In RCM, methodology elections are used to define the regulatory assumptions and business elections for processing calculations. See: *Overview of Regulatory Capital Manager Methodology Elections*, page 7-1.
- **Process Rule:** A process rule defines the processing criteria to be adopted when submitting methodology elections to the calculation engine. See: *Overview of the Regulatory Capital Manager Process Rule*, page 8-1.

Dimension

To properly represent data in client applications, it is necessary to define metadata (data structures that do not contain actual data values) for the dimensions, hierarchies, levels, attributes, and other structures through the dimension and hierarchy management facility. Through this menu option, you can define dimensions and their attributes, add members and levels to them, create hierarchies and set default dimension options. See: *About Dimension and Hierarchy Management*, *Oracle Enterprise Performance Foundation User's Guide*.

Condition

A condition is a business object that filters the source data that is used as input to a business rule. For example, you can apply conditions so that only financial data that match the conditions would be used when you run process rules. As part of a condition, you can define dimension criteria based on a single dimension member, one or more dimension attributes, or a hierarchy on that dimension. You can also define data criteria specific to tables and columns based on specific values, range of values, or comparisons of the column to another column in the specified table. See: *About Conditions*, *Oracle Enterprise Performance Foundation User's Guide*.

Data Inspector

A data inspector rule is a business rule that allows you to view or update data in a specific table or view registered in the *Oracle Enterprise Performance Foundation* data schema. See: *About the Data Inspector and Data Inspector Rules*, *Oracle Enterprise Performance Foundation User's Guide*.

Process Management

Click **Process Management** to open the process management section. In this section, you can group the business rules in data sets, schedule requests, and view the executed rules. This section has three options.

- **Data Set Groups**
- **Requests**
- **Executed Rules**

Data Set Groups

Use data set groups to specify sets of data to use as input and output for processing business rules. You can group multiple input data sets and designate the one corresponding output set. Every process rule designates a single data set group thereby indicating where the RCM calculation engine should read information from and where it should write output to. See: *About Data Set Groups*, *Oracle Enterprise Performance Foundation User's Guide*.

Requests

Use requests to schedule running of business rules and monitoring the status of the scheduled runs. See: *Running Production Data*, page 1-7

Executed Rules

Through this menu option, you can display a list of executed rules with information such as, event date, rule set, output data set, output period, folder name, column name, output record count, user name, request ID, rule results, and undo status. You may also use the executed rule interface to undo concurrent programs that are displayed.

Documents

Click Documents to open the documents section. In this section, you can view the list of Regulatory Capital Manager seeded reports.

Administration

Click Administration to open the administration and setup section. In this section, you can perform functions that allow you to customize the system. This section has three options.

- Tuning Options
- Registration
- Setup

Tuning Options

Through this menu option, you can configure sets of multiprocessing options, or rules, that affect the manner in which the processing engines function. You can use these rules to tune the performance of the engine, in accordance with the tuning options that you define for the rules or rule types. See: *Working with Process Tuning Options*, *Oracle Enterprise Performance Foundation User's Guide*.

Note: In Regulatory Capital Manager, you can only update the number of processes running at a given time and not any other option.

Registration

Through this menu option, you can register the following:

- Object Registration. See: *Performing Object and Column Registration Tasks*, *Oracle Financial Services Implementation Guide*.
- Dimension Administration. See: *Performing Dimension Administration Tasks*, *Oracle Financial Services Implementation Guide*.
- Value Sets. See: *Working with Value Sets*, *Oracle Financial Services Implementation Guide*.
- Global Value Set Combinations. See: *Working with Global Value Set Combinations*, *Oracle Financial Services Implementation Guide*.

Setup

Through this menu option, you can customize the home page. You can specify a system name, add information about the home page, and create shortcuts to external websites. See: *Customizing Home Page*, *Oracle Financial Services Implementation Guide*.

Reports - Seeded and User Defined

These seeded reports allow banks to immediately realize benefits from the business information produced by Regulatory Capital Manager.

Regulatory Capital Manager allows you to leverage Oracle Discoverer Viewer to generate reports, and also custom define reports based on the reporting need. The Regulatory Capital Manager seeded reports address Pillar III requirements for external reporting from the Basel committee.

In addition, banks may develop customized internal reports relative to the specific needs of the organization. See: Overview of Regulatory Capital Manager Reports, page 9-2.

Solution Components

Oracle Regulatory Capital Manager also utilizes and is dependent on the following solution components.

Enterprise Performance Foundation Data Repository

Oracle Enterprise Performance Foundation (EPF) is a Basel II based data model used for Oracle Regulatory Capital Manager. It allows you to compile enterprise wide data into a single integrated data source. The single source of data ensures that enterprise data is internally consistent, easily accessible, and yields optimal performance for processing routines and calculations. Examples of the supported data types are:

- Instrument data
- Customer data
- General Ledger data
- Risk mitigation data
- Dimensional data
- Incident data
- Multiple scenario inputs
- Risk weighted assets
- Historical data
- Limits and loss provision data

Oracle Warehouse Builder

Institutions may leverage data that exists in their legacy systems using extraction, transformation, and loading (ETL) routines built in Oracle Warehouse Builder. At a system level, ETL comprises a significant portion of the Pillar I requirements. Banks must appropriately categorize, define, and qualify each asset in a manner consistent with the Basel framework. The data required for Basel II comes from multiple, unrelated systems such as limits or exposure management systems, loan processing systems, general ledger, and collateral management systems. Oracle Warehouse Builder enables the consolidation and cleansing of this data.

Oracle Internal Controls Manager

Under Basel II, companies are required to report regularly on internal processes and procedures to demonstrate regulatory compliance. Oracle Internal Controls Manager

is the central application for implementing, tracking, and auditing an internal control environment. Internal Controls Manager consists of the following:

- Self-assessment
- Risk library
- Audits
- Tutor and workflow integration

Oracle Risk Manager

Oracle Risk Manager allows financial institutions to analyze interest rate risk, forecast balance sheets, and perform asset valuation. Organizations may use Risk Manager output to help satisfy the required external market reporting requirements under Pillar III and to address Pillar II requirements surrounding interest rate risk in the banking book.

Enterprise Risk Platform

The Enterprise Risk Platform allows third party risk applications to write information to and read information from the e-Business Suite Data Store. Regulatory Capital Manager will facilitate interfaces with enterprise risk vendors to integrate advanced credit, market, and operational risk analytics.

Oracle Workflow

Oracle Workflow efficiently manages tasks required to effect Basel II compliance by moving data in and out of the data store. Workflow has been integrated with ICM and RCM to allow financial institutions to put processes and procedures into practice. Workflow also contains business rules that allow banks to deploy workflows based on business events.

Using Oracle Regulatory Capital Manager

Oracle Regulatory Capital Manager (RCM) allows you to generate results by running process rules under multiple scenarios.

RCM also allows you to change risk weights and other lookup tables information referred by the calculation engine. See: *Running a Process Rule*, page 8-4

Producing Results Under Multiple Scenarios

The different scenarios that you can generate or undo results from while running process rules are:

- *Running Production Data*, page 1-7
- *Undoing Production Data*, page 1-8

Running Production Data

A production data set is defined as one for which the production flag attribute has been set to yes for a data set member. A rule can write results to a production data set only if the status of the rule is approved. Rules that have not been approved can write results only to nonproduction data sets. See: *About Rule Approval and Production Data Sets*, page 6-1.

The basic steps for running production data are:

1. Create dimensions or hierarchies. See: *About Dimension and Hierarchy Management, Oracle Enterprise Performance Foundation User's Guide.*
2. Create data set groups. See: *Creating Data Set Groups, Oracle Enterprise Performance Foundation User's Guide.*
3. Extract data from source systems and load data to interface tables. See: *Introduction to Interface Tables and External Data Loaders, Oracle Enterprise Performance Foundation User's Guide.*
4. Run data loaders and move data from interface tables to target tables. See: *Introduction to Interface Tables and External Data Loaders, Oracle Enterprise Performance Foundation User's Guide.*
5. Create methodology elections rule. See: *Creating a Regulatory Capital Manager Methodology Election Rule, page 7-2.*
 1. Submit rule for approval.
6. Create a process rule. See: *Creating a Regulatory Capital Manager Process Rule, page 8-2.*
 1. Submit rule for approval.
7. Run the process rule. See: *Running a Process Rule, page 8-4.*
8. View the request ID log for errors.
9. If errors exist, fix data using the Undo rule and reprocess. See: *Undoing Production Data, page 1-8.*

Undoing Production Data

The basic steps for undoing production data are:

1. Navigate to the Schedule Request page.
2. Select Executed Rule Request Removal as the program name.
3. Enter the request name.
4. Enter the request ID for process or rule that you want to undo.

Note: You can find the request ID when reviewing the request processed from the Monitor Requests page.

5. Select the request ID folder.
6. Set Include Dependencies to Yes.
7. Set Ignore Dependency Errors to No.
8. Set the schedule information.
9. Set the notifications.
10. Set the printing information.
11. Review the information before submitting.

Stress Testing

Stress testing involves identifying possible events or future changes in economic conditions that may have an unfavorable effect on your credit risk profile. Stress testing requires the modeling of events to determine potential fluctuations in your capital requirement. You must import the modeling information into the RCM solution. Refer to Part 2, Section III - H and Section 3 of the Accord on stress testing requirements.

Important: These requirements are highly variable from jurisdiction to jurisdiction.

You must calculate risk weighted assets and required capital based on at least two different scenarios. The source of these different scenarios can be two-fold:

1. Under the internal ratings based (IRB) approach, you must stress test advanced risk components of probability of default (PD), loss given default (LGD), and exposure at default (EAD) values, that is, advanced credit conversion factors, to make sure that their capital assessments are reliable. You associate various risk component sets with data set IDs during configuration, and you also select the data set to be processed through the preferences section.
2. You can define different assumptions through the methodology elections rules. These assumptions might produce different results. See: Creating a Process Rule, page 8-2.

Stress testing consists of using multiple sets of risk components with one set of account data. This is accomplished in RCM by using two input data sets referred to as the *input data set* and *risk component data set*.

The data set group acts as a wrapper associating all data sets to a group for reporting or processing. A data set group tells the engine what combination of input and risk data sets to process, which output data set identifier to write to results tables, or what combination of input or output data sets to view for reports.

- Input Data Set: Account and ledger data that is loaded from source systems.
- Risk Component Data Set: Risk component data for the IRB methodology.
- Output Data Set: Results that are calculated through the application are assigned to this data set.

The following table shows an example of how data sets and data set groups are combined for stress testing.

Production Run

Production Data Set Group	Description
Input Data Set	Production Data Set (Data Set 1)
Risk Component Data Set	Production Risk Component Data Set (Data Set 100)
Output Data Set	Production Output Data Set (Data Set 2)

The following table shows an example of how stress testing is performed by using modified input variables, such as PD, LGD, and CCFs values, and by varying the risk component data set and using a unique output data set.

Stress Test Scenario

Stress Test Data Set Group	Description
Input Data Set	Stress Test Data Set (Data Set 1)
Risk Component Data Set	Stress Test Risk Component Data Set (Data Set 200)
Output Data Set	Stress Test Output Data Set (Data Set 50)

Note: Risk Component data sets should be different from input data sets on the instrument tables.

Calculating Capital Requirements for Credit Risk Under the Standardized Approach

This chapter gives you detailed information related to calculation of capital requirements for credit risk under the standardized approach using the Oracle Regulatory Capital Manager solution.

This chapter covers the following topics:

- Overview of Credit Risk and the Standardized Approach
- Determining Risk Weights
- Determining Net Exposures
- Applying Credit Risk Mitigation Techniques
- Calculating Required Capital

Overview of Credit Risk and the Standardized Approach

Credit Risk is the risk associated with the possibility that a borrower will not meet their contractual obligations within the required time. To provide a buffer against losses from credit risk, the Bank of International Settlements has mandated that banks hold funds (referred to as regulatory capital) to offset potential credit losses. Banks may calculate regulatory capital by multiplying risk weighted assets (RWA) by their set required capital ratio, generally 8%. The Basel II offers banks two methods for calculating risk weighted assets: The Standardized (STD) approach, and the Internal Ratings Based (IRB) approach. The calculations for the IRB approach will be described in the following chapter. See: Overview of Credit Risk and the Internal Ratings Based Approach, page 3-1.

Note: This section does not detail the text of Basel II, but instead defines the process for calculation of risk weighted assets and regulatory capital in RCM. Users define the various elections that configure these calculations using the methodology elections which is described in the following chapters. See: Overview of Regulatory Capital Manager Methodology Elections, page 7-1 and Overview of the Regulatory Capital Manager Process Rule, page 8-1 on how the capital requirements that are calculated in this chapter are applied.

The standardized approach presents the simplest methodology for calculating risk weighted assets. This approach is for financial institutions that either do not have the analytical sophistication required by the IRB approaches, or do not meet the

requirements for use of those approaches. Under the STD approach, risk weighted assets are calculated by multiplying an instrument's final net exposure by a derived risk weight.

The system performs the following steps to calculate risk weighted assets (RWA):

1. Determining Risk Weights, page 2-2.
 1. Asset Class Categorization, page 2-3.
 2. Credit Ratings and Country Risk Scores, page 2-3.
 3. Risk Weight Adjustments, page 2-4.
2. Determining Net Exposures, page 2-4.
 1. On-balance Sheet Exposures, page 2-4.
 2. Off-balance Sheet Commitments, page 2-5.
 3. Over the Counter Derivatives, page 2-5.
3. Applying Credit Risk Mitigation Techniques, page 2-6.
 1. Currency Conversion, page 2-6.
 2. Collateral, page 2-6.
 1. Simple Approach, page 2-7.
 2. Comprehensive Approach, page 2-7.
 3. On-balance Sheet Netting, page 2-10.
 4. Repo-Style Netting Agreements, page 2-12.
 1. Standardized Approach, page 2-12.
 2. Internal Ratings Based Approach, page 2-14.
 3. Migration, page 2-15.
 5. Calculating Final Net Exposure Value, page 2-16.
 6. Calculating Risk Weighted Assets, page 2-17.
 7. Calculating Risk Weighted Assets for Cash, Cash in Process and All Other Assets, page 2-6.
4. Calculating Required Capital, page 2-18.

Determining Risk Weights

Risk weights are percentage factors that approximate the riskiness of an exposure. The risk weight determination process is prescribed by the Accord. Lower risk weights represent less risk while higher risk weights represent more risk. The variables that determine the exact risk weight for a given asset are the asset type, credit ratings, and certain other regulatory or bank options.

Risk weight percentages are stored in lookup tables. The methodology election rules specifies which lookup tables to use for certain calculations. Based on a given methodology election rule definition, the calculation engine will obtain the appropriate risk weight to use for each asset class from the seeded lookup tables. See: Overview of Regulatory Capital Manager Methodology Elections, page 7-1. After a given risk weight is determined, the information is stored in the results table and later used to calculate

risk weighted assets. The following sections describe the three components listed later in this section, which are used to determine risk weights:

- Asset class categorization
- Credit ratings and country risk scores
- Risk weight adjustments

Asset Class Categorization

Under the standardized (STD) approach, the primary determinant of risk weight is the asset class of the exposure. The asset class is a regulatory categorization based on customer group (for example, sovereign, corporates) and, in certain cases, product type such as real estate. Asset classes serve as a grouping mechanism for riskiness based on these two categorizations. Refer to Part 2, Section II - A of the Accord.

The following list represents the set of asset classes under the STD approach. The EPF data model represents the asset class as a dimension on the instrument tables (Items 1 - 11 later in this section) or as an attribute on the ledger table (Items 12 - 14).

1. Sovereigns
2. Public sector entities
3. Multilateral development banks
4. Banks
5. Securities firms
6. Corporates
7. Regulatory retail portfolio
8. Residential property
9. Commercial real estate
10. Past due loans
11. Equities
 - Venture capital
 - Private equity
12. Cash and cash equivalents
13. Cash items in process of collection
14. Securitization
15. All other assets

Credit Ratings and Country Risk Scores

Based on the various assets classes, the Accord assigns risk weights based on external credit ratings. Financial institutions will import one credit rating or country risk score per instrument into the system as part of the extract and load process (i.e., S & P, BBB, or Moody's Aaa). See: Credit Rating Tables, page B-2 for a list of seeded credit ratings values. If a financial institution subscribes to more than one external credit assessment institutions ratings, it should refer Part 2, Section II - B of the Accord.

Risk Weight Adjustments

Once the risk weight is determined, adjustments are made to risk weights for unrated exposures in the bank and corporates asset classes. Unrated exposures are those exposures that do not have an approved external credit rating associated with it. The following two rules are applied to unrated exposures in the bank and corporates asset classes.

1. Adjustment based on short-term credit ratings: (For bank and corporates asset classes) For a given customer, if a short-term rated exposure attracts a 50% risk weight, unrated short-term claims cannot attract risk weights lower than 100%. In addition, when any short-term exposure has a risk weight of 150%, all unrated claims whether long-term or short-term, should also receive a 150% risk weight. Refer to paragraph 104 of the Accord.
2. Adjustment based on sovereign ratings: (For bank asset class only) No unrated bank instrument may receive a risk weight less than that applied to instruments on its sovereign of incorporation. Therefore, the bank's unrated risk weight must be compared with its sovereign risk weight and modified accordingly. Refer to paragraph 60 of the Accord.

The methodology elections user interface offers users the ability to turn off these adjustments during processing within the configuration settings area under the standardized approach. See: Modify Configuration Settings, page 7-7.

Determining Net Exposures

The Regulatory Capital Manager calculation engine makes certain adjustments to the gross exposure value to arrive at a net exposure value in the standardized approach. These adjustments are based on the broad product category of the exposure:

- On-balance Sheet Exposures
- Off-balance Sheet Commitments
- Over the Counter Derivatives

Note: The terms *exposure* and *asset* are used interchangeably throughout the following sections and refers to a financial asset that are exposed to credit risk.

On-balance Sheet Exposures

On-balance sheet exposures are recorded in accounting books. For these items, the exposure value is the book value of the outstanding balance of the instrument. Instruments considered to be on-balance sheet exposures include financial instruments such as commercial & consumer loans, mortgages, leases, and equity investments. To calculate the on-balance sheet exposure value, the outstanding balance of an on-balance sheet exposure needs to be netted against a specific provision, a value that is either loaded during the extract process or manually updated through a data inspector after instrument data has been loaded. Specific provisions (also known as specific allowances) are reserves allocated by banks to cover anticipated losses from specific asset accounts. Refer to Part 2, Section II - A of the Accord. The STD approach recognizes specific provisions whereas the IRB approach does not.

On-balance Sheet Exposure = Outstanding Balance - Specific Provision

Off-balance Sheet Commitments

Off-balance sheet exposures consist of assets that are not recognized in an organization's balance sheet. These types of exposures are potential lendings. Off-balance sheet exposures consist of financial instruments such as letters of credit (LC), undrawn credit lines, and undrawn commitments. Although off-balance sheet items do not expose credit risk immediately upon issuance, they have the potential for a borrower to draw these funds at any time. For this reason, banks are held accountable for an adjusted value based on the forecasted likelihood that the borrower would borrow funds. Off-balance sheet exposures will be converted to credit exposure equivalents through the use of credit conversion factors (CCFs). CCFs are percentage values predefined by the Accord that convert commitment balances into an adjusted, for example, *forecasted* exposure value. CCFs are determined through lookup tables based on the maturity and the product type of the exposure. Refer to paragraphs 82 - 89 of the Accord.

The process to calculate the credit equivalent exposure is the following:

1. Calculate Undrawn Commitment Value: Subtract outstanding balance from the total commitment value.

$$\text{Undrawn Commitment Value} = \text{Total Commitment Value} - \text{Outstanding Balance}$$

2. Calculate Credit Equivalent Exposure: Multiply credit conversion factor, derived through lookup table, and the undrawn commitment value.

$$\text{Credit Equivalent Exposure} = \text{Credit Conversion Factor} \times \text{Undrawn Commitment Value}$$

Where:

- Credit Conversion Factor: The value based on asset product type and maturity derived through a lookup table, as defined by Basel.

Net Exposure Calculation

Once the system has calculated the off and on-balance sheet exposure values for a given instrument, it must combine these values to derive the net exposure value. This value is calculated by adding the off-balance sheet (credit equivalent) exposure to the on-balance sheet exposure.

$$\text{Net Exposure} = \text{On-balance Sheet Exposure} + \text{Credit Equivalent Exposure}$$

Over the Counter Derivatives

Over the counter (OTC) derivatives are transactions or contracts whose value depends on the performance of an underlying asset such as stocks, bonds, market indices, or foreign currencies. The Accord categorizes OTC derivatives in the banking book as either interest rate contracts or foreign exchange rate contracts. Interest rate contracts include single currency interest rate swaps, basis swaps, forward rate agreements, interest rate futures, interest rate options purchased, and any other similar instruments. Exchange rate contracts include, cross-currency interest rate swaps, forward foreign exchange contracts, currency futures, currency options purchased, and any other similar instruments. OTC derivatives require special treatment because banks are not exposed to credit risk for the full face value of these contracts but only the potential cost of replacing the cash flow, if the counterparty defaults.

For this reason, Net Exposure is calculated differently for OTC derivatives. Net exposure is calculated by multiplying the notional principal amount of the contract by a Basel prescribed add-on factor. This amount is added to the replacement cost of the contract. Refer to 1988 Accord: Annex 3.

$$\text{Net Exposure Over the Counter Derivative} = \text{Replacement Cost} + (\text{Add-On Factor} \times \text{Notional Principal Amount})$$

Where:

Replacement Cost: The mark to market value of the contract.

Add-On Factor: The multiplier based on contract type and maturity derived through a lookup table, as defined by Basel.

Notional Principal Amount: The book value of the instrument.

Applying Credit Risk Mitigation Techniques

Once the net exposure and risk weights have been determined, banks might recognize credit risk mitigants. Credit risk mitigation describes the techniques used by banks to reduce their credit risk. Credit risk mitigation relates to the reduction of credit risk for a transaction by taking collateral, obtaining credit derivatives or guarantees, or taking an offsetting position subject to a netting agreement. How the mitigant is recognized depends primarily on the type of mitigant and the approach elected by the institution. Generally, the mitigant either will reduce the net exposure value of the asset or the risk weight of the asset.

Currency Conversion

Mitigants may be denominated in a different currency from the asset that they mitigate. Therefore, the mitigants value must be converted to the same currency as the asset they are associated with as one of the final steps in determining the exposure value after mitigation. The engine will convert all mitigants to the same currency as the corresponding asset by multiplying the mitigant value by the appropriate exchange rate.

$$\text{Mitigant Value Currency Adjusted} = \text{Mitigant Value} \times \text{Exchange Rate}$$

Where:

Mitigant Value: The value of the credit risk mitigant.

Exchange Rate: The rate derived through a lookup table based on mitigant currency code type and asset currency code type.

Collateral

The Accord defines a collateralized transaction as one in which a credit exposure is hedged in whole or in part by eligible financial collateral. Banks may use the pledged eligible financial collateral to recover loss amounts, if a borrower defaults on their obligation. In this way, banks incur less credit risk through the use of collateral.

The Accord only recognizes the following financial instruments as collateral. Refer to paragraph 145 of the Accord.

1. Cash on deposit.
2. Gold.
3. Debt securities, rated by a recognized external credit assessment institution that meet several rating requirements.
4. Debt securities, not rated by a recognized external credit assessment institution that meet several rating requirements.

5. Equities included in a main index.
6. Undertakings for collective investments in transferable securities and mutual funds.

The method where banks are able to offset the net exposure value with the collateral value is referred to, as the comprehensive approach while the risk weight substitution method is known as the simple approach. Refer to paragraph 145 of the Accord for the criteria that a bank must satisfy to use the comprehensive approach.

Simple Approach

In the simple approach to credit risk mitigation for collateral, that portion of the asset collateralized by the market value of the collateral, receives the risk weight applicable to the collateral instrument. The risk weight substitution takes place only if the collateral risk weight is lower than the exposure risk weight. In those cases, the application of the collateral will result in lower risk weighted asset and required capital amounts. For collateral to be recognized under the simple approach, it must be pledged for the life of the exposure and must be marked to market and revalued every six months. Refer to paragraph 182 of the Accord. Therefore, the system will reject any collateral where the remaining term is less than the remaining term of the asset.

Risk Weight Floors and Exceptions

The Accord has established a risk weight floor of 20% when institutions elect to use the simple approach for collateral. Therefore, the system will generally apply a risk weight floor of 20% to all collateral risk weights. Refer to paragraph 182 of the Accord. However, the Accord specifies circumstances where this risk weight floor is not applicable. Therefore, the system disregards the floor for the following situations and applies the appropriate lower risk weight values.

- Repo-style Transactions: Based on criteria provided in the Accord, the system will assign a risk weight of either 0% or 10% to the collateral of a repo-style transaction. Refer to paragraph 183 of the Accord.
- OTC Derivatives: Based on criteria provided in the Accord, the system would assign a risk weight of either 0% or 10% to the collateral. Refer to paragraph 184 of the Accord.
- All other collateralized transactions: The system will apply a risk weight of 0% to the collateral when the collateral and asset are denominated in the same currency and, either:
 - Collateral is cash on deposit, or
 - Collateral is in the form of sovereign or PSE securities

Per the accord when this second rule is applied the system will also discount the value of the collateral by 20%. Refer to paragraph 185 of the Accord.

Users may elect to change the 20% floor and the exception values through the configuration settings in the methodology elections under the standardized approach tab. See: Modify Configuration Settings, page 7-7.

Comprehensive Approach

In the comprehensive approach, banks might use qualifying collateral to reduce the net exposure value of the credit transaction versus the adjustment to the risk weight under the simple approach.

Under the comprehensive approach, two adjustments are made to exposure and collateral values before the calculation of risk weighted assets and required capital.

- Maturity Mismatch Adjustments
- Haircut Adjustments

Maturity Mismatch Adjustments

In contrast with the simple approach, the comprehensive approach allows for maturity mismatches between collateral and exposure values. A maturity mismatch occurs when a collateral item is pledged for a time period shorter than the remaining maturity of the asset. In this case, the Accord requires the collateral value to be adjusted downward.

The following steps describe the process used to determine qualifying collateral and calculate the effects of maturity mismatches.

1. **Determine Collateral Eligibility:** If the remaining term of the collateral is greater than one year or is equal to or greater than that of the exposure, the collateral qualifies for recognition. If the remaining term of the collateral is greater than one year but less than that of the asset, then a maturity mismatch adjustment must be made to the collateral value. Refer to paragraphs 204 - 205 of the Accord.
2. **Perform Maturity Adjustment:** The maturity adjustment is calculated by dividing the remaining maturity of the collateral by the remaining maturity of the asset and multiplying the result by the collateral. In addition, the Accord limits the maximum term of the asset to five years, so for maturity matches of terms greater than five years, no adjustment is required. Refer to paragraphs 204 - 205 of the Accord.

$$\text{Mitigant Value Maturity Adjusted} = (\text{Remaining Maturity Collateral} - 0.25 / \text{Remaining Maturity Asset} - 0.25) \times \text{Mitigant Value}$$

Where:

Remaining Maturity Collateral: Value expressed in years and cannot be greater than the remaining maturity of the asset.

Remaining Maturity Asset: Value expressed in years and cannot be greater than five years.

Haircut Adjustments

Using haircuts, banks are required to adjust the transaction exposure value upward and the collateral value downwards to account for future volatility in the value of each. The haircuts, which typically scale based on the riskiness of the exposure or collateral, are designed to reflect the volatility of the exposure, the volatility of the collateral received, and to account for any currency volatility, where the exposure and collateral are denominated in different currencies. The following list represents the different types of haircuts.

Exposure Haircut

This haircut would gross the asset value up and reflects the future price movements of the asset due to market volatility. Exposure haircuts such as treasury notes are generally applicable where securities are lent and generally not applicable when the lending is in the form of cash.

Collateral Haircut

This haircut would reduce the collateral value to reflect future price movements of the collateral due to market volatility. The collateral value receives a greater haircut where more risky securities such as equities collateralize a transaction.

Foreign Exchange Haircut

This haircut would further reduce the collateral value over the collateral haircut. The foreign exchange haircut reflects future movements in the exchange rate between the collateral and exposure currencies where a difference exists between the two.

The following steps describe the process used to calculate the appropriate haircuts for the asset and the collateral.

1. Determine Haircuts: There are two methodologies to calculate haircuts: a Supervisory (lookup-based) Approach and an Own Estimate Approach where customers may leverage internal or third-party models to determine appropriate haircuts. Under the Supervisory Approach, each item of Eligible Collateral receives a standard Supervisory Haircut derived through a seeded lookup table. See: Haircuts, page B-13.

Note: The foreign exchange haircut may be modified within the configuration settings area of the methodology elections rule under the haircuts tab.

Alternatively, supervisors may permit banks that satisfy certain minimum standards to use their own internal estimates of volatility haircuts. Refer to paragraphs 154 - 155 of the Accord. These own-estimate values may be directly imported along with account level collateral data for price volatility haircuts or stored in a seeded table for currency haircuts.

2. Perform Haircut Adjustments, if necessary: For a certain transaction, depending on the transaction type and frequency of revaluations or remargining, the Accord requires two haircut adjustments:
 - Holding Period Adjustment
 - Remargining or Revaluation Adjustment

The Accord establishes that the following transaction types have the required minimum holding periods and remargining or revaluation frequency. See: Minimum Holding Period, page B-15 for the lookup table.

- Holding Period Adjustments for Own Estimate Haircuts: When a bank calculates an own-estimate haircut based on a holding period that is different from the above specified minimum holding period, then a revised haircut must be calculated using the square root of time formula. Refer to paragraph 168 of the Accord.

$$\text{Haircut Adjusted} = \text{Haircut} \times (\text{Minimum Holding Period} / \text{Actual Holding Period}) \times 1/2$$

Where:

Haircut: The value derived by the bank using Own Estimate Approach or Supervisory Approach.

Minimum Holding Period: The value based on the transaction type predefined by Basel. See: Minimum Holding Period, page B-15.

Actual Holding Period: The actual holding period used by banks in their models for deriving haircuts.

- Remargining or Revaluation Adjustment: When the frequency of the remargining or revaluation is longer than the minimum provided above, then the haircuts will be scaled upwards. Refer to paragraph 169 of the Accord.

$Final\ Haircut = Haircut\ Adjusted \times (Actual\ Number\ of\ Days + (Minimum\ Holding\ Period - 1)) / Minimum\ Holding\ Period \times 1/2$

Where:

Haircut Adjusted: The value remaining after applying holding period adjustment.

Actual Number of Days: The actual number of days between remargining or revaluation for a given type of transaction.

Minimum Holding Period: The values based on the transaction type predefined by Basel. See: Minimum Holding Period, page B-15.

3. **Zero Haircut Adjustment:** If the transaction type is categorized as a repo-style transaction and the transaction meets certain criteria, then the system will apply a zero haircut. Refer to paragraphs 170-172 of the Accord.
4. **Calculate Haircut Adjusted Mitigant Value:** Once the appropriate haircuts have been determined, then they should be applied to the collateral to determine an adjusted collateral value.

$Mitigant\ Value\ Haircut\ Adjusted = Mitigant\ Value\ Maturity\ Adjusted \times (1 - (Final\ Haircut_{Collateral} - Final\ Haircut_{FX}))$

Where:

Final Haircut_{Collateral}: The haircut value derived after applying holding period and remargining or revaluation adjustments appropriate for the collateral haircut.

Final Haircut_{FX}: The haircut value derived after applying holding period and remargining or revaluation adjustments appropriate for the foreign exchange haircut.

On-balance Sheet Netting

Banks may net offsetting positions of assets (loans) and liabilities (deposits) when several Basel specific requirements have been met. Refer to paragraph 188 of the Accord. On-balance sheet netting follows a similar process as collateral under the comprehensive approach. Assets are treated as exposures and bank liabilities (for example, deposits are treated as collateral). However, in the case of deposit netting, collateral and exposure haircuts do not apply. Only foreign exchange haircuts and if required, the holding period and remargining or revaluation adjustments apply.

Deposits are also subject to maturity mismatch and foreign exchange haircut adjustments. Given the above, the following describe the process for calculating adjusted deposit values for any maturity mismatch or haircuts:

Note: These are the deposit values that are deducted from the net exposure value.

1. **Determine Deposit Eligibility:** If the remaining term of the deposit is greater than one year or is equal to or greater than that of the asset, then the collateral qualifies for recognition. If the remaining term of the deposit is greater than one year but less than that of the asset, then a maturity mismatch adjustment must be made to the deposit value. Refer to paragraphs 204 - 205 of the Accord.
2. **Perform Maturity Adjustment:** Assuming the deposit is eligible, a maturity adjustment may have to be made if the deposit maturity is less than the exposure maturity. The maturity adjustment is calculated by dividing the remaining maturity

of the deposit by the remaining maturity of the asset and multiplying the result by the deposit. In addition, the Accord limits the maximum term of the asset to 5 years. Refer to paragraphs 204 - 205 of the Accord. See: Maturity Mismatch Adjustments, page 2-8.

3. Determine Foreign Exchange Haircuts: The market value of deposits does not fluctuate in contrast to the asset value they are offsetting but when these financial elements are denominated in different currencies the transaction is exposed to fluctuations in exchange rates. Therefore, when a currency mismatch exists between the asset and the deposit, banks must use either an own estimate or supervisory foreign exchange haircut to reduce the deposit value. In addition, the holding period adjustment and remargining or revaluation adjustment, must be applied to this haircut value. Refer to paragraphs 152 and 166 - 169 of the Accord. See: Foreign Exchange Adjustments, page 2-9.
4. Calculate Haircut Adjusted Mitigant Value: Once the appropriate haircuts have been determined, then they should be applied to the deposit to determine an adjusted deposit value.

$$\text{Mitigant Value Haircut Adjusted} = \text{Mitigant Value Maturity Adjusted} \times (1 - \text{Final Haircut}_{FX})$$

Where:

Final Haircut_{FX}: The haircut value derived after applying holding period and remargining or revaluation adjustments appropriate for the foreign exchange haircut.

Guarantees and Credit Derivatives

A guarantee is an agreement to answer for the debt of another party, in case that party defaults. A credit derivative is a financial instrument used to transfer default risk to hedgers and speculators. Since credit derivatives and guarantees are similar in theory (for example, the risk is transferred to another party), both receive the same treatment under the Basel II framework in terms of their application for offsetting credit risk. Guarantees and credit derivatives follow a similar process to that of banks implementing the simple approach for collateral. For the portion of the asset covered by the guarantee or credit derivative, banks may substitute the risk weight of the guarantee or credit derivative for the risk weight of the asset.

Guarantee and credit derivative values are also subject to maturity mismatch and foreign exchange haircut adjustments. The following steps are used to calculate adjusted guarantee or credit derivative values for any maturity mismatch or haircuts:

1. Determine Guarantee or Credit Derivative Eligibility: If the remaining term of the guarantee or credit derivative is greater than one year or is equal to or greater than that of the asset, then the guarantee or credit derivative qualifies for recognition. If the remaining term of the guarantee or credit derivative is greater than one year but less than that of the asset, then a maturity mismatch adjustment must be made to the guarantee or credit derivative value. Refer to paragraphs 204 - 205 of the Accord.
2. Perform Maturity Adjustment: The maturity adjustment is calculated by dividing the remaining maturity of the guarantee or credit derivative by the remaining maturity of the asset and multiplying the result by the deposit. In addition, the Accord limits the maximum term of the asset to 5 years. Refer to paragraphs 204 - 205 of the Accord. See: Maturity Mismatch Adjustments, page 2-8.
3. Determine Foreign Exchange Haircuts: The market value of guarantee or credit derivative do not fluctuate in contrast to the asset value they are offsetting but when

these financial elements are denominated in different currencies the transaction is exposed to fluctuations in exchange rates. Therefore, when a currency mismatch exists between the asset and the guarantee or credit derivative, banks must use either an own estimate or supervisory foreign exchange haircut to reduce the guarantee or credit derivative value. In addition, the holding period adjustment and remargining or revaluation adjustment must be applied to this haircut value. Refer to paragraphs 152 and 166 - 169 of the Accord. See: Foreign Exchange Adjustments, page 2-9.

4. Calculate Haircut Adjusted Mitigant Value: Once the appropriate haircuts have been determined, then they should be applied to the guarantee or credit derivative to determine an adjusted guarantee or credit derivative value. Refer to paragraph 147 of the Accord.

$$\text{Mitigant Value Haircut Adjusted} = \text{Mitigant Value Maturity Adjusted} \times (1 - \text{Final Haircut}_{\text{FX}})$$

Where:

Final Haircut_{FX}: The value derived after applying holding period and remargining or revaluation adjustments appropriate for the foreign exchange haircut.

Repo-Style Netting Agreements

Repo-style netting agreements are calculated using either the standardized (STD) or internal ratings based (IRB) approaches. The following sections explain in detail the calculation process for each of these approaches and the migration of the results.

Standardized Approach

In the standardized approach, you first derive the risk weights, then calculate the exposure value for each risk weights, and finally calculate the risk weighted assets.

Deriving Risk Weights

The risk weight process for master netting agreements will be similar to the process for all other instruments. Risk weight will be based on asset class and credit rating. Each netting agreement will identify all instrument and mitigant records in the agreement with the netting agreement id. Each instrument in the netting agreement must be assigned to the same asset class and have the same credit rating. Therefore the risk weight value will be the same for each instrument record in the master netting agreement. You can choose any instrument record for the risk weight value.

RISK_WEIGHT_1: Derived via lookup table based on asset class and credit rating.

Calculating Exposure Values

You can determine whether to use VaR approach or standard approach via the UI during configuration. Only master netting agreements consisting of repo-style transactions may use the VaR approach to calculate exposure value after credit risk mitigation.

For both processes, the following steps have to be implemented:

1. Group by master netting agreement ID.
2. Calculate net exposure by adding the off-balance and on-balance sheet items for the investment and off-balance sheet tables.
3. Currency Conversion: Where the mitigant and exposure are denominated in a different currency than the settlement currency, convert the mitigant value (MITIGANT_VALUE_MAT_ADJ) and the exposure value (NET_EXPOSURE) to the

same currency as the settlement currency (SETTLEMENT_CURRENCY) using the appropriate currency conversion rate.

Using the VaR equation

$$EXPOSURE_VALUE_AFTER_CRM = \max \{0, [\sum(NET_EXPOSURE) - \sum(MITIGANT_VALUE_MAT_ADJ) + (VALUE_AT_RISK_AMOUNT \times multiplier)]\}$$

Where:

Group each equation by netting agreement ID and sum values.

Multiplier: Derived via lookup table 16 based on NUM_EXCEPTIONS.

NET_EXPOSURE from the Off-balance Sheet and Investments table.

MITIGANT_VALUE_MAT_ADJ from the Collaterals table.

VALUE_AT_RISK_AMOUNT from the MNG table.

Using the Master Netting Agreement equation

$$EXPOSURE_VALUE_AFTER_CRM = \max \{0, [\sum(SUM(E) - SUM(C)) + SUM(E_s \times H_s) + SUM(E_{FX} \times H_{FX})]\}$$

Where:

E = NET_EXPOSURE

C = MITIGANT_VALUE_MAT_ADJ

E_s = MITIGANT_VALUE_MAT_ADJ: Grouped by CUSIP

H_s = FINAL_HAIRCUT_{collateral}

E_{FX} = MITIGANT_VALUE_MAT_ADJ: Grouped by currency other than settlement currency

H_{FX} = FINAL_HAIRCUT_{FX}

The following sub-steps describe the process for calculating exposure value adjusted for credit risk mitigation through the standard approach. The equation is broken into components that are highlighted above each section of the process pertaining to that part of the equation.

4. SUM (E_s × H_s): Calculate the absolute value of the net position in a given security times the appropriate haircut.
 1. Group by security ID (CUSIP).
 2. Calculate the sum securities received (MITIGANT_VALUE_MAT_ADJ from the Collaterals table) subtracted by securities posted (NET_EXPOSURE from the Off-balance Sheet table) for each CUSIP grouping and taking their absolute value.
 3. For each CUSIP grouping, multiply the absolute value with an appropriate haircut value.
 4. Sum the results from all CUSIP groups.
5. SUM (E_{FX} × H_{FX}): Calculate the absolute value of the net position in a currency different from the settlement currency multiplied by the appropriate FX haircut value.

1. Group by currency type where CURRENCY_TYPE does not equal SETTLEMENT_CURRENCY.
2. Add the sum of the exposure (NET_EXPOSURE from the Investments table) and the sum of the securities posted (COMMITMENT_BAL from the Off-balance Sheet table) for each currency type.
3. Add the sum of the cash received (MITIGANT_VALUE_MAT_ADJ from the Collateral table) and the sum of the collateral received (MITIGANT_VALUE_MAT_ADJ from the Collateral table).
4. Subtract the results from step 5b from 5a and then take the absolute value for each currency grouping.
5. For each currency grouping, multiply the absolute value with an appropriate FX haircut value.
6. Sum the results for all currency groupings.
6. SUM (E): Add the sum of the exposure value (NET_EXPOSURE from the Investments table) to the sum of the collateral posted (NET_EXPOSURE from the Off-balance Sheet table).
7. SUM (C): Add the sum of the cash received (MITIGANT_VALUE_MAT_ADJ from the Collaterals table) to the sum of the collateral received (MITIGANT_VALUE_MAT_ADJ from the Collaterals table).
8. EXPOSURE_VALUE_AFTER_CRM: Solve the master netting agreement equation given earlier.

Calculating Risk Weighted Assets

Risk weighted assets are calculated by multiplying any risk weight from the instrument records with the EXPOSURE_VALUE_AFTER_CRM value for the master netting agreement. The following equation represents the necessary calculation.

$$\text{STD_RWA} = \text{RISK_WEIGHT_1} \times \text{EXPOSURE_VALUE_AFTER_CRM}$$

Internal Ratings Based Approach

In the internal ratings based approach, you calculate the probability of default (PD), loss given default (LGD), and maturity (M) values for the risk weights, then the calculation for exposure at default (EAD) value for each risk weights, and finally calculate the risk weighted assets.

Calculating Probability of Default (PD), Loss Given Default (LGD), and Maturity (M)

The risk component process for master netting agreements will be similar to the process for all other instruments. Risk components are derived in the same manner as all other assets in a particular class. Each netting agreement will identify all instrument and mitigant records in the agreement with the netting agreement id. Each instrument in the netting agreement must be assigned to the same asset class and all risk components must be equal. For example, all PD values would be the same for any instrument in the master netting agreement. The solution can choose any instrument record and select the corresponding risk components.

Calculating Exposure at Default (EAD)

EAD is calculated in the same manner as it was calculated for the standardized approach. Banks will determine whether to use VaR approach or Standardized approach through the UI during configuration.

$$EAD = EXPOSURE_VALUE_AFTER_CRM$$

Calculating Risk Function

Risk weighted assets are calculated by inputting the various risk components into the appropriate risk function for a given asset class.

$$IRB_RWA = f(PD, LGD, M, \text{ and } EAD)$$

Where:

EAD = EXPOSURE_VALUE_AFTER_CRM as calculated for master netting agreements.

Migration

The results for master netting agreements differ from the results for other instruments because the risk weighted asset and required capital values for master netting agreements are stored at the total contract level. Therefore the risk weighted asset value for several repo's and reverse repo's associated with a given master netting agreement will be stored as one row on the results table. To migrate these results back to the Instrument table and Ledger at an account level, these results must be broken up and allocated to the appropriate accounts. Risk weighted assets (RWA) and required capital (RC) will be allocated to repo's (investment table) and reverse repo's (Off-balance Sheet table) at the account level. The following steps describe the process to break out the risk weighted asset and required capital for a master netting agreement and allocate these results to the account level.

Allocation

The results will be allocated to repo's and reverse repo's based on the net exposure value for each asset.

$$\text{Percent Allocated} = \text{NET_EXPOSURE} / \text{NET_EXPOSURE_MNG}$$

Where:

NET_EXPOSURE: The net exposure value for a given repo or reverse repo in the master netting agreement.

NET_EXPOSURE_MNG: The total net exposure value of the master netting agreement.

$$RWA_F = \text{Percent Allocated} \times RWA_E_{\text{Master Netting Agreement}}$$

$$ALLOC_CAP_F = \text{Percent Allocated} \times ALLOC_CAP_F_{\text{Master Netting Agreement}}$$

Currency Conversion

To calculate risk weighted assets, all mitigant and assets were converted to the settlement currency of the contract. Therefore, once the percent allocated for each repo or reverse repo is determined, then the risk weighted asset and required capital value should be converted back to the original currency value of the asset.

$$RWA_E = RWA_F \times \text{Currency Conversion Rate}$$

$$ALLOC_CAP_E = ALLOC_CAP_F \times \text{Currency Conversion Rate}$$

Where:

Currency Conversion Rate: The currency rate appropriate to convert asset back to original currency value.

Migration of Results

The solution will first migrate the results for master netting agreements to the Master Netting Agreements table. Then the solution will follow the same process as used for all other instruments and migrate the results first to the instrument tables and then to Ledger table.

Calculating Final Net Exposure Value

The final net exposure value of an asset is the exposure value after applying any appropriate haircuts and subtracting deposits and collateral (when banks elect to use the comprehensive method). More specifically, the system derives the final net exposure value by determining the net exposure value and then performing the steps later in this section.

1. Determine Exposure Haircut: Banks may derive haircuts for exposures using the own estimate approach or the supervisory approach. Exposure haircuts are also subject to any holding period and remargining or revaluation adjustments. Refer to paragraph 147 of the Accord.

- Holding Period Adjustment

$$\text{Haircut Adjusted} = \text{Haircut} \times (\text{Minimum Holding Period} / \text{Actual Holding Period}) \times 1/2$$

Where:

Haircut: The value derived by the bank using own estimate approach or supervisory approach.

Minimum Holding Period: The value based on the transaction type predefined by Basel. See: Minimum Holding Period, page B-15. Refer to paragraph 168 of the Accord.

Actual Holding Period: The actual holding period used by banks in their models for deriving haircuts.

- Remargining or Revaluation Adjustment

$$\text{Final Haircut} = \text{Haircut Adjusted} \times (\text{Actual Number of Days} + (\text{Minimum Holding Period} - 1) / \text{Minimum Holding Period}) \times 1/2$$

Where:

Haircut Adjusted: The value derived after applying holding period adjustment. Refer to paragraph 168 of the Accord.

Actual Number of Days: The actual number of days between remargining or revaluation for a given type of transaction.

Minimum Holding Period: The value based on the transaction type predefined by Basel. See: Minimum Holding Period, page B-15.

2. Calculate Final Net Exposure Value: The net exposure value must first be grossed up by the appropriate exposure haircut. Then, all the deposits and collateral items (Comprehensive approach only) are subtracted from this value to determine the final net exposure value. Refer to paragraph 147 of the Accord.

$$\text{Final Net Exposure} = \max \{0, [\text{Net Exposure} \times (1 + \text{Final Haircut}_{\text{Exposure}}) - \Sigma(\text{Mitigant Value Haircut Adjusted})]\}$$

Calculating Risk Weighted Assets

You are now familiar with the following steps towards calculating risk weighted assets (RWA) and required capital:

- Calculating risk weights for instruments, guarantees, credit derivatives, and collateral.
- Calculating the final net exposure value.

In the case where there is only one mitigant for a given exposure, arriving at the final risk weighted asset value is relatively straightforward. Refer to paragraphs 40 - 43 of the Accord. However, where multiple mitigants of different types apply to a given exposure, the calculation of risk weighted assets may be accomplished in a variety of different ways. In these cases, the RCM engine applies collateral such that the institution receives the optimal reduction in risk weighted assets for a given instrument.

As mentioned earlier, risk weights for guarantees, credit derivatives and collateral (simple approach) may be substituted for the risk weight of the asset for the portion of the asset covered by the mitigant. The application applies these risk weights from the lowest to the highest. The following table provides an example to illustrate how credit risk mitigants would be applied to a given exposure.

Applying Credit Risk Mitigants to an Exposure

Asset/Mitigants	\$ Value	Risk Weight	Weight	Weighted Average Risk Weight	Risk Weighted Assets	Minimum Required Capital @ 8%
Net exposure value	1,200,000					
Adjusted netted deposit value	200,000					
Exposure valueless deposits	1,000,000	75%	100%			
Adjusted collateral value	200,000	0%	20%	0%		
Adjusted credit derivative value	300,000	50%	30%	15%		
Adjusted guarantee value	200,000	50%	20%	10%		
Uncovered loan (Asset) value	300,000	75%	30%	22.5%		
Weighted average risk weight under the simple approach	1,000,000			52.5%	\$525,000	\$42,000
Risk weighted assets under the comprehensive approach	800,000			27.5%	\$325,000	\$26,000

The system will calculate risk weighted assets for the exposure by multiplying the final net exposure value by the weighted average risk weight.

Calculating Risk Weighted Assets for Cash, Cash in Process and All Other Assets

To process ledger based assets, you need to include an attribute on the line item dimension for that would classify line items as:

- Cash & Cash Equivalents
- Cash Items in Process of Collection
- All Other Assets

Note that the full asset class structure is not implemented on the ledger and the attribute would be the same for both IRB and Standardized approaches.

The following table lists the calculation for risk weight for each line item for credit risk weighted assets.

Calculating Risk Weights

Line Item	Risk Weight	Credit Risk Weighted Assets
Cash & Cash Equivalents	0%	FE100 to FE3100
Cash Items in Process of Collection	10%	FE100 to FE3100
All Other Assets	100%	FE100 to FE3100

The 0%, 10%, and 100% risk weights are derived from the standardized lookup table for these asset classes.

Note: The system will also need to calculate capital for credit risk based on the calculated/imported RWAs for other assets = FE3100 * capital_percent (as specified in the calculation rule). The process rule will allow the user to specify whether or not to be able to calculate capital from RWA.

Note: The system would calculate the RWA for all of the above asset classes based on functional currency. The process rule will specify whether these amounts (both the RWA and capital) should be translated to entered currency values.

Calculating Required Capital

Total risk weighted assets (RWA) are calculated by adding RWA from the various asset classes, and adding this total to the securitized RWA . See: Securitization, page 3-12. Credit risk regulatory capital is calculated by multiplying the required capital percent, generally 8%, by the risk weighted asset value. Banks may adjust the required capital percent value through the methodology elections user interface under the configuration settings area. Refer to paragraph 40 - 43 of the Accord.

Required Capital = Risk Weighted Assets x Required Capital Percent

Calculating Capital Requirements for Credit Risk Under the Internal Ratings Based Approach

This chapter gives you detailed information related to calculation of capital requirements for credit risk under the internal ratings based approach using the Oracle Regulatory Capital Manager solution.

This chapter covers the following topics:

- Overview of Credit Risk and the Internal Ratings Based Approach
- Non-Retail Corporates, Sovereign, and Bank Assets
- Retail Assets
- Defaulted Assets
- Equity
- Total Risk Weighted Assets and Required Capital Calculation
- Historical Default Date
- Securitization

Overview of Credit Risk and the Internal Ratings Based Approach

Banks can also use the Internal Ratings Based (IRB) approach to calculate risk weighted assets to meet the requirements established by the Accord. Similar to the standardized approach, the IRB approach categorizes exposures into asset classes. These asset classes determine the overall process used to calculate risk weighted assets. In the standardized approach, the asset classes only determine the risk weight, whereas in the IRB approach, the asset class determines the methodology used to calculate risk weighted assets. Each of these methodologies is described later in the chapter.

Asset Classes

Under the IRB approach, banks are required to categorize exposures into the following broad classes of assets during the extract and load process. See: Introduction to Interface Tables and External Data Loaders, *Oracle Enterprise Performance Foundation User's Guide*. These asset classes are assumed to have different underlying credit risk characteristics. Refer to Part 2, Section III - B.1 of the Accord. The classes consists of the following:

- Non-Retail: Sovereign
- Non-Retail: Bank
- Non-Retail: Corporates
 - Specialized Lending
 - Project Finance (PF)
 - Object Finance (OF)
 - Commodities Finance (CF)
 - Income Producing Real Estate (IPRE)
 - High Volatility Commercial Real Estate (HVCRE)
- Retail: Residential Mortgage
- Retail: Qualifying Revolving Exposures
- Retail: All Other
- Equity

Note: Assets that do not fall under these classifications such as other assets and cash-in process are treated as under the standardized approach using the risk weight approach.

Non-Retail Corporates, Sovereign, and Bank Assets

For the majority of exposures that reside in the corporates, sovereign, and bank asset classes, risk weighted assets are calculated by entering four different risk components into a risk function:

- Probability of Default (PD), page 3-3: The likelihood that counterparties on an exposure will not meet the contractual obligations of the exposure.
- Loss Given Default (LGD), page 3-3: The percentage loss that is expected at default.
- Exposure at Default (EAD), page 3-5: The likely value of the exposure at default.
- Maturity, page 3-5: The remaining term of the exposure.

The Accord allows you to calculate these values using:

- Foundation approach: You internally estimate the probability of default associated with a borrower grade, and rely on the supervisory rules for the estimation of other risk components.
- Advanced approach: You internally estimate two additional risk components: LGD and EAD

Just as the system enables you to choose between the standardized and internal ratings based approaches at the business unit level, it also permits you to apply for various risk components at an organizational unit level. This flexibility allows you to adopt a hybrid approach for calculating risk weighted assets during a transitional period between approaches or for a phased roll-out of more advanced approaches across an organization. Refer to Part 2, Section III - B.4 of the Accord.

Determining Risk Components for Corporates, Bank, and Sovereign Exposures

This section outlines the various methodologies for determining each of the risk components for corporates, bank, and sovereign exposures under the IRB approach.

Probability of Default Method

Probability of Default (PD) measures the likelihood that a borrower will default in the next year. Since the Accord does not distinguish between a foundation and advanced approach with regards to probability of default, you are required to determine this value using internal models, and import this value into the system. Each estimate of PD must represent a conservative view of a long-run average PD for the borrower grade in question and must be backed by historical experience and empirical evidence. You must review the PD estimates on a yearly basis and meet various requirements established by the Accord. Refer to paragraphs 461 - 463 of the Accord.

By default, the solution will apply a 0.03% PD floor to assets in the corporates and bank asset classes to meet the requirements of the Accord. Refer to paragraph 285 of the Accord. You can edit this floor value from the Configuration Settings page in the Methodology Elections user interface. See: Procedure to Configure the Risk Components Values, page 7-9.

Note: This floor value does not apply to sovereign assets.

Loss Given Default Method

Loss Given Default (LGD) measures the proportion of the exposure that will be lost if a default occurs. You can derive this estimate using the foundation approach or advanced approach.

Foundation Approach

Under the foundation approach, senior claims without specifically recognized collateral are assigned a 45% LGD value. Subordinated claims without specifically recognized collateral are assigned a 75% LGD value. Refer to paragraphs 287 - 288 of the Accord. You can edit the LGD percentage from the Configuration Settings page in the Methodology Elections user interface. See: Procedure to Configure the Risk Components Values, page 7-9.

Collateral

Under the foundation approach, the effects of collateral are reflected through adjustments to the LGD value. Under the IRB approach, there are two types of collateral:

- Financial collateral: It is the same collateral recognized in the standardized approach. See: Collateral, page 2-6
- Eligible Internal Ratings Based collateral: It include items such as receivables, specified commercial and residential real estate, and other collateral, which meet several requirements defined by the Accord. Refer to paragraph 289 of the Accord.

The solution will calculate a weighted average LGD value based on the optimal application of collateral in accordance with the Basel regulations. Note that only senior debt may receive a LGD offset. The following process is used to determine the weighted average LGD value.

1. Determine the Eligibility of Internal Ratings Based Collateral: The sum of eligible IRB collateral, characterized as real estate and other eligible collateral, must exceed a minimum threshold value of 30% of the exposure value for recognition under

the IRB approach. This minimum threshold value may be edited through the configuration settings page. See: Procedure to Configure the Risk Components Values, page 7-9. Refer to paragraph 295 of the Accord.

$$(\Sigma(\text{Currency Translated Mitigant Values})) / \text{Net Exposure} \geq 30\%$$

Where:

Currency Translated Mitigant Value: The total value of Eligible Internal Ratings Based Collateral.

2. Calculate Over-collateralized portion of Eligible Internal Ratings Based Collateral: The over-collateralized value is determined by dividing the collateral's value by a percentage value determined through lookup based on the collateral type. Refer to paragraph 295 of the Accord.

$$\text{Over-collateralized Value} = \text{Currency Translated Mitigant Value} / \text{Internal Ratings Based Over-collateralized Threshold}$$

Where:

Internal Ratings Based Threshold: The value based on the collateral type predefined by Basel. See: Internal Ratings Based Collateral Table, page B-17.

3. Assign Loss Given Default Value: In addition, the over-collateralized portion of the collateral will be assigned a specific LGD value through a lookup table value based on the collateral type. See: Internal Ratings Based Collateral Table, page B-17.
4. Financial Collateral: The value of financial collateral will be adjusted for maturity adjustments and any appropriate haircuts. Financial collateral follows the same process as in the comprehensive approach to calculate an adjusted mitigant value. See: Comprehensive Approach, page 2-7. All financial collateral receive a LGD value of 0%. Note that financial collateral does not include netted deposits which are not recognized as adjustments to LGD value, but instead as adjustments to EAD value.
5. Rank Collateral: The sum of the financial collateral is ranked first and then all Eligible IRB collateral is ranked from lowest to highest LGD value.
6. Weighted Average Loss Given Default Value: A weighted average LGD value is calculated based on the applicable collateral's LGD value. The weight is the adjusted value of the collateral divided by the remaining exposure value. The LGD value is the value applicable to the particular collateral type. When calculating a weighted average LGD value, collateral is applied in rank order until all of the collateral is utilized, or the total collateral value = that of the asset. Once the collateral value exceeds the value of the asset, it is no longer applied.

$$\text{Loss Given Default Weighted Average} = (\text{Remaining Exposure} \times 0.45 / \text{Net Exposure}) + \Sigma(\text{Over-collateralized Value} / \text{Net Exposure} \times \text{Loss Given Default})$$

$$\text{Remaining Exposure} = \text{Net Exposure} - \Sigma(\text{Adjusted Mitigant Values}) - \Sigma(\text{Currency Translated Over-collateralized Value})$$

Where:

Adjusted Mitigant Value: The sum of the financial collateral for a given asset after applying all haircuts or maturity mismatch adjustments and translating for currency mismatches.

Over-collateralized Value: This value must not exceed the value of the asset. This value is applied in rank order based on the LGD value. (Lowest to Highest)

Advanced Approach

Supervisory recognition of internal estimates of LGD will be limited to banks that meet qualitative and quantitative minimum requirements that are more rigorous than those required of institutions making use of the foundation approach. See: Foundation Approach, page 3-3. Refer to paragraphs 297 - 307 of the Accord. Financial institutions will estimate LGD values using internal or third party models and import these values into the system during the extract and load process. Additionally, when financial institutions elect to use the advanced approach, the credit risk mitigating effects of collateral would be incorporated into the calculation of the LGD value prior to import. Refer to paragraphs 480 - 489 of the Accord.

Exposure at Default Method

Exposure at Default (EAD) measures the amount of credit facility that is likely to be drawn if default occurs. The process for calculating EAD is effectively the same as calculating net exposure under the standardized approach. See: Determining Net Exposures, page 2-4. As under the standardized approach, EAD is classified in the following categories.

- On-balance Sheet Exposures
- Off-balance Sheet Commitments
- Over the Counter Derivatives

Additionally, on-balance sheet netting is accounted for as a direct adjustment to the EAD value just as in the standardized approach.

The primary difference between the standardized approach and the IRB approach is that there are two methods to determine credit conversion factors in the IRB approach:

- In the foundation approach, credit conversion factors are derived from a lookup table based on the original maturity.
- In the advanced approach, financial institutions may estimate credit conversion factors and import these estimated values during the extract and load process. Refer to paragraphs 308 - 317 of the Accord.

Maturity

Maturity measures the remaining economic term of the exposure. The calculation of maturity depends on the specific asset type of the exposure. In the bank and sovereign asset classes, financial institutions must calculate effective maturity using a cash flow based methodology. For assets in the corporates asset class, financial institutions may derive effective maturity using the cash flow method or may derive maturity using a supervisory approach. Under the supervisory approach, the solution will assign a one-year maturity value to all corporate instruments and a 6 month maturity value to all repo-style transactions. Refer to paragraphs 318 - 325 of the Accord.

Note: Effective maturity has a minimum of one year and a maximum of 5 years. The one-year floor may not apply for certain short-term instruments. These instruments have a minimum maturity of 1 day.

Note: Effective Maturity is not used in other asset classes such as retail assets and equities.

Risk Functions

Regulatory Capital Manager uses the following equations to calculate risk functions for corporates, bank and sovereign exposures:

- **Correlation Value:** This equation calculates the expected correlation of the instrument based on a model portfolio determined by the Basel Committee.
- **Maturity Adjustment:** This equation adjusts the maturity based on the PD value under a model portfolio.
- **Capital Requirement:** This equation determines the minimum capital requirement for the instrument.
- **Risk Weighted Asset:** This equation determines the risk weighted assets for the instrument.

The solution calculates the correlation and maturity adjustment values first and then uses these values in the capital requirement equation. Once the capital requirement is calculated, this value is entered into the risk weighted asset equation to derive a risk weighted asset value for a given asset.

Firm Size Adjustments for Corporates Assets

For corporate instruments only, the Accord permits you to apply a firm size adjustment for exposures to small and medium size entities. The firm size adjustment acts as a relative decrement to the correlation function as it is assumed that small to medium enterprises would have yield securities with a relatively lower portfolio correlation compared to larger enterprises. Therefore, small and medium sized corporations receive a relatively lower risk weighted asset value. Small and medium size entities are defined as any firm with total annual sales less than 50 million euros. In these circumstances, the appropriate firm size adjustment is calculated for a given asset and applied to the correlation equation. Refer to paragraphs 273 - 274 of the Accord. The Accord allows you to substitute total annual assets for total annual sales when total sales are not a meaningful indicator of firm size. In addition, you may edit this firm size threshold from the Configuration Settings page. See: Modify Configuration Settings, page 7-7.

Purchased Receivables

Purchased receivables (PR), commonly referred to as factoring, are accounts receivables that you purchase from a third party and may manage to collection. Corporate PR are a subcategory of the corporates asset class. There are two types of credit risk associated with PR:

- **Default risk:** It is the risk type is the possibility that a borrower will not be able to meet their contractual obligations.
- **Dilution risk:** It is the possibility that the receivable amount may be reduced through a cash or non-cash credit to the receivable obligor.

Refer to paragraphs 318 - 325 of the Accord on corporate PR.

The system will calculate a risk weighted asset value for default risk and a risk weighted asset value for dilution risk and sum the two values to arrive at total credit risk weighted assets for a given instrument.

$$\text{Risk Weighted Assets} = \text{Risk Weighted Assets}_{\text{Default Risk}} + \text{Risk Weighted Assets}_{\text{Dilution Risk}}$$

Note: The exposure value associated with default risk is reduced by the capital charge calculated for dilution risk prior to the calculation of default risk weight assets. Therefore, you must calculate dilution risk weighted assets first.

There are two sets of risk components are used to calculate default risk weighted assets and dilution risk weighted assets. The following differences exist in the risk components for each of the different types of risk:

- Probability of Default: Financial institutions must import different values for both default and dilution risks.
- Loss Given Default:
 1. Foundation Approach:
 - Default Risk: Senior claims is equal to 45% and subordinate claims is equal to 75%.
 - Dilution Risk: All instruments receive 100%.
 2. Advanced Approach: Financial institutions must import different values for both default and dilution risks. Each of these values would be the output of external analytical models estimating LGD values under each of the different risk types.
- Exposure at Default
 1. Dilution Risk: The outstanding balance of the exposure.
 2. Default Risk: EAD value is calculated as the outstanding balance of the exposure less the capital charge from dilution risk.
- Maturity: The same value used for both default and dilution Risks.

Leases with Residual Value Risk

Leases that expose financial institutions to residual value risk are a sub category of the corporates, sovereign, and bank asset classes. Residual value risk is the bank's exposure to potential loss due to a reduction in the fair value of the underlying asset below its residual estimate at lease inception. These instruments will have two exposure values imported into the Oracle Enterprise Financial Management (EFM) data model, the remaining discounted lease payment (remaining net present value), and lease residual value risk. Therefore, for these assets, an additional calculation needs to be made to calculate risk weighted assets. Refer to paragraphs 523 - 524 of the Accord on the treatment of leases.

The discounted lease payment functions as the EAD value when calculating risk weighted assets using the appropriate risk function for the exposure. Once this value is calculated, the residual value is added to the risk weighted asset value associated with the discounted lease payment to calculate total risk weighted assets for a given lease.

$$\text{Risk Weighted Assets} = \text{Risk Weighted Asset}_{\text{Discount Lease Payment}} + \text{Residual Value}$$

Specialized Lending Exposures

For exposures characterized as specialized lending (SL) instruments, financial institutions should use the slotting criteria approach, an alternative method to the one described above, to calculate risk weighted assets, unless they have received

approval from regulators to use the PD or LGD risk component based approach from regulators. Specialized lending assets consist of project finance (PF), object finance (OF), commodities finance (CF), income-producing real estate (IPRE), and high volatility commercial real estate (HVCRE) categories. Similar to the standardized approach, risk weights for the specialized lending's categories will be derived based on lookup tables and multiplied by the exposure value to calculate risk weighted assets. Refer to paragraphs 275 - 285 of the Accord on the treatment of specialized lending exposures.

Risk Weighted Assets = Risk Weight x Exposure at Default

Risk weights are determined through lookup tables based on a slotting criteria rating applied to the assets. Banks will apply one of the following five slotting criteria ratings to these types of assets prior to importing the data.

- Strong
- Good
- Satisfactory
- Weak
- Default

Ratings are based on the criteria provided in the Accord.

Guarantees and Credit Derivatives

The treatment of Guarantees and Credit Derivatives follows a similar process as the standardized approach for guarantees and credit derivatives, including maturity adjustments and foreign exchange haircuts.

There are two ways in which financial institutions may incorporate credit protection from a guarantor or credit derivative into the calculation of risk weighted assets. See: Procedure to Configure the Risk Function Values, page 7-10. Refer to paragraphs 480 - 499 of the Accord on the treatment of guarantees and credit derivatives.

1. Banks may directly adjust the PD or LGD values of the asset. This option is only available to banks under the advanced approach.
2. Banks may calculate a weighted average capital requirement based on the capital requirement of the asset and the capital requirement of the guarantees and credit derivatives. The following process is used to calculate the weighted average capital requirement:
 - Derive Risk Components of Guarantee and Credit Derivatives.
 1. Probability of Default: Import value for guarantee and credit derivatives.
 2. Loss Given Default:
 - Foundation Approach: The system calculates appropriate LGD value through lookup tables for guarantee and credit derivatives. All guarantee and credit derivatives categorized as senior claims receive a 45% value and subordinate claims receive a 75% value.
 - Advanced Approach: The LGD values are imported for guarantees and credit derivatives.
 3. Maturity: The same value used for asset as the maturity adjustment has already been accounted for in the adjusted protection value.

- Calculate capital requirement for all guarantees and credit derivatives.

The system enters the four risk components into the risk function appropriate for the mitigant, and calculates the capital requirement value for each mitigant.

Next, the system ranks the capital requirement values of the credit derivatives and guarantees from lowest to highest value. Any credit derivative or guarantee where the capital requirement is larger than that of the asset is not included in the weighted average capital requirement calculation.

- Weighted Average Capital Calculation

Finally, a weighted average capital requirement value is calculated based on the applicable asset and mitigant. When calculating a weighted average capital requirement value, credit derivatives and guarantees are applied in rank order until all of the mitigants are utilized or the total mitigant value = that of the asset. Once the mitigant value exceeds the value of the asset, it is no longer applied.

Retail Assets

For instruments in these retail asset classes, risk weighted assets (RWA) are calculated by inputting three risk components, namely probability of default (PD), loss given default (LGD), and exposure at default (EAD), into various risk functions. The risk component maturity is not used to calculate risk weighted assets and there is no distinction between the foundation and advanced approaches for the retail asset class. All three risk components must be derived by the customer and imported into the system. All retail instruments are categorized into one of the three sub classes: residential mortgage, qualifying revolving exposures, and all other. In turn, each of these three preceding sub asset classes utilizes a different risk function. Refer to Part 2, Section III - D of the Accord on the treatment of retail assets.

Credit Risk Mitigation

Banks may use the following types of credit risk mitigation to reduce risk weighted assets.

- Collateral, credit derivatives, and guarantees

Banks will make adjustments outside of the system to the asset's PD or LGD values to reflect the effects of collateral, credit derivatives, and guarantees.

- On-balance Sheet Netting

The same process used for corporate assets will be applied to all retail assets for deposit netting, including maturity adjustments and foreign exchange haircuts. See: On-balance Sheet Netting, page 2-10. Refer to paragraphs 480 - 499 of the Accord on the treatment of guarantees and credit derivatives.

Retail Purchased Receivables

Retail purchased receivables are a sub category of the retail asset class. Similar to corporate purchased receivables, there are two types of credit risk associated with retail purchased receivables: default risk and dilution risk. Therefore, the same process that was used to calculate risk weighted assets for corporate purchased receivables, is used to calculate risk weighted assets for retail purchased receivables. One exception arises because retail purchased receivables are typically pools of receivables and may consist

of a hybrid pool of receivables with assets represented from more than one of the retail asset classes. Refer to paragraphs 362 - 364 and paragraphs 369 - 372 of the Accord on the treatment of retail purchased receivables.

When a hybrid pool exists, the system will calculate the capital requirement using the risk function of each retail asset class that is represented in the pool. Then, the system will calculate risk weighted assets for the receivable pool using the highest capital requirement value. For example, if a retail purchased receivable pool contains assets in both the retail's qualifying revolving exposures asset class and the retail's all other asset class, the system would calculate the capital requirement using the risk function associated with both the retail asset classes. Finally, the system would calculate the risk weighted asset value to be the greater of the two outputs from each of the applicable risk functions.

Defaulted Assets

Assets in the corporates, sovereign, bank, and retail asset classes that are considered to be defaulted assets use a different process than the process described above to calculate the capital requirement percentage. To calculate the capital requirement, financial institutions subtract the actual LGD value from the expected loss value. Refer to Part 2, Section III - G of the Accord.

$$\text{Capital Requirement} = \text{Actual Loss Given Default} - \text{Expected Loss}$$

Equity

For instruments in the equity asset class, there are three methods for calculating risk weighted assets: the simple risk weight method, internal models method, and the PD/LGD method. Financial institutions need to identify which method to use to calculate the risk weighted assets. See: Procedure to Configure the Risk Function Values, page 7-10. Refer to Part 2, Section III - E of the Accord on the treatment of equity under the IRB approach.

Simple Risk Weight Method

Under the simple risk weight method, the system calculates risk weighted assets by multiplying a risk weight by the net exposure value. Risk weights are derived through lookup tables based on whether an asset is public or private. Refer to paragraphs 344 - 345 of the Accord.

$$\text{Risk Weighted Assets} = \text{Risk Weight} \times \text{Net Exposure}$$

Internal Model Method

Banks that elect to use the internal model method to calculate risk weighted assets will calculate a capital charge value using internal Value-at-Risk (VaR) models and import this value into the system during the extract and load process. The system will then convert this capital charge to risk weighted assets by multiplying this capital charge by 1 divided by the required capital percentage. Refer to paragraphs 346 - 349 of the Accord.

$$\text{Risk Weighted Assets} = \text{Internal Capital Charge} \times 1 / \text{Required Capital Percent}$$

Note: When banks elect to use the internal model method, minimum thresholds apply for the calculation of risk weight assets. The system will calculate these minimum thresholds and apply them where appropriate.

Probability of Default or Loss Given Default Methods

Financial institutions that choose to use the Probability of Default (PD) or Loss Given Default (LGD) method for calculating risk weighted asset will use a similar methodology as that for the corporates asset class. See: Probability of Default Method, page 3-3 or Loss Given Default Method, page 3-3. Banks will derive PD, LGD, EAD, and maturity for the equity exposure, and enters these variables into the corporate risk function to derive risk weighted assets and capital requirement values. Refer to paragraphs 350 - 355 of the Accord.

Note: When banks elect to use the PD/LGD method, minimum thresholds apply for the calculation of risk weight assets. The system will calculate these minimum thresholds and apply them where appropriate.

Total Risk Weighted Assets and Required Capital Calculation

Total risk weighted assets are calculated by adding risk weighted assets from the various asset classes, and adding this total to the securitized risk weighted assets. See: Securitization, page 3-12. Banks will calculate a minimum capital requirement by multiplying total risk weighted assets by a bank specific required capital percentage. The required capital percentage is 8% and may be adjusted. See: Modify Configuration Settings, page 7-7. The minimum capital requirement should be stored in both the local and base currency.

$$\text{Total Risk Weighted Assets} = \Sigma(\text{Risk Weighted Assets}) + \text{Risk Weighted Assets}_{\text{Securitization}}$$

$$\text{Minimum Required Capital} = \text{Total Risk Weighted Assets} \times \text{Required Capital Percentage}$$

Historical Default Date

Banks that employ the IRB approach are expected to validate the accuracy and consistency of their models that are used to determine the various risk components. Therefore, banks are required store historical data to back test and validate results of these internal models.

The Accord requires that banks store and use at least five years of historical data to estimate the various risk components for exposures in the corporates, sovereign, bank, and retail asset classes. In addition, banks electing to use the advanced IRB approach must base their own estimate EAD and LGD values on at least seven years of historical data. Therefore, Regulatory Capital Manager solution is capable of storing at least 7 years of historical data in order to back test and validate internal models and estimates. Refer to Part 2, Section III - H of the Accord on the requirements for default data.

The system stores the following types of data in the Loan Loss table:

- Customer default data
- Instrument default data
- Recovery data

This data is used in reporting and may also may be exported using an extract tool for additional default analysis.

Securitization

Securitization is the process of aggregating similar instruments into a single negotiable security that is then sold to investors. Examples of the types of instruments that may be securitized are loans, mortgages, and credit cards. Refer to Part 2, Section IV of the Accord on the treatment of Securitized exposures.

RCM does not calculate risk weighted assets or regulatory capital for securitized instruments in the current release. Enhancements for such functionality are planned for future releases. However, the application does allow securitized risk weighted assets and regulatory capital to be directly imported in to the financial ledger for profitability analysis, management reporting, and allocations.

These items would be directly imported in to the credit risk weighted assets and required capital financial elements for credit risk. It is assumed that these items would correspond to different line item, or natural account dimension, or both values than the standard instrument held on the instrument tables. For this reason, these values would be held distinctly from risk weighted assets and regulatory capital migrated from the instrument tables at the end of processing of the instrument tables.

Calculating Capital Requirements for Operational and Market Risk

This chapter gives you detailed information related to calculation of capital requirements for operational and market risks using the Oracle Regulatory Capital Manager solution.

This chapter covers the following topics:

- Overview of the Calculation Process of Required Capital for Operational and Market Risks
- Deriving Required Capital for Operational Risk
- Deriving Required Capital for Market Risk

Overview of the Calculation Process of Required Capital for Operational and Market Risks

The process by which Regulatory Capital Manager (RCM) calculates the minimum required capital from the derived risk weights is described in this chapter. To adhere to the Pillar I requirements, the RCM engine uses the selected elections and process rules to calculate the data. See: Overview of Regulatory Capital Manager Methodology Elections, page 7-1 and Overview of the Regulatory Capital Manager Process Rule, page 8-1.

Deriving Required Capital for Operational Risk

Operational risk is defined as the risk of losses resulting from inadequate or failed internal processes, people and systems, or external events. The operational risk capital charge has been implemented by the Bank of International Settlements (BIS), so that financial institutions can monitor their operations to prevent against catastrophic losses.

In the Accord, the approaches for calculating the required capital for operational risk are the:

- Basic Indicator approach
- Standardized approach
- Advanced Measurement approach

The process rule allows you to elect whether you would like to calculate the operational risk's required capital and risk weighted assets, for a given processing run. See: Creating a Process Rule, page 8-2. Optionally, you may use the Oracle Internal Controls Manager for implementing, mapping, tracking, and auditing operational risks. See: Using Internal Controls Manager for Standardized and Advanced Measurement Approaches, page 4-4.

Basic Indicator Approach

In the Accord, the basic indicator approach is the simplest methodology for calculating operational risk's minimum required capital. Refer to paragraphs 649-651 of the Accord. The required capital for operational risk calculation is based on a fixed percentage, referred to as alpha of the company's annual gross income over the previous three years. Gross income is used as it is intended to be a proxy for the scale of business operations. This approach is applicable to financial institutions that do not have the analytical sophistication or technological infrastructure required by the more advanced approaches. The total capital charge is calculated as:

$$\text{Operational Risk Required Capital} = \text{Gross Income} \times \alpha \text{ (alpha)}$$

Where:

Gross Income: An average of the gross income over the previous three fiscal years.

Alpha α equals 15 percent.

See: Business Line Alpha and Beta Factors, page A-1 for values of alpha factor.

The Regulatory Capital Manager (RCM) engine calculates the required capital at the company cost center level using the company cost center organization ID unit dimension. Therefore, gross income data must be stored at this level.

Standardized Approach

The standardized approach is slightly more complicated than the basic indicator approach because it calculates the required capital for operational risk based on a percentage of the business line and the average gross income over the previous three fiscal years. Refer to paragraphs 652-654 of the Accord. Under this approach, banks must first categorize those company cost centers that generate gross income based on the following eight types:

- Corporate Finance
- Trading & Sales
- Retail Banking
- Commercial Banking
- Payment & Settlement
- Agency Services
- Asset Management
- Retail Brokerage

Each of these business lines is associated with a fixed percentage factor referred to as beta. The product of the beta for the business line and the business line gross income determines the minimum required capital under the standardized approach.

The minimum required capital for a company cost center is calculated as:

$$\text{Operational Risk Required Capital} = \text{Gross Income} \times \beta \text{ (beta)}$$

Where:

Gross Income: The average gross income over the previous three years

Beta β : A beta lookup value.

See: Business Line Alpha and Beta Factors, page A-1.

Alternative Standardized Approach

A bank can be allowed to use the alternative standardized approach at the discretion of national supervisors. This approach only applies to retail and commercial banking business lines. Financial institutions substitute gross income by a fixed factor called *m*, having default value of 0.035, and the average loans outstanding value for the previous three fiscal years of those business lines. Refer to Part II, Section V, B.2 of the Accord. The total capital charge is calculated as:

Operational Risk Required Capital = β (beta) \times *m* \times 3 Fiscal Year Average Outstanding Loans and Advances

Where:

Outstanding Loans and Advances: The Average of Outstanding Loans and Advances over the previous three fiscal years fiscal. See: Operational Risk Data, page A-2.

Beta β : A beta lookup value.

See: Business Line Alpha and Beta Factors, page A-1.

m: This factor is stored as a parameter in the configuration settings section of the methodology elections user interface. The value is 0.035.

The Regulatory Capital Manager (RCM) engine calculates the required capital at the company cost center level using the company cost center organization ID unit dimension. Therefore, gross income data must be stored at this level.

Additionally, each *Company Cost Center* or *Organizational Unit* dimension member must be associated with one of the above eight business lines, so that minimum required capital may be calculated. This association is accomplished through the business line attribute on the company cost center organization ID unit dimension.

Advanced Measurement Approach

The advanced measurement approach (AMA) is the most advanced of the three possible approaches for calculating the operational risk's minimum required capital.

Banks adopting AMA would calculate the minimum required capital based on third-party or internal operational risk and statistical analysis systems. Regulatory Capital Manager (RCM) requires that data be imported based on the company cost center organization ID unit dimension. However, unlike gross income data for the basic indicator and standardized approaches, this data may either be imported to a member at any level of a hierarchy, not just the lowest level.

This data may be imported at the company cost center level or at a higher organizational level depending on the analytical output of third-party or internal models. During implementation, consultants will determine the dimension level for these values based on their existing dimension structure and model output. Refer to paragraphs 655-659 of the Accord.

The implementation of AMA is subject to supervisory approval. Financial institutions will be required to calculate their capital requirement using the AMA as well as their existing operational risk Approach for some transition period as they move from one approach to the advanced. Refer to Part 2, Section V, D of the Accord.

Partial Use of the Advanced Measurement Approach

A financial institution is allowed to use the AMA for some parts of its operations, and basic indicator approach or standardized approach for the other parts of the business. However, there are some conditions required to meet this exception. Refer to Part 2, Section V, C.2 of the Accord. For this reason, RCM allows financial institutions to elect the operational risk approach based on the specific *Company Cost Center Organization ID Unit* dimension member when they elect to use a hybrid approach. See: Defining Operational Risk Methodology Settings, page 7-12.

Calculating Risk Weighted Assets

Regulatory Capital Manager (RCM) derives risk weighted assets for operational risk using the equation given later in this section. The capital percentage has a default value of 8%, but may be redefined as explained in the section Procedure to Define Credit Risk Methodology, page 7-4.

$$\text{Risk Weighted Asset} = (\text{Operational Risk Capital Charge}) \times (1 / \text{Capital Percentage})$$

Where:

- Operational Risk Capital Charge: The operational risk's capital value stored as a financial element in the financial ledger.
- Capital Percentage: The capital trigger will be sourced from the methodology elections rule user interface and has a default value of 8%. You can adjust the value through the methodology elections rule user interface.

Using Internal Controls Manager for Standardized and Advanced Measurement Approaches

Under Basel II, financial institutions must provide transparency of operations and procedures associated with operational risk. If your institution is interested in implementing either the standardized or advanced measurement approaches for operational risk, Basel II requires that banks have a:

- Clearly defined and documented process for determining regulatory capital (This is also true for credit and market risk). Refer to paragraphs 662 and 663 (d) of the Accord.
- A risk function that tracks and controls each type of operational risk. Refer to paragraph 663 (a) of the Accord.
- Systematic tracking of operational loss (incident) data. Refer to paragraph 663 (b) of the Accord.
- Regular internal reporting. Refer to paragraph 664 (c) of the Accord.
- Regular audit and review by auditors and supervisors. Refer to paragraph 663 (f) of the Accord.

Similar requirements exist for documenting and tracking credit and market risks which are borne out of Pillars I, II, and III.

Given these requirements, you may use Oracle Internal Controls Manager (ICM) to allow financial institutions to directly meet these risk management requirements by documenting, monitoring, and controlling internal processes and risks that may have adverse effects on their operations.

ICM is the central application for implementing, mapping, tracking, and auditing operational risks. With ICM, you can attain more efficient internal control testing, maintain higher certainty in your risk assessment, and lower internal and external audit verification costs on an annual basis.

Through Oracle iScripting, ICM has a self-assessment authoring and administration module. This tool enables financial institutions to have methods and procedures in place for ensuring compliance with a documented set of internal policies, controls, and procedures for operational risk.

See: Setup of Oracle Internal Controls Manager, *Oracle Internal Controls Manager Implementation Guide*.

Incident Tracking

ICM has the ability to accurately and flexibly track loss incidents. Financial institutions can customize the incident tracking data collection. Therefore, users can create incidents with several seeded attributes such as free form text, seeded tables or validated tables (for example, organizations and currency). Note that you may use the same dimensional structure, that is, company cost center, product, and customer, for coding incidents as you use for analysis within the Oracle Enterprise Performance Foundation (EPF) schema.

Basel II requires that financial institutions should collect descriptive information about incidents such as gross loss amounts and incident date. Refer to paragraph 663 (b) in the Accord. By using ICM, customers can capture information about loss incidents such as business unit, loss amount, loss description, frequency, severity, and risk category. Users can customize incidents data collection within their security privileges.

The Basel II also requires financial institutions to capture information about incidents from all appropriate systems and geographic locations. ICM permits financial institutions to map risk incidents to a product or organizational unit.

Seeded Basel II Risk Types

ICM is seeded with Basel II risk categorizations directly from Appendix VII of the Accord. These risk types allow organizations to track and analyze risk relative to the Basel II categorizations.

Deriving Required Capital for Market Risk

Regulatory Capital Manager (RCM) leverages your existing market systems for the calculation of market risk capital. Data from these systems may be imported into RCM and used in seeded and custom defined reports as well as profitability analysis.

Migration of Market Risk Data to the Financial Ledger

The required capital for market risk, either for the standardized or internal model method would be stored based on company cost center organization ID unit dimension primarily within the Oracle Enterprise Performance Foundation data model. Based on the imported information, the Regulatory Capital Manager (RCM) engine will migrate data on market risk's regulatory capital to financial ledger. This process will be initiated

through the RCM's process rule. See: Executing a Process Rule, page 8-4. Within the process rule user interface, users will have the option of whether or not to migrate the market risk data for a given data set.

Currency Conversion

In the process rule, users can specify whether both functional and entered currency should be migrated, or just the functional currency. See: Creating a Version, page 8-3.

When the amount is imported in the entered currency into the data model, this amount will be converted to the functional currency by the Regulatory Capital Manager (RCM) engine.

The following algorithm should be used for currency exchange rate access:

- If exchange rate exists, use exchange rate for last day of calendar period being processed.
- If no exchange rate exists for last day of calendar period being processed, use the latest exchange rate available in the rates table for the period being processed.
- If no exchange rate exists for the period being processed, use an exchange rate value of 1.

Calculating Risk Weighted Assets

The risk weighted assets for market risk will be calculated by multiplying the market risk's required capital (as stored in the financial ledger) by one divided by the capital percentage. The capital percentage will be defined during configuration through the RCM methodology election rule user interface, and will have a default value of 8%. See: Procedure to Define Credit Risk Methodology, page 7-4.

Risk Weighted Average = (Market Risk Required Capital) x (1 / Capital Percentage)

Where:

Market Risk Required Capital: The market risk's capital value stored as a financial element in the financial ledger.

Capital Percentage: A value derived through a lookup table. Users will modify the value through methodology elections rule user interface.

Common Rule Management Tasks

This chapter focuses on the rule management tasks that are common across all rules in this application.

This chapter covers the following topics:

- Overview of Common Rule Management Tasks
- Searching for Rules
- Creating Rules
- Viewing and Updating Rules
- Duplicating Rules
- Deleting Rules

Overview of Common Rule Management Tasks

The rule management tasks that are common to business rules in this and other applications are as follows.

- Searching for Rules, page 5-1
- Creating Rules, page 5-2
- Viewing and Updating Rules, page 5-3
- Duplicating Rules, page 5-3
- Deleting Rules, page 5-4

Note: You can perform these tasks from the home page for the type of rule with which you are working. Depending on the rule type, some tasks might not be available.

The procedures for carrying out these tasks are the same for each rule type, except for rule-specific steps explicitly stated in the rule-specific documentation.

Searching for Rules

Search for a business rule to perform any of the following tasks:

- Update, duplicate, export, migrate, or delete existing rules or versions
- Create a new version

- Define methodologies for new products

Procedure:

1. Navigate to the home page for the appropriate rule type. The rule home page is the gateway to all rules and related functionality of the application. From there, you can navigate to other related pages.
2. Search for the rule, as follows:
 1. Select the folder in which the rule is stored.
 2. (Optional) Enter the name of the rule.
 3. (Optional) Select the effective date.
 4. Click Go.Only rules that match the search criteria are displayed.

Related Topics

Overview of Common Rule Management Tasks, page 5-1

Creating Rules

You create a rule to specify the way you want a particular task or business process to be carried out by the application. Creating a rule is a two-step process, in which you first specify the properties for the rule itself, and then specify the properties for the rule version.

Procedure to Create a Rule and Version:

1. Navigate to the home page of the rule you want to create.
2. Click Create to display the rule definition page.
3. Select the folder in which you want to store the rule.
4. Enter a name for the rule.

Important: The name of a rule must be unique across all the rules and rule types in the entire database, not just at the folder level.

5. (Optional) Enter a brief description for the rule.
6. Select the required access for other users.
7. Click Continue.
The version definition page is displayed.
8. Type the name of the version for the rule.
9. Select the effective start and end dates using the date picker. Alternatively, you can type them in the space provided.

Important: Each version must have a unique date range, as compared to all other versions for the same rule.

10. Specify any other properties or options that may apply for the version that you are creating.
11. Click Finish.

Related Topics

Overview of Common Rule Management Tasks, page 5-1

Viewing and Updating Rules

You can view existing rules and their properties, and you can update rules, with the exception of the following properties:

- Folder
- Hierarchy
- Access

You can view existing rule versions, and you can update all rule version properties.

Procedure:

1. Navigate to the home page of the rule you want to update.
2. Search for a rule. For further information, see Searching for Rules, page 5-2.
3. Click Update corresponding to the rule or version that you want to update if you are familiar with the rule or version details and would like to update the rule or version directly. Alternatively, click on the rule or version to view details and then click Update on the View page.

Procedure to Update a Rule

1. Update the Name or Description.
2. Click Apply.

Procedure to Update a Version

1. Update the Name.
2. Update the Effective Start Date and the Effective End Date using the date picker. Alternatively, you can enter them in the space provided.

Caution: The updated version's date range must not overlap with any of the existing version date ranges.

3. Click Apply.

Related Topics

Overview of Common Rule Management Tasks, page 5-1

Duplicating Rules

You can duplicate rules and versions to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes. You can duplicate only the version, or you can duplicate both the rule and the version.

When duplicating a version, the rule-related details cannot be updated. All existing versions for a rule are listed at the bottom of the duplicate page.

When you duplicate the version and the rule, a new rule is created with a copy of the version.

Procedure:

1. Navigate to the home page of the rule or version you want to duplicate.
2. Search for a rule. For further information, see *Searching for Rules*, page 5-2.
3. Click Duplicate corresponding to the version of the rule that you want to duplicate.

Procedure to Duplicate a Version:

1. Select Version to create a new version in the same Rule.
2. Enter a unique name for the version.
3. (Optional) Enter a brief description for the version.
4. Select the effective start and end dates using the date picker. Alternatively, you can enter them in the space provided.

Caution: The new version's date range must not overlap with any of the existing version date ranges.

5. Click Finish.

Procedure to Duplicate a Rule and Version:

1. Select Rule and Version to create a new rule and a version.
2. Select the folder in which the rule will be stored.
3. Enter a name for the rule.
4. Enter a name for the version.
5. (Optional) Enter a description for the version.
6. Update the effective start and end dates using the date picker. Alternatively, you can type them in the space provided.
7. Click Finish.

Related Topics

Overview of Common Rule Management Tasks, page 5-1

Deleting Rules

You can delete rules that are no longer needed. To delete a rule, you delete all of the versions that are associated with that rule.

Caution: Once deleted, a rule cannot be retrieved.

Restrictions on deleting rules or versions are:

- You cannot delete rules or versions if you have only Read privileges. Only approvers or users with similar or higher system rights can delete rules or versions.
- You cannot delete a rule or version that has been approved by a user with higher privileges. In this case, a workflow process needs to be initiated.
- You cannot delete rules or versions if their approval is pending. Alternatively, you can delete the approval request and then the rule. However, this works only if you have sufficient privileges.
- You cannot delete versions associated with Locked Rules. A Locked Rule is one that has been already used in the production environment to generate final results.

Procedure:

1. Navigate to the home page of the rule you want to delete.
2. Search for a rule. For further information, see Searching for Rules, page 5-2.
3. Click Delete corresponding to the rule or the version of the rule that you want to delete.

Related Topics

Overview of Common Rule Management Tasks, page 5-1

Working with Rule Approval Status

This chapter discusses the rule approval process and the procedure for managing approved rules.

This chapter covers the following topics:

- About Rule Approval and Production Data Sets
- The Rule Approval Process
- The Rule Deletion Process

About Rule Approval and Production Data Sets

Oracle Regulatory Capital Manager (RCM) uses Oracle Approvals Management (AME) and Oracle Workflow to manage the approval status of rules.

Note: The approval process actually applies to versions of rules, as opposed to rules themselves. For simplicity's sake, however, the term *rule* is used in this chapter to refer to versions of rules.

A rule can write results to a production data set only if the status of the rule is approved. Rules that have not been approved can write results only to nonproduction data sets. Note that a production data set is defined as one for which the appropriate attribute has been set on the data set member.

If you want to use production data sets, you must set up an approval hierarchy through Oracle Approvals Management (AME), where you must specify **FEM Approvals** as the transaction type. After the approval hierarchy has been defined, RCM uses Oracle Workflow to route the approval requests to the appropriate approvers.

If a rule has been run and there are saved results that have been generated by the rule, the rule definition is locked, and you cannot change or delete the rule definition. You can only change or delete a rule definition, if there are no existing results for that rule.

For further information about Oracle Approvals Management and Oracle Workflow, see the following:

- *Implementing Oracle Approvals Management*
- *Oracle Workflow User's Guide*

For more information about the processes for rule approval and deletion, see the following topics:

- The Rule Approval Process, page 6-2

- The Rule Deletion Process, page 6-2

The Rule Approval Process

When you first create a rule, the status for the rule is New. The rule must be approved before you can use it to write results to a production data set (you can, however, test an unapproved rule against a non-production data set).

When you submit a rule for approval, the status becomes Submit Approval. The approver can then either approve or reject the rule. Note that you cannot run a rule for which the status is Submit Approval against either production or non-production data sets.

If the approver approves the rule, the rule status changes to Approved, and you can now use the rule to write results to production data sets.

If the approver rejects the rule, the rule status changes to Not Approved. If there are no existing results for that rule definition, you can make changes to the rule definition and resubmit the rule for approval.

If you try to change the definition for an approved rule for which there are no existing results, a backup copy of the approved rule definition is created. The status of this backup copy of the definition is Not Approved. You can then revert to this backup copy of the rule definition, edit it as desired, and then submit the revised definition for approval.

The Rule Deletion Process

To delete a rule definition for which the status is Approved, you must obtain approval to delete the rule before it can be deleted. Therefore, to delete an approved rule, you must submit the rule definition for deletion approval.

When you submit a rule for deletion approval, the definition status for the rule becomes Submit Delete. Note that you cannot run a rule for which the status is Submit Delete against either production or non-production data sets.

If the approver approves the deletion of an approved rule, the rule is automatically deleted. If the approver rejects the deletion, the rule definition status is reset to Approved.

Rules with a status of New — that is, rules that have not been submitted through the approval process — do not require approval for deletion. As long as there are no results in a non-production data set as a result of running such a rule, you can simply delete the rule.

Regulatory Capital Manager Methodology Elections

This chapter gives you detailed information related to creation and usage of methodology elections rules in the Oracle Regulatory Capital Manager solution.

This chapter covers the following topics:

- Overview of Regulatory Capital Manager Methodology Elections
- Selecting Rules
- Creating a Regulatory Capital Manager Methodology Elections Rule
- Creating a Version
- Creating Credit Risk Attribute Set Definition
- Modify Configuration Settings
- Defining Operational Risk Methodology Settings
- Duplicating Rules and Versions

Overview of Regulatory Capital Manager Methodology Elections

The Regulatory Capital Manager (RCM) methodology elections defines the regulatory assumptions and business elections for processing calculations. Once a methodology election has been defined, users may select it through process rule and submit the process to the RCM engine.

Selecting Rules

The Regulatory Capital Manager (RCM) methodology elections rules page permits you to create, search, manage, and execute methodology elections rules. This page is the gateway to the methodology elections rules and is also referred to as rule selector page.

Prerequisites

- Pre-defined rules.

Procedure:

1. Navigate to the methodology elections rules page.
2. Use the search functionality to narrow the rules displayed in the results section.

- Select the folder where the rule is stored.
- Type the rule name.
- Select the effective date using the date picker.
- Click Go.

Note: If you click Go without any information in the search text entry field, all rules available to you are displayed.

Remember that only the rules that match the search criteria are displayed in the hierarchy grid of the results section.

3. Browse through the results.
 - The first level is the root of the three-level structure. A generic label is displayed.
 - The second level displays the names of the rules.
 - The third level displays the actual versions of the rules.
4. Select the rule or version that you want to work with.

Related Topics

Overview of Regulatory Capital Manager Methodology Elections, page 7-1.

Creating a Methodology Election Rule, page 7-2

Overview of Common Rule Management Tasks, page 5-1.

Creating a Regulatory Capital Manager Methodology Elections Rule

The Regulatory Capital Manager (RCM) methodology elections rules page also permits you to create methodology elections rules. Creating a Regulatory Capital Manager (RCM) methodology elections rule is a two-step process. You first need to create a rule and then a version of that rule.

Procedure:

1. Navigate to the methodology elections rules page.
2. Click Create Methodology Election Rule to open the create methodology elections rule: step 1: define rule page.
3. Select the folder where the rule will be stored.
4. Type the rule name.
5. Type the rule description.
6. Select a hierarchy by either entering a hierarchy name or selecting it from the list of values.

Note: Remember that RCM does not support multiple value set hierarchies, which allow users to combine members from value sets for different ledgers, and RCM is not designed to process across ledgers.

Also the RCM engines do not support assumptions in methodology elections rules associated with a hierarchy which has *Multiple*

Tops, also known as multiple root nodes. These engines only support standard and flattened hierarchy types. See: Working with Hierarchies, *Oracle Enterprise Performance Foundation User's Guide*.

7. Select the privileges that other users will have on this rule. The privileges can be either Read or Read and Write.

Note: Remember that at this point, a version has not been defined for your rule.

Related Topics

Overview of Regulatory Capital Manager Methodology Elections, page 7-1.

Selecting a Methodology Election Rule, page 7-1

Creating a Version, page 7-3

Overview of Common Rule Management Tasks, page 5-1.

Creating a Version

You can define the parameters for a new version of the methodology elections rule that you have created. The version definition consists of defining credit risk attribute sets to define the credit risk methodology, selecting the operational risk methodology, and editing configuration settings, as necessary.

Prerequisites

- A RCM methodology elections rule must be created.

Procedure:

1. Navigate to the create methodology elections rule: step 2: define version page.
2. Type the version name.
3. Select the effective start and effective end dates using the date picker. Alternatively, you can type them in the space provided. These are the dates during which versions of a rule will be active in the production environment.

Note: By default, the system displays the effective start and effective end dates, which are defined in the Application Preferences section. You can modify the effective dates while running a rule when appropriate.

Note: Remember that at this point, a credit risk attribute set or operational risk methodology has not been defined for your rule and version. Typically, you would continue the creation process by defining a credit risk attribute set(s) or operational risk methodology.

Note: Use the same procedure to update a version.

Related Topics

- Overview of Regulatory Capital Manager Methodology Elections, page 7-1.
- Selecting a Methodology Election Rule, page 7-1
- Creating a Methodology Election Rule, page 7-2
- Creating Credit Risk Attribute Set Definition, page 7-4
- Overview of Common Rule Management Tasks, page 5-1.

Creating Credit Risk Attribute Set Definition

Use this procedure to specify a credit risk attribute for an asset class. The create credit risk attribute set page is divided into the following three sections:

- Credit Risk Attribute Set Definition Properties
- Asset Classes
- Organizational Units

Prerequisites

- A RCM methodology elections rule with a version must be created.

Related Topics

- Overview of Regulatory Capital Manager Methodology Elections, page 7-1.
- Selecting a Methodology Election Rule, page 7-1
- Creating a Methodology Election Rule, page 7-2
- Creating a Version, page 7-3
- Overview of Common Rule Management Tasks, page 5-1.

Procedure to Define Credit Risk Methodology

This section of the create credit risk attribute set page is used to define the parameters for a credit risk asset set.

1. Navigate to the create credit risk attribute set page.
2. Type the credit risk attribute set name.
3. Select the approach. The options are standardized and internal ratings based.
4. Select the repo-style transactions exposure calculation. The options are haircut based calculation and value-at-risk based calculation.

Related Topics

- Creating Credit Risk Attribute Set Definition, page 7-4

Procedure to Define Asset Classes

This section of the create credit risk attribute set page displays the name of the asset classes in which users may make methodology elections specific to asset classes by

clicking the define calculation icon next to the asset class name. Each asset class has its own unique options. The asset classes displayed in this section depends on the approach selected, either standardized or internal ratings based.

Standardized Approach

In the standardized approach, you can define calculation methods for the following asset classes:

- Non-Retail: Sovereign
- Public Sector Entities
- Multilateral Developmental Banks
- Non-Retail: Banks
- Securities Firms
- Non-Retail: Corporates
- Regulatory Retail Portfolio
- Residential Property
- Commercial Real Estate
- Past Due Loans

Click Define Calculation for defining values for any of the asset classes.

For the sovereign, multilateral developmental banks, and banks asset classes, follow the steps given later in this section:

1. Select the credit risk mitigation approach. The options are simple approach (default) and comprehensive approach.
2. Select the exposure, collateral, and foreign exchange haircuts. Please note that this field is only available if you choose the comprehensive approach option. The options are supervisory (default) and own estimate.
3. Select the risk weight source. The choices are sovereign option (default) and user defined table.
4. Select the user country specific risk weight checkbox. Please note that this field is only available if you choose the sovereign option.

For the public sector entities, securities firms, and corporates asset classes, follow the steps given later in this section:

1. Select the credit risk mitigation approach. The options are simple approach (default) and comprehensive approach.
2. Select the exposure, collateral, and foreign exchange haircuts. Please note that this field is only available if you choose the comprehensive approach option. The options are supervisory (default) and own estimate.
3. Select the risk weight source. The choices are sovereign option (default), bank option 1, bank option 2, and user defined table.
4. Select the user country specific risk weight checkbox. Please note that this field is only available if you choose the sovereign option.

For the regulatory retail portfolio, residential property, commercial real estate, and past due loans asset classes, follow the steps given later in this section:

1. Select the credit risk mitigation approach. The options are simple approach (default) and comprehensive approach.
2. Select the exposure, collateral, and foreign exchange haircuts. Please note that this field is only available if you choose the comprehensive approach option. The options are supervisory (default) and own estimate.

Internal Ratings Based (IRB) Approach

In the IRB approach, you can define calculation methods for the following asset classes:

- Non-Retail: Sovereign
- Non-Retail: Banks
- Non-Retail: Corporates
- Retail: Residential Mortgages
- Retail: Qualifying Revolving Exposures
- Retail: All Other
- Equity

Click Define Calculation for defining values for any of the asset classes.

For the sovereign and banks asset classes, follow the steps given later in this section:

1. Select the exposure, collateral, and foreign exchange haircuts. The options are supervisory (default) and own estimate.
2. Select the loss given default (LGD). The options are foundation approach (default) and advanced approach.
3. Select the loss given default advanced estimate incorporates credit derivatives and guarantees checkbox. Please note that this field is only available if you choose the advanced approach option.
4. Select the exposure at default (EAD). The options are foundation approach (default) and advanced approach.

For the corporates asset class, follow the steps given later in this section:

1. Select the exposure, collateral, and foreign exchange haircuts. The options are supervisory (default) and own estimate.
2. Select the loss given default (LGD). The options are foundation approach (default) and advanced approach.
3. Select the loss given default advanced estimate incorporates credit derivatives and guarantees checkbox. Please note that this field is only available if you choose the advanced approach option.
4. Select the exposure at default (EAD). The options are foundation approach (default) and advanced approach.
5. Select the effective maturity. The options are supervisory (default) and own estimate.
6. Select the specialized lending (SL). The options are slotting criteria approach (default) and probability of default (PD) / loss given default (LGD). If the slotting

criteria approach is chosen, the apply preferential treatment for short-term assets checkbox is available and can be selected.

7. Select the high volatility commercial real estate (HVCRE). The options are slotting criteria approach (default) and probability of default (PD) / loss given default (LGD). If the slotting criteria approach is chosen, the apply preferential treatment for short-term assets checkbox is available and can be selected.
8. Select the purchased receivables treatment. The options are bottom up approach (default) and top down approach.

For the retail - residential mortgages, retail - qualifying revolving exposures, and retail - all other asset classes, follow the steps given later in this section:

1. Select the exposure, collateral, and foreign exchange haircuts. The options are supervisory (default) and own estimate.

For the equity asset class, follow the steps given later in this section:

1. Select the equity method. The options are simple (default), internal model and probability of default (PD) / loss given default (LGD).

Related Topics

Creating Credit Risk Attribute Set Definition, page 7-4

Procedure to Define Organizational Units

This section displays a table with every organizational unit appropriate for a given hierarchy. You can select what organizational units to apply to a given credit risk attribute set. This table will be displayed in a parent/child node format in which you can expand on any given organizational unit to see all dependent organizational units.

1. Select the organizational unit.
2. Select the corresponding credit risk attribute set.

Related Topics

Creating Credit Risk Attribute Set Definition, page 7-4

Modify Configuration Settings

Use this procedure to modify the configuration settings associated with rule.

You need to first enter the Regulatory Capital Percent value. See: Procedure to Configure the Regulatory Capital Percent Value, page 7-8

The configuration settings page is divided into the following five sections:

- Standardized Approach, page 7-8
- Risk Components, page 7-9
- Risk Function, page 7-10
- Haircuts, page 7-11
- Operational Risk, page 7-11

Prerequisites

- A RCM methodology elections rule with a version must be created.

Related Topics

Overview of Regulatory Capital Manager Methodology Elections, page 7-1.

Selecting a Methodology Election Rule, page 7-1

Creating a Methodology Election Rule, page 7-2

Creating a Version, page 7-3

Creating Credit Risk Attribute Set Definition, page 7-4

Overview of Common Rule Management Tasks, page 5-1.

Procedure to Configure the Regulatory Capital Percent Value

Before you set any of the configuration values, you need to specify the regulatory capital percent value. The regulatory capital percent field is at the top of the configuration settings page.

1. Navigate to the configuration settings page.
2. Type the regulatory capital percent value. The default value is 8, based on the existing Accord, but individual financial institutions or regulators may choose to vary this value.

Related Topics

Modify Configuration Settings, page 7-7.

Procedure to Configure the Standardized Approach Values

The following options enables you to configure the various predefined values associated with the standardized approach.

Risk Weight Adjustment for Unrated Claims

- Adjust unrated short term claims to 100%, if any rated claim equals (%): The default value is set at 50. This option enables users to set the threshold to 100, at which this rule is applied. See: Risk Weight Adjustments, page 2-4.
- Adjust all unrated claims to 150%, if any rated short term claim equals (%): The default value is set at 150. This option enables users to set the threshold to 150, at which this rule is applied. See: Risk Weight Adjustments, page 2-4.
- Allow Unrated Bank Claims Risk Weight to be lower than Sovereign Risk Weight: By default, this option is not selected. This option enables users to override the rule that no unrated bank instrument may receive a risk weight less than the instruments from the sovereign of incorporation. See: Risk Weight Adjustments, page 2-4.

Credit Risk Mitigation Simple Approach Risk Weight Floor

- Credit Risk Mitigation Risk Weight Floor (%): The default value is 20. This option enables users to set the risk weight floor for collateral when banks elect to use the simple approach for collateral. See: Collateral, page 2-6.

Exceptions to Credit Risk Mitigation Simple Approach Risk Weight Floor

- The following options allow users to set the thresholds and values at which the exceptions to the risk weight floor are applied. The rule enables banks to ignore the risk weight floor is based on the type of transaction involved.

Repurchase Agreement Style Transactions

- Core Market Participation (%): The default value for this attribute is 0. See: Collateral, page 2-6.
- Non-Core Market Participant (%): The default value for this attribute is 10. See: Collateral, page 2-6.

Over the Counter Derivatives

- Collateralized by Sovereign or Public Sector Entities Securities (%): The default value for this attribute is 10. See: Collateral, page 2-6.
- Collateralized by cash in same currency (%): The default value for this attribute is 0. See: Collateral, page 2-6.

All Other Collateralized Transactions

- Collateralized by cash in same currency (%): The default value for this attribute is 0. See: Collateral, page 2-6.
- Collateralized by Sovereign or Public Sector Entities Securities (%): The default value for this attribute is 10. See: Collateral, page 2-6.
- Mitigant Value Discount Factor (%): The default value is 20. See: Collateral, page 2-6.

Related Topics

Modify Configuration Settings, page 7-7.

Procedure to Configure the Risk Components Values

The following options enables you to configure the various predefined values associated with internal ratings based risk components.

- Probability of Default Floor - Default Risk (%): The default value is 0.03. See: Probability of Default Method, page 3-3.
- Probability of Default Floor - Dilution Risk (%): The default value is 0.03. See: Probability of Default Method, page 3-3.
- Loss Given Default - Senior Exposure (%): The default value is 45. See: Loss Given Default Method, page 3-3.
- Loss Given Default - Subordinate Exposure (%): The default value is 75. See: Loss Given Default Method, page 3-3.
- Loss Given Default - Purchased Receivables Top Down Approach (%): The default value is 100. See: Loss Given Default Method, page 3-3.
- Loss Given Default - Equity (%): The default value is 90. See: Loss Given Default Method, page 3-3.
- Loss Given Default Floor for Residential Mortgages during Transition Period (%): The default value is 10. See: Loss Given Default Method, page 3-3.
- Equity Maturity (years): The default value is 5. See: Equity, page 3-10.

- Equity Maximum Capital Requirement (%): The default value is 1250. See: Equity, page 3-10.

Credit Risk Mitigation Adjustments to Loss Given Default

- Eligible Internal Ratings Based Collateral Minimum Threshold (%): The default value is 30. See: Collateral, page 3-3.

Related Topics

Modify Configuration Settings, page 7-7.

Procedure to Configure the Risk Function Values

The following options enables you to configure the various predefined values associated with the internal ratings based risk functions.

Non-Retail (Corporate, Bank, Sovereign & Equity Probability of Default / Loss Given Default Approach) Risk Function

- In this section, there are three equations that you can change coefficients for. All the equations have defaults values.
 - Correlation Equation: Non-High Volatility Commercial Real Estate:

$$\text{Correlation } r = (\text{First Coefficient}) \times (1 - \text{Exp}(-50 \times \text{PD})) / (1 - \text{Exp}(-50)) + (\text{Second Coefficient}) \times [1 - (1 - \text{Exp}(-50 \times \text{PD})) / (1 - \text{Exp}(-50))]$$

The default value for the first coefficient is 0.12. The default value for the second coefficient is 0.24. See: Non-Retail Corporate, Sovereign, and Bank Assets, page 3-2
 - Correlation Equation: High Volatility Commercial Real Estate:

$$\text{Correlation } r = (\text{First Coefficient}) \times (1 - \text{Exp}(-50 \times \text{PD})) / (1 - \text{Exp}(-50)) + (\text{Second Coefficient}) \times [1 - (1 - \text{Exp}(-50 \times \text{PD})) / (1 - \text{Exp}(-50))]$$

The default value for the first coefficient is 0.12, and the default value for the second coefficient is 0.3. See: Risk Functions, page 3-6.
 - Maturity Adjustment:

$$\text{Maturity Adjustment } (b) = (\text{First Coefficient}) - (\text{Second Coefficient}) \times \ln(\text{PD})^2$$

The default value of the first coefficient is 0.11852 and the second coefficient is 0.05478. See: Maturity, page 3-5.
- Retail: Residential Mortgage Correlation Equation Coefficient: The default value is 0.15. See: Retail Assets, page 3-9.
- Retail: Qualifying Revolving Exposures Correlation Equation Coefficient: The default value is 0.04. See: Retail Assets, page 3-9.
- Retail: All Other Correlation Equation Coefficient: The default value of the first coefficient is 0.03 and the second coefficient is 0.16. See: Retail Assets, page 3-9.
- Firm Size Adjustments: Enter the Maximum Threshold. The default value is 50. Enter the Minimum Threshold. The default value is 5. See: Firm Size Adjustments for Corporate Assets, page 3-6.

Retail - Residential Mortgages

- Correlation (r): The default value is 0.15. See: Retail Assets, page 3-9.

Retail - Qualifying Revolving Exposures

- Correlation (r): The default value is 0.04. See: Retail Assets, page 3-9.

Retail - All Other

- Correlation (r) = (First Coefficient) x (1 - Exp (-35 x PD)) / (1 - Exp (-35)) + (Second Coefficient) x [1 - (1 - Exp (-35 x PD)) / (1 - Exp (-35))]

The default value of the first coefficient is 0.03 and the second coefficient is 0.16. See: Retail Assets, page 3-9.

Firm Size Adjustments (in millions)

- Maximum Threshold: The default value is 50. See: Firm Size Adjustments for Corporate Assets, page 3-6.
- Minimum Threshold: The default value is 5. See: Firm Size Adjustments for Corporate Assets, page 3-6.

Related Topics

Modify Configuration Settings, page 7-7.

Procedure to Configure the Haircuts Values

The following options enables you to configure the various predefined values associated with haircuts:

- Supervisory Foreign Exchange Haircut (%): The default value is 8.
- Minimum Haircut Holding Period (days): The default value is 10.

Related Topics

Modify Configuration Settings, page 7-7.

Procedure to Configure the Operational Risk Values

The following option enables you to configure the various predefined values for alpha and beta factors according to the selected associated with the operational risk calculation process.

Basic Approach

- Alpha Factor (%): The default value is set at 15.

See: Business Line Alpha and Beta Factors, page A-1.

Beta Factors by Business Line

- Corporate Finance (%): The default value is set at 18.
- Trading and Sales (%): The default value is set at 18.
- Retail Banking (%): The default value is set at 12.
- Commercial Banking (%): The default value is set at 15.
- Payment and Settlement (%): The default value is set at 18.
- Agency Services (%): The default value is set at 15.
- Asset Management (%): The default value is set at 12.
- Retail Brokerage (%): The default value is set at 12.

See: Business Line Alpha and Beta Factors, page A-1.

Alternative Standardized Approach

- Alternative Standardized Factor (%): The default value is 3.5.

This attribute enables users to change the predefined Basel percent factor used to calculate required capital for banks that elect to use the alternative standardized approach.

Related Topics

Modify Configuration Settings, page 7-7.

Defining Operational Risk Methodology Settings

Use this procedure to specify the parameters for the operation risk methodology.

Prerequisites

- A RCM methodology elections rule with version must be created.

Procedure:

1. Navigate to the operational risk methodology page.
2. Select the operational risk methodology to be used. It could be one of the following:
 - Basic Approach
 - Standardized Approach
 - Advanced Measurement Approach
 - Advanced Measurement Approach and Basic
 - Advanced Measurement Approach and Standardized
3. If either of the standardized approach or advanced measurement approach (AMA) and standardized options are selected, one of the following attributes may be specified:
 - Retail Banking
 - Commercial Banking
4. For the AMA and basic and AMA and standardized options, the methodology should be selected for each organizational unit. The contents displayed in this table depends on the hierarchy selected when the methodology elections rule is created.

Note: Methodologies selected for a given node will apply to successors of that node unless the successor is defined distinctly. Also note that the selection should reconcile with the import of AMA imported data. It is the user responsibility to ensure that the imported value reconciles with the definitions in the methodology elections.
5. Click the parent unit to see all the dependant units. The corresponding credit risk approach is also displayed.

6. Select the operational risk methodology to be associated with each organizational unit.

Related Topics

Overview of Regulatory Capital Manager Methodology Elections, page 7-1.

Selecting a Methodology Election Rule, page 7-1

Creating a Version, page 7-3

Creating a Methodology Election Rule, page 7-2

Overview of Common Rule Management Tasks, page 5-1.

Duplicating Rules and Versions

Rules and versions can be duplicated to avoid entering data multiple times, which saves time and effort and also reduces mistakes. You can either duplicate the version only or both the rule and the version. In the former, you need to enter in the version name and the effective start and end dates. You should check that the new version's effective start and end dates do not overlap with any of the existing version date ranges for a particular rule. All existing versions for a rule are listed at the bottom of the duplicate rules and versions page. The rule related details cannot be updated.

When you duplicate a version and a rule, a new rule is created with a copy of the version. In this case, you need to enter in a rule name and version name, and you have the option for updating the effective start and end dates.

Prerequisites

- A RCM methodology elections rule with a version must be created.

Procedure:

1. Navigate to the methodology election rules page.
2. Select a rule.
3. From the results section, click Duplicate.
4. Select one of the following options.
 1. Select Rule and Version to create a new rule and a version.
 1. Select a folder in which the rule will be stored.
 2. Type a name for the new rule.
 3. Type a name for the new version.
 4. Update the effective start and end dates using the date picker. Alternatively, you can type them in the space provided.
 2. Select Version to create a new version in the same rule.
 1. Type a name for the new version.
 2. Update the effective start and end dates using the date picker. Alternatively, you can type them in the space provided.

Note: The new version's date range must not overlap with any of the existing version date ranges.

Related Topics

Overview of Regulatory Capital Manager Methodology Elections, page 7-1.

Selecting a Methodology Election Rule, page 7-1

Creating a Methodology Election Rule, page 7-2

Creating a Version, page 7-3

Overview of Common Rule Management Tasks, page 5-1.

Regulatory Capital Manager Process Rule

This chapter gives you detailed information related to creation and usage of process rules in the Oracle Regulatory Capital Manager solution.

This chapter covers the following topics:

- Overview of Regulatory Capital Manager Process Rule
- Selecting Rules
- Creating a Regulatory Capital Manager Process Rule
- Creating a Version
- Running a Process Rule

Overview of Regulatory Capital Manager Process Rule

The process rule allows you to submit methodology elections to the Regulatory Capital Manager calculation engine for processing. In addition, the process rule allows you to define parameters for processing, such as instrument tables and auditing options; it also allows you to select which calculations should be performed. Once a process rule has been defined, a user may select the rule to launch the calculations.

Selecting Rules

The Regulatory Capital Manager (RCM) process rules page permits you to create, search, manage, and execute process rules. This page is the gateway to the process rules and is also referred to as rule selector page.

Prerequisites

- Pre-defined rules.

Procedure:

1. Navigate to the process rules page.
2. Use the search functionality to narrow the rules displayed in the results section.
 - Select the folder where the rule is stored.
 - Type the rule name.
 - Select the effective date using the date picker.

- Click Go.

Note: If you click Go without any information in the search text entry field, all rules available to you are displayed.

Remember that only the rules that match the search criteria are displayed in the hierarchy grid of the results section.

3. Browse through the results.
 - The first level is the root of the three-level structure. A generic label is displayed.
 - The second level displays the names of the rules.
 - The third level displays the actual versions of the rules.
4. Select the rule or version that you want to work with.

Related Topics

Overview of the Regulatory Capital Manager Process Rule, page 8-1.

Creating a Process Rule, page 8-2

Overview of Common Rule Management Tasks, page 5-1.

Creating a Regulatory Capital Manager Process Rule

The Regulatory Capital Manager (RCM) process rules page also permits you to create process rules. Creating a Regulatory Capital Manager (RCM) process rule is a two-step process. You first need to create a rule and then a version of that rule.

Procedure:

1. Navigate to the process rules page.
2. Click Create Process Rule to open the create process rule: step 1: define rule page.
3. Select the folder where the rule will be stored.
4. Type the rule name.
5. Type the rule description.
6. Select the privileges that other users will have on this rule. The privileges can be either Read or Read and Write.
7. Click Continue to open the create process rule: step 2: define version page.

Note: Remember that at this point, a version has not been defined for your rule.

Related Topics

Overview of the Regulatory Capital Manager Process Rule, page 8-1.

Selecting Process Rules, page 8-1

Creating a Version, page 8-3

Overview of Common Rule Management Tasks, page 5-1.

Creating a Version

Use this procedure to:

- Define the parameters for the new version.
- Select the methodology elections rule to run.
- Select the currency output.
- Identify the dimension values to migrate to Ledger table.

In the process rule, users can specify whether both functional and entered currency should be migrated, or just the functional currency. When the amount is imported in the entered currency into the Value-at-Risk Results table, it is converted to the functional currency of the ledger. The currency conversion uses the exchange rate on the last day of the calendar period, or the latest available rate if there is no information for the last date of the calendar period.

Note: Use the same procedure to update a version.

Prerequisites

- A RCM process rule must be created.

Procedure:

1. Type a name for the version of the rule.
2. Specify the effective start and effective end dates using the date picker. Alternatively, you can type them in the space provided. These are the dates during which versions of a rule will be active in production.

Note: By default, the system displays the effective start and effective end dates, which are defined in the Application Preferences section. You can modify the effective dates while running a rule when appropriate.

3. Select the methodology elections rule that should be run in the process rule.
4. Select the currency output. The options are:
 - **Functional Only:** When this option is selected, risk weighted assets and minimum required capital are calculated only in the functional currency of the ledger.
 - **Entered and Functional:** When this option is selected, risk weighted assets and minimum required capital are calculated in both the entered and functional currency of the ledger. Entered and Functional is the default value.
5. Select the dimension values from the Account tables that you want to migrate to the Financial ledger. The options are Company / Cost Centre and Natural Account (for Credit Risk Only).

Related Topics

Overview of the Regulatory Capital Manager Process Rule, page 8-1.

Selecting Process Rules, page 8-1

Creating a Process Rule, page 8-2

Running a Process Rule, page 8-4

Overview of Common Rule Management Tasks, page 5-1.

Running a Process Rule

Use this procedure to select the options associated with running a process rule. The options include:

- Selecting the processing tables and setting conditions.
- Setting conditions.
- Selecting calculation options.
- Selecting auditing options.
- Determining the results data that is to be migrated to the financial ledger.

Prerequisites

- A RCM methodology elections rule with a version must be created.

Related Topics

Overview of the Regulatory Capital Manager Process Rule, page 8-1.

Selecting Process Rules, page 8-1

Creating a Process Rule, page 8-2

Creating a Version, page 8-3

Overview of Common Rule Management Tasks, page 5-1.

Procedure to Execute a Process Rule

To execute a process rule, you need to execute the following steps:

1. Navigate to the process rules page.
2. Search for the rule you want to execute.
3. From the results section, click Run for the version of the rule that you want to execute. The run process rule page is displayed.
4. Specify the effective start and end dates using the date picker. Alternatively, you can type them in the space provided.
5. Select the input output definition.
6. Select the ledger.
7. Select the calendar period.
8. Click Update Settings.

Procedure to Select Data Options

Use this procedure to select data options.

1. Select the processing tables to be used for the calculation process. This option enables you to select the account tables, from which the data that will be processed by the calculation engine can be sourced. To choose a table, move tables from the Available Tables view to the Selected Tables view.
2. Select a condition for the process. This condition determines the actual instruments that will be processed.

Procedure to Select Calculation Options

This page enable you to run a section of the process or the entire process. Each option on this page will have a checkbox associated with it. Many of the options are contingent on each other, therefore by clicking certain options, you will automatically select other options. This page is divided into two sections: credit risk - standardized approach and internal ratings based approach and operational risk.

Credit Risk - Standardized Approach

1. Risk Weight Determination: This process involves deriving the risk weights for all assets and mitigants. This process includes the application of any risk weight floors or adjustments that are applied to the asset or mitigant risk weight. See: Determining Risk Weights, page 2-2. When you choose this option, Risk Weight Assets Calculation is automatically selected.
2. Exposure Adjustment: This process involves all the calculations necessary to derive the net exposure value. Net exposure includes the on-balance sheet and off-balance sheet value of an asset. See: Determining Net Exposures, page 2-4. When you choose this option, Credit Risk Mitigation Adjustment and Risk Weight Assets Calculation are automatically selected.
3. Credit Risk Mitigation Adjustment: This process involves all the calculations used on calculating the adjusted mitigant value and final net exposure value. These values include haircuts and maturity adjustments. See: Applying Credit Risk Mitigation Techniques, page 2-6. When you choose this option, Risk Weight Assets Calculation is automatically selected.
4. Risk Weight Assets Calculation: This process consists of the algorithm necessary to calculate the weighted average risk weight and risk weighted assets for a given instrument. See: Calculating Risk Weighted Assets, page 2-17. This process assumes that the final net exposure value and risk weights for the asset and mitigants have already been calculated.

Credit Risk - Internal Ratings Based Approach

1. Risk Components & Mitigant Value Calculation: This process consists of all calculations necessary to derive the risk components. This process includes the application of credit risk mitigation techniques to derive an adjusted risk component value. See: Calculating Risk Weighted Assets, page 2-17. When you choose this option, risk function calculation is automatically selected.
2. Risk Function Calculation: This process consists of all calculations performed by the risk function to calculate risk weighted assets. See: Calculating Risk Weighted Assets, page 2-17.
3. Slotting Criteria Approach Calculation: This process involves all calculations necessary to calculate risk weighted assets for banks that have elected to use the slotting criteria approach. See: Calculating Risk Weighted Assets, page 2-17.

4. **Equity Calculation:** This process involves all calculations necessary to calculate risk weighted assets for banks that elect to use the simple method or internal model method for the equity asset class. See: Calculating Risk Weighted Assets, page 2-17.

Operational Risk

1. This process involves all calculations necessary to calculate required regulatory capital and risk weighted assets for operational risk. See: Calculating Risk Weighted Assets, page 2-17.

Note: Please remember that you must select all of the processing sets when you are processing a set of data for the first time. If you do not select all of the processing sets, you will obtain an invalid set of results.

Procedure to Select Audit Options

This page allows you to determine what calculations to output to an audit table. This section describes the procedure of auditing processes.

1. Select the processes to be audited. Only the calculation processes that have been selected before from the calculation options page can be audited as these are the only processes that are being run.

Procedure to set Audit Settings

This section describes the procedure of determining the volume of processed data that should be written to the audit tables.

Individual Accounts

1. Click Add Row in the table to enter the Account ID's of the accounts to be audited. These are unique identifiers associated with each instrument.
2. Select the Data Volume to be processed. The options are:
 1. None.
 2. First 10 Rows of Instrument Data plus Associated Mitigant Data: This option will output the first 10 rows of instrument data per asset class and the mitigant data associated with those 10 rows of data.
 3. First 50 Rows of Instrument Data plus Associated Mitigant Data: This option will output the first 50 rows of instrument data per asset class, and the mitigant data associated with those 50 rows of data.

Procedure to set Ledger Transfer

This section describes the procedure of choosing data that will be migrated to the account tables and the financial ledger.

1. Select the data that should be migrated to the financial ledger. The options are:
 1. Risk Weighted Assets (Credit Risk)
 2. Risk Weighted Assets (Market Risk)
 3. Allocated Regulatory Capital (Credit Risk)
 4. Allocated Regulatory Capital (Market Risk)

Generating Regulatory Capital Manager Reports

This chapter gives you detailed information related to Oracle Regulatory Capital Manager reports.

This chapter covers the following topics:

- Overview of Regulatory Capital Manager Reports
- Analysis of Total Credit Risk Required Capital by Portfolio Risk Weighted Under Different Methodologies
- Disclosure of Capital Requirements for Equity Risk Using Internal Ratings Based Approach
- Disclosure of Capital Requirements for Market Risk
- Disclosure of Capital Requirements for Operational Risk
- Total Credit Exposure and Average Gross Credit Risk Exposure Broken Down by Product Type
- Total Credit Exposure Broken Down by Geography and Product Type
- Analysis of Credit Risk Exposure Broken Down by Industry and Product Type
- Analysis of Credit Risk Exposure Broken Down by Residual Contractual Maturity and Product Type
- Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography
- Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry
- Reconciliation of Changes in the Allowances for Loan Impairment
- Analysis of Outstandings for Exposures Subject to Standardized Approach by Risk Bucket Split Between Externally Rated and Not Externally Rated
- Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for High Volatility Commercial Real Estate and Specialized Lending Products
- Disclosure of Nominal Exposure and Undrawn Exposure by Credit Risk Methodologies
- Disclosure of Each Portfolio Across Probability of Default Grades of Exposure, Default Weighted Average Loss Given Default, and Default Weighted Exposure at Default

- Analysis of Estimates Against Actual Outcomes over a Longer Period
- Analysis of Publicly Traded and Privately Traded Equity Investments by Carrying Value, Fair Value, and Market Value
- Analysis of Gains and Losses from Sales and Liquidations in Other Reporting Periods, and Realized Gains and Losses in Tier 1 and Tier 2 Capital
- Analysis of Equity Exposures for Banks Broken Down by Groupings, Provisions, Supervisory Transactions, and Grandfathering
- Total Gross Credit Exposures, Which are Covered by On-balance Sheet Netting, Collateral, Guarantees, and Credit Derivatives
- Disclosure of the Operational Risk Charge Before and After any Reduction in Capital from Insurance (Advanced Measurement Approach Only)
- Analysis of Net Income or Market Value for Upward and Downward Rate Shocks
- Disclosure of the Capital Requirements for Interest Rate Risk, Equity Position Risk, Foreign Exchange Risk, and Commodity Risk
- Disclosure for Each Internal Model Approach Portfolio of Aggregated, High, Mean, and Low Value-at-Risk Values and Comparison with Actual Outcomes

Overview of Regulatory Capital Manager Reports

Regulatory Capital Manager (RCM) allows users to leverage Oracle Discoverer to generate reports, and also to custom define reports based on the reporting need. The RCM seeded reports address Pillar III requirements for external reporting from the Basel committee. These reports may be further leveraged for internal management and reporting purposes.

Oracle Discoverer 4i was chosen as the Basel II reporting solution since it is an Internet application tightly integrated with Oracle e-Business Suite Release 11i. Discoverer 4i is a business intelligence solution that allows business users to access data from Oracle databases.

RCM includes all the reports required by the Accord. A number of reports require derived data from the Basel II solution to be compared against raw data from Oracle Financial Data Manager and the financial institution's external systems. In some cases, Oracle Discoverer 4i will be required to perform calculations. Therefore, you can implement these reports or modify them based on user specifications.

This chapter describes the advantages of Discoverer and how to set up the reports. See: *Oracle Discoverer 4i Plus User's Guide*.

Accessing Regulatory Capital Manager Reports

Regulatory Capital Manager (RCM) reports are stored in a business area called *EUL_US*. The business area is populated through facts, joins, and lookup tables. The following steps provide guidelines for accessing reports:

1. Navigate to the Documents page.
2. Click the hypertext links. All the reports are displayed as hypertext links under the sections; General Reports, Credit Risk Reports, Operational Risk Reports, and Market Risk Reports.

Conditions

The following conditions apply to all reports, and any exceptions are indicated in the report description. These conditions only apply if that column exists in the table. For instance, tables such as Value-at-Risk Results that do not have the column DATASET_CODE, the conditions on DATASET_CODE would not apply. The following table lists the various dimensions and their criteria used for general conditions.

General Conditions

Dimension	Criteria
Calendar Period	The user profile value for Period table.
Ledger	The user profile value for Ledger table.
Currency	Functional currency assigned to the ledger in the user profile.
Data Set	The user profile value for Input-Output Data Definition. Use this to get the input or output data set.

Note: You are required to select the data set and calendar period for all reports by default. And you are also required to access the ledger data through the Application Preferences section.

Customizing Reports

The following steps assist you in creating a new report similar to your current report:

1. Open the report with similar filters or facts that you need to run.
2. Modify the report based on the new specifications.
3. Click Yes to run the report, and save it to either to the database or the hard drive.

This process enables you to customize a Regulatory Capital Manager report to your specifications.

List of Reports

The following table lists the Regulatory Capital Manager reports and their Discoverer file names. You can find descriptions and technical detail on each report in the following section.

Regulatory Capital Manager Reports

WORKBOOK	SHEET TITLE	SHEET NAME
Capital Requirement for Credit Risk	Analysis of Total Credit Risk Required Capital by Asset Class and Methodology Type	Credit Risk Required Capital
Capital Requirements for Equity Risk	Disclosure of Capital Requirements for Equity Risk Using Internal Ratings Based Approach	Internal Ratings Based Approach
Capital Requirements for Market Risk	Disclosure of Capital Requirements for Market Risk	Market Risk Methodologies

WORKBOOK	SHEET TITLE	SHEET NAME
Capital Requirements for Operational Risk	Disclosure of Capital Requirements for Operational Risk	Operational Risk Methodologies
Total Credit Exposure by Product Type	Total Credit Exposure and Average Gross Credit Risk Exposure by Product Type	Product Type
Total Credit Exposure by Geography and Product Type	Total Credit Exposure by Geography and Product Type	Geography and Product
Credit Risk Exposure by Industry and Product Type	Analysis of Credit Risk Exposure by Industry and Product Type	Industry and Product
Credit Risk Exposure by Residual Contractual Maturity	Analysis of Credit Risk Exposure by Residual Contractual Maturity and Product Type	Contractual Maturity
Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography	Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography	Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography
Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry	Past Due and Impaired Exposures, Specific Provisions (including Charges and Charge-offs), and General Provisions by Industry	Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry
Changes in the Allowances for Loan Impairment	Reconciliation of Changes in the Allowances for Loan Impairment	Loan Impairment
Exposures with Standardized Approach by Risk Bucket	Analysis of Outstandings for Exposures Subject to Standardized Approach by Risk Bucket Split Between Externally Rated and Not Externally Rated	Risk Bucket
Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach	Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for High Volatility Commercial Real Estate and Specialized Lending Products	Supervisory Category
	Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for Equities	Equities
Exposure by Credit Risk Methodology	Disclosure of Nominal Exposure and Undrawn Exposure by Credit Risk Methodologies	Credit Risk Methodology
Exposure by Probability of Default Grades	Disclosure of Each Portfolio Across Exposure by Probability of Default Grades. (Advanced Only)	Exposure
	Disclosure of Each Portfolio Across Default-Weighted Average Loss Given Default by Probability of Default Grades. (Advanced Only)	Default Weighted Average Loss Given Default

WORKBOOK	SHEET TITLE	SHEET NAME
	Disclosure of Each Portfolio Across Default-Weighted Exposure at Default by Probability of Default Grades. (Advanced Only)	Default Weighted Average Exposure at Default
Estimates Against Actual Outcomes Over a Longer Period	Analysis of Estimates Against Actual Outcomes of Probability of Default, Loss Given Default, and Exposure at Default Over a Longer Period. (Advanced Only)	Estimates Versus Actual
Publicly and Privately Traded Equity Investments	Analysis of Publicly Traded and Privately Traded Equity Investments by Carrying Value, Fair Value, and Market Value	Publicly and Privately Traded
Realized and Unrealized Gains and Losses in Tier 1 and 2 Capital	Analysis of Gains and Losses from Sales and Liquidations in Other Reporting Periods and in Tier 1 and Tier 2 Capital	Gain and Losses
Equity Exposures for Banks	Analysis of Equity Exposures for Banks by Probability of Default	Probability of Default
	Analysis of Equity Exposures for Banks by Equity Approach	Equity Approach
	Analysis of Equity Exposures for Banks by Geography	Geography
	Analysis of Equity Exposures for Banks by Industry	Industry
	Analysis of Equity Exposures for Banks by Supervisory and Grandfathering	Supervisory and Grandfathering
Total Gross Credit Exposures	Total Gross Credit Exposures which are Covered by On-balance Sheet Netting, Collateral, Guarantees, and Credit Derivatives	Exposure by Mitigant Type
Operational Risk Charge Before and After Insurance in the Advanced Measurement Approach	Disclosure of the Operational Risk Charge Before and After Any Reduction from Insurance in the Advanced Measurement Approach	Insurance Advanced Measurement Approach
Net Income or Market Value by Rate Shocks	Analysis of Net Income or Market Value for Upward and Downward Rate Shocks	Net Income and Market Value
Capital Requirements by Portfolio Type	Disclosure of the Capital Requirements for Interest Rate Risk, Equity Position Risk, Foreign Exchange Risk, and Commodity Risk	Portfolio Type
Value-at-Risk Compared With Actual Outcomes	Disclosure of Value-at-Risk Amount and Losses using in the Internal Ratings Based Approach	Value-at-Risk

Distributing Reports

All the Regulatory Capital Manager reports are accessible from within the company or externally through a web browser. Discoverer 4i enables internal users to create, modify and execute ad hoc queries and reports. However, external users can view or navigate through the predefined reports that hide the complexity of the underlying data structures.

Prerequisites

To connect as an Oracle Applications user (Applications Mode), you need the following:

- Oracle Applications must be installed before Discoverer can be used in applications mode.
- The Discoverer Connect dialog, which is configured to allow connection to Oracle Applications EULs.
- An Oracle Applications version supported by Discoverer. Supported versions are:
 - Release 10.7 (SmartClient and Character mode)
 - Release 11
 - Release 11.5

Analysis of Total Credit Risk Required Capital by Portfolio Risk Weighted Under Different Methodologies

Basel Accord Table Reference: CP3/771: Table (3b).

Workbook: Capital Requirement for Credit Risk.

This statutory report details the total capital requirements for credit risk for portfolios subject to the standardized (STD), simplified standardized, and internal ratings based (IRB) approaches. For portfolios subject to the IRB approach, the report is broken down by the following asset classes.

- Non-retail: Corporates (including SL not subject to Supervisory Slotting criteria), Sovereign, and Banks.
- Retail: Residential Mortgage.
- Retail: Qualifying Revolving Exposures.
- Equity.

Securitized exposures, cash items in the process of collection, and all other assets classes belong to both STD and IRB approaches.

Implementation Notes

This table's attributes are stored in the Instrument Results table. Therefore, the user needs to run the process rule before displaying this report in Oracle Discoverer. The credit risk capital required is broken down not only by credit risk methodology type, both STD and IRB approaches, but also by asset classes such as corporates and retail.

Example Report

The following table is an example of the Analysis of Total Credit Risk Weighted Assets by Portfolio Risk Weighted Under Different Methodologies report.

Sample Report

Asset Class	Capital (Millions)
Portfolio: Standardized	\$xxx
Portfolio: Foundation: Internal Ratings Based	\$xxx
Corporates, Sovereign, and Banks	\$xxx
Retail	\$xxx
Residential Mortgages	\$xxx
Qualifying Revolving Exposures	\$xxx
Other Retail	\$xxx
Portfolio: Advanced: Internal Ratings Based	\$xxx
Corporates, Sovereign, and Banks	\$xxx
Retail	\$xxx
Residential Mortgages	\$xxx
Qualifying Revolving Exposures	\$xxx
Other Retail	\$xxx
Equity	\$xxx

Report Facts

The fact data in this report of this report are grouped by asset class and credit risk approach type. The data in rows 1-17 comes from the Instrument Results table, while data in rows 18-20 come from the Ledger table, as displayed in the following table.

Report Facts

Display Name	Table	Column
Portfolio: Standardized	Instrument Results	Allocated Capital
Portfolio: Internal Ratings Based: Foundation	Instrument Results	Allocated Capital
Corporates	Instrument Results	Allocated Capital
Sovereign	Instrument Results	Allocated Capital
Banks	Instrument Results	Allocated Capital
Retail	Instrument Results	Allocated Capital
Residential Mortgages	Instrument Results	Allocated Capital
Qualifying Revolving Exposures	Instrument Results	Allocated Capital
Other Retail	Instrument Results	Allocated Capital
Portfolio: Internal Ratings Based: Advanced	Instrument Results	Allocated Capital
Corporates	Instrument Results	Allocated Capital
Sovereign	Instrument Results	Allocated Capital
Banks	Instrument Results	Allocated Capital
Retail	Instrument Results	Allocated Capital
Residential Mortgages	Instrument Results	Allocated Capital
Qualifying Revolving Exposures	Instrument Results	Allocated Capital
Other Retail	Instrument Results	Allocated Capital
Equity		

Additional Conditions

1. Credit Risk Approach Type
2. Operational Risk Methodology

Calculations

The credit risk required capital is calculated by asset classes, both portfolio and retail and by credit risk methodology type, both IRB - foundation and IRB - advanced approaches. The following table describes the details of these calculations.

Calculations

Fact	Calculation
Portfolio: Internal Ratings Based: Foundation	The portfolio is calculated by summing the values of corporates, sovereign, banks, and equity. Where: The asset class is equal to IRB: foundation.
Retail: Internal Ratings Based: Foundation	The retail is calculated by summing the values of residential mortgages, qualifying revolving exposures, other retail, and equity. Where: The asset class is equal to IRB: foundation.
Portfolio: Internal Ratings Based: Advanced	The portfolio is calculated by summing the values of corporates, sovereign, banks, and equity. Where: The asset class is equal to IRB: advanced.
Retail: Internal Ratings Based: Advanced	The retail is calculated by summing the values of residential mortgages, qualifying revolving exposures, other retail, and equity. Where: The asset class is equal to IRB: advanced.

Dimensions and Hierarchies

The credit risk required capital is displayed by credit approach type and asset class as shown in the following tables. The initial view of this report shows the asset class hierarchy at the top level only. The ability to drill into deeper levels of the hierarchy depends on user privileges.

Dimensions - Credit Risk Approach and Asset Class

Dimension	Description	Hierarchy
Credit Risk Approach Type	<p>Approach Type is the classification assigned to the Basel II methodology.</p> <ol style="list-style-type: none"> 1. Standardized Approach 2. Internal Ratings Based Approach 	<p>Standardized Approach Sovereign Sovereign: Basic Sovereign: Specific Public Sector Entities</p>
Asset Class	<p>This is the classification assigned to the Basel 2 intermediate asset class such as sovereign, banks, and retail.</p>	<p>Multilateral Development Banks Multilateral Development Banks: Basic Multilateral Development Banks: Specific Banks Securities Firms Corporates Regulatory Retail Portfolio Residential Property Commercial Real Estate Past Due Loans Past Due Loans: All Other Qualified Residential Mortgages: Past Due Loans Equity: Basic Internal Ratings Based Approach Non-retail Non-retail: Sovereign Sovereign Sovereign Leases Non-retail: Banks Banks Bank Leases Non-retail: Corporates Corporates Corporates: Specialized Lending Corporates: High Volatility Commercial Real Estate Estate Corporates: Purchase Receivables Corporates: Leases</p>

Dimensions - Asset Class

Dimension	Description	Hierarchy
Asset Class	This is the classification assigned to the Basel 2 intermediate asset class such as sovereign, banks, and retail.	Retail Retail Secured by Residential Property Retail: Residential Properties Retail: Residential Properties: Purchase Receivables Retail: Residential Properties: Leases Retail: Qualifying Revolving Exposures Retail: Revolving Exposures Retail: Revolving Exposures: Purchase Receivables Retail: Revolving Exposures: Leases Retail: All Other All Other Retail Purchase Receivables All Other Retail Leases Equity Equity: Basic Zero-Capital Charge Equity

Disclosure of Capital Requirements for Equity Risk Using Internal Ratings Based Approach

Basel Accord Table Reference: CP3/771: Table (3c).

Workbook: Capital Requirements for Equity Risk.

This regulatory report details the capital requirements for equity risk in the internal ratings based (IRB) approach. This includes equity portfolios subject to market-based approaches such as equity portfolio subject to simple risk weight method and equities in the banking book under the internal model approach (IMA) for banks using IMA for banking book equity exposures) and equity portfolio subject to probability of default (PD) / loss given default (LGD) approaches.

Note: This report applies to the internal ratings based approach.

Example Report

The following table is an example of Disclosure of Capital Requirements for Equity Risk using Internal Ratings Based Approach report.

Sample Report

Internal Ratings Based Approaches	Capital (Millions)
Equity: Market Based Approaches	\$xxx
Simple Risk Weight Method	\$xxx
Internal Model Approach (IMA)	\$xxx
Equity: Probability of Default / Loss Given Default Approaches	\$xxx

Report Facts

All the fact data in this report comes from the Instrument Results table, as displayed in the following table.

Report Facts

Report Line Text	Table	Column
Equity: Market Based Approaches	Instrument Results	Allocated Capital
Simple Risk Weight Method	Instrument Results	Allocated Capital
Internal Model Approach	Instrument Results	Allocated Capital
Equity: Probability of Default / Loss Given Default Approaches	Instrument Results	Allocated Capital

Additional Conditions

The data is filtered through the following equity approach and credit risk approach type.

1. Equity Approach
 1. Simple Risk Weight Method
 2. Internal Model Approach
 3. PD and LGD Approaches
2. Credit Risk Approach Type = IRB Approach

Calculations

The total regulatory capital per dimension is calculated. The following table describes the details of this calculation.

Calculations

Fact	Calculation
Credit Risk Required Capital: Internal Ratings Based Approach	Sum of allocated capital when asset class equals equity approach and credit risk approach type equals IRB approach.

Dimensions and Hierarchies

The dimension in the Instrument Results table is equity approach, where the simple risk weight method and internal model: alternative approach are artificially grouped together as Equity: Market-based approaches.

There is one hierarchy for this report and it is manually created in Discoverer using new calculated items to perform the groupings on Equity Type, as displayed in the following table.

Dimensions

Dimension	Description	Hierarchy
Market Risk Methodology	This is the market risk methodology applied in order to calculate regulatory capital.	<ul style="list-style-type: none">• Standardized• Internal Ratings Based: Alternative Approach• Probability of Default / Loss Given Default Approaches
Calendar Period	The 'as of' reporting date.	Date

Disclosure of Capital Requirements for Market Risk

Basel Accord Table Reference: CP3/771: Table (3d).

Workbook: Capital Requirements for Market Risk.

This statutory report details the total capital requirements for market risk using the standardized (STD) approach and internal ratings based (IRB) approach for trading book.

Analysis of the capital requirements for market risk is used by the external market, senior management, finance, regulators, and risk control. This is used to review the total amount of market risk capital requirements across the different regulatory approaches. The suggested frequency of producing this report is on a quarterly basis.

Example Report

The following table is an example of the Disclosure of Capital Requirements for Market Risk report.

Sample Report

Approaches	Capital (Millions)
Market Risk: Standardized Approach	\$xxx
Market Risk: Internal Ratings Based Approach	\$xxx

Report Facts

All the fact data in this report comes from the Value-at-Risk Results table, as displayed in the following table.

Report Facts

Report Line Text	Column or Formula	Condition
Standardized Approach	Capital Requirement for Market Risk	Market Risk Methodology equals 1
Internal Reports Approach	Capital Requirement for Market Risk	Market Risk Methodology equals 2

Calculations

The total regulatory capital per dimension is calculated. The following table describes the details of this calculation.

Calculations

Fact	Calculation
Market Risk Capital Required	Total regulatory capital per dimension.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Market Risk Methodology	This is the market risk methodology applied in order to calculate regulatory capital.	<ul style="list-style-type: none">• Standardized Approach• Internal Ratings Based Approach
Calendar Period	The 'as of' reporting date.	Date

Disclosure of Capital Requirements for Operational Risk

Basel Accord Table Reference: CP3/771: Table (3e).

Workbook: Capital Requirements for Operational Risk.

This regulatory report details the capital requirements for operational risk under the basic indicator, standardized, and advanced measurement approaches.

Example Report

The following table is an example of the Disclosure of Capital Requirements for Operational Risk report.

External Disclosure

Operational Risk Methodologies	Capital
The Basic Indicator Approach	\$xxx
Total Standardized Approach	\$xxx
Advanced Measurement Approach	\$xxx
Total Operational Risk Required Capital	\$xxx

Report Facts

All the fact data in this report comes from the average balance in the Functional Currency column in the Ledger table, as displayed in the following table. To determine the methodology, the object definition for that row is taken into the Ledger table, and traced to the rule to locate the methodology used for that rule-version.

Report Facts

Report Line Text	Column or Formula
Basic Indicator Approach	Average balance in functional currency
Total Standardized Approach	Average balance in functional currency
Alternative Standardized Approach	Average balance in functional currency
Standardized Approach	Average balance in functional currency
Advanced Measurement Approach	Average balance in functional currency
Total Regulatory Capital Requirement for Operational Risk	Sum of Basic Indicator, Total Standardized and Advanced Measurement Approaches.

Calculations

The following table describes the details of these calculations.

Calculations

Fact	Calculation
Operational Risk Required Capital	Total regulatory capital per dimension.
Total Operational Risk Required Capital	Sum of basic approach required capital, standardized approach required capital, and advanced measurement approach required capital.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Operational Risk Methodology Type	This is the operational risk methodology applied in order to calculate regulatory capital.	Basic Indicator Standardized Standardized Approach Alternate Standardized Approach Advanced Measurement Approach
Calendar Period	The 'as of' reporting date.	Date

There is one Discoverer hierarchy for this report on the operational risk methodology dimension. This hierarchy will be built using the attribute *OPRISK_STD_FLAG* on operational risk methodology code.

Total Credit Exposure and Average Gross Credit Risk Exposure Broken Down by Product Type

Basel Accord Table Reference: CP3/774: Table (4b).

Workbook: Total Credit Exposure by Product Type.

This statutory report details the gross credit exposure, plus average gross exposure over the period broken down by major types of credit exposure. Major exposure types may differ for each different organization.

Example Report

The following table is an example of the Total Credit Exposure and Average Gross Credit Risk Exposure Broken Down by Product Type report.

Sample Report

Description	Total Credit Exposure	Average Gross Credit Risk Exposure
Loans, Commitments, and other Non-derivative Off-balance Sheet Exposures	\$xxx	\$xxx
Securities	\$xxx	\$xxx
Over the Counter Derivatives	\$xxx	\$xxx
Total	\$xxx	\$xxx

Report Facts

All the fact data in this report comes from the Instrument Results and Instrument tables, as displayed in the following list. As the product type is a column in the

Instrument table, the Instrument Results and the Instrument tables view must be combined. The rows are delineated by product type dimension values.

- Total Credit Risk Exposure
- Average Credit Risk Exposure

Calculations

Each instrument is one exposure. Therefore, the total number of exposures equals the number of rows in the Instrument Results table. The following table describes the details of these calculations.

Calculations	
Fact	Calculation
Total Credit Risk Exposure	Total nominal credit exposure by dimension. Sum of net exposure by product type.
Average Gross Credit Risk Exposure	Average nominal exposure is calculated by summing all nominal exposures and dividing that value by the number of exposures within that dimension.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions		
Dimension	Description	Hierarchy
Product Type	This is the classification of the Basel II product types representing an identifier for the portfolio.	Loans, Commitments, and other Non-derivative Off-balance Sheet Exposures such as Over the Counter Derivatives.
Calendar Period	The 'as of' reporting date.	Date

Total Credit Exposure Broken Down by Geography and Product Type

Basel Accord Table Reference: CP3/774: Table (4c).

Workbook: Total Credit Exposure by Geography and Product Type.

This statutory report details the geographical distribution of exposures, broken down in significant areas by different types of credit exposure. Major exposure types may differ depending on the organization.

Example Report

The following table is an example of the Total Credit Exposure Broken Down by Geography and Product Type report.

Sample Report

Geographic Area	Loans, Commitments, and other Non-derivative Off-balance Sheet Exposures	Securities	Over the Counter Derivatives	Total
UK	\$xxx	\$xxx	\$xxx	\$xxx
Europe	\$xxx	\$xxx	\$xxx	\$xxx
USA	\$xxx	\$xxx	\$xxx	\$xxx
Asia Pacific	\$xxx	\$xxx	\$xxx	\$xxx
Rest of the World	\$xxx	\$xxx	\$xxx	\$xxx
Total	\$xxx	\$xxx	\$xxx	\$xxx

Report Facts

All the fact data in this report comes from the Instrument Results table, as displayed in the following table. This report has one fact that is the total credit risk exposure. The rows are delineated by geography code dimension values. The bottom row contains the total value for all geographic codes. While the columns are delineated by product type code dimensions values for the node level in the hierarchy.

Report Facts

Fact	Table	Column
Credit Exposure Type	Instrument Results	Net Exposure

Calculations

The following table describes the details of this calculation.

Calculations

Fact	Calculation
Credit Exposure Type	Total nominal credit exposure by dimension equals the sum of net exposure by geography and product type.

Dimensions and Hierarchies

External reports display the geographic code values from the top level in the hierarchy as shown in the following table.

The columns displaying product type code will not be displayed hierarchically.

Dimensions

Dimension	Description	Hierarchy
Geographic Area	Used to group exposures in different geographical regions into higher level categories.	Region (Europe)
Product Type	This is the classification of the Basel 2 product types representing an identifier for the portfolio.	Loans, Commitments, and other Non-derivative Off-balance Sheet Exposures.
Calendar Period	The 'as of' reporting date.	Date

Analysis of Credit Risk Exposure Broken Down by Industry and Product Type

Basel Accord Table Reference: CP3/774: Table (4d).

Workbook: Credit Risk Exposure by Industry and Product Type.

This statutory report details the industry type distribution of exposure, broken down by major types of credit exposure. Major exposure types may differ by different organization.

Example Report

The following table is an example of the Analysis of Credit Risk Exposure Broken Down by Industry and Product Type report.

Sample Report

Industry	Loans, Commitments, and other Non-derivative Off-balance Sheet Exposures	Securities	Over the Counter Derivatives	Total
Financials	\$xxx	\$xxx	\$xxx	\$xxx
Utilities	\$xxx	\$xxx	\$xxx	\$xxx
Technology	\$xxx	\$xxx	\$xxx	\$xxx
Industrials	\$xxx	\$xxx	\$xxx	\$xxx
Other	\$xxx	\$xxx	\$xxx	\$xxx
Total	\$xxx	\$xxx	\$xxx	\$xxx

Report Facts

All the fact data in this report comes from the Net Exposure column in the Instrument Results table, as displayed in the following table. The rows and columns come from the Instrument table.

Report Facts

Fact	Table	Column
Gross Credit Exposure Type	Instrument Results	Net Exposure

Calculations

The following table displays the formula for calculating the Total Nominal Credit Exposure.

Calculations

Fact	Calculation
Gross Credit Exposure Type	Total nominal credit exposure by dimension equals the sum of net exposure by industry and product type.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Industry	Used to group exposures in different industry regions (by SIC Code) into higher level categories.	Mining <ul style="list-style-type: none">• Coal• Oil• Metal• Gas Construction <ul style="list-style-type: none">• Heavy Construction• Special Trade Manufacturing
Product Type	This is the classification of the Basel 2 product types representing an identifier for the portfolio.	Loans, Commitments, and other Non-derivative Off-balance Sheet Exposures. Securities Over the Counter Derivatives
Calendar Period	The 'as of' reporting date.	Date

Analysis of Credit Risk Exposure Broken Down by Residual Contractual Maturity and Product Type

Basel Accord Table Reference: CP3/774: Table (4e).

Workbook: Credit Risk Exposure by Residual Contractual Maturity.

This statutory report details the residual contract maturity breakdown for the whole portfolio, broken down by major types of credit exposure. Major credit exposure types may differ by different organization.

Example Report

The following table is an example of the Analysis of Credit Risk Exposure Broken Down by Residual Contractual Maturity and Product Type report.

Sample Report

Maturity	Loans, Commitments, and other Non-derivative Off-balance Sheet Exposures	Securities	Over the Counter Derivatives	Total
Less than three months	\$xxx	\$xxx	\$xxx	\$xxx
Three months to one year	\$xxx	\$xxx	\$xxx	\$xxx
One to five years	\$xxx	\$xxx	\$xxx	\$xxx
Five to ten years	\$xxx	\$xxx	\$xxx	\$xxx
Over ten years	\$xxx	\$xxx	\$xxx	\$xxx
Total	\$xxx	\$xxx	\$xxx	\$xxx

Report Facts

All the fact data in this report comes from the Instrument Results table, as displayed in the following table. The maturity bond is based on the remain_term and remain_term_multiplier.

Report Facts

Fact	Table	Column
Credit Exposure Type	Instrument Results	Net Exposure

Calculations

The following table describes the details of this calculation.

Calculations

Fact	Calculation
Credit Exposure Type	Sum of net exposure by maturity band and product type.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Product Type	This is the classification of the Basel 2 product types representing an identifier for the portfolio.	Loans, Commitments, and Other Non-derivative Off-balance Sheet Exposures Securities Over the Counter derivatives <ul style="list-style-type: none"> • Interest Rate Contracts • Foreign Exchange Contracts
Maturity Band	This is the classification for the residual maturity of the exposure.	<ul style="list-style-type: none"> • Less than 3 months • 3 months to 6 months • 6 months to 1 year • 1 year to 5 years • 5 years to 10 years
Calendar Period	The 'as of' reporting date.	Date

Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography

Basel Accord Table Reference: CP3/774: Table (4f)

Workbook: Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography.

The report displays the past due and impaired exposures, specific provisions, and general provisions for different geographic locations.

Example Report

The following table is an example of the Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography report.

Sample Report

Past Due- Geography	Past Due - Exposure Amount	Past Due - Specific Provision	Impaired - Exposure Amount	Impaired - Specific Provision	Impaired - General Provision
Geography	\$xxx	xxx	\$xxx	xxx	xxx
Geography	\$xxx	xxx	\$xxx	xxx	xxx

Report Facts

All the fact data in this report comes from the Commercial Loans, Consumer Loans, Credit Cards, Credit Lines, Investments, Leases, Mortgage Backed Securities, Mortgages, Off-balance Sheet tables, as displayed in the following table.

Report Facts

Fact	Table	Column
Past Due: Exposure Amount	All instrument tables.	Current net book balances from all instrument tables.
Past Due: Specific Provision	All instrument tables.	Specific provisions from all instrument tables.
Impaired: Exposure Amount	All instrument tables.	Current net book balances from all instrument tables.
Impaired: Specific Provision	All instrument tables.	Specific provisions from all instrument tables.
Impaired: General Provision	Credit Limits	The amount from Credit Limits table.

Note: Remember that all general provisions not allocated to an GEOGRAPHY_ID must be reported as *Unallocated Geographic General Provision*. Therefore, you must modify the GEOGRAPHY_ID dimension while implementing the application, to include an *Unallocated Geographic General Provision* member and import data to map to this member in the Credit Limits table, if applicable.

Additional Conditions

- Past Due Flag, which is calculated as shown in the following table.

Value	Criteria
Past Due	All Instruments where Credit Status equals 1 and DEL_CUR_DAYS is lesser than or equals 90 days
Impaired	All Instruments where Impaired Flag Attribute for Credit Status equals 'Y' or (Credit Status equals 1 and DEL_CUR_DAYS greater than 90 days.
Other	All Else

- Portfolio Balance Type Code = *GENERAL PROVISION*
- Data Set: The following data sets need to be selected while running this report.
 - Instruments Data Set: Input data set of the instrument tables.
 - Credit Limits Data Set: Credit Limit data set.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Geography	The geographic area under which the report is segregated.	Geography

Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry

Basel Accord Table Reference: CP3/774: Table (4g)

Workbook: Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry.

The report displays the past due and impaired exposures, specific provisions, and general provisions for different industries.

Example Report

The following table is an example of the Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry report.

Sample Report

Past Due - Industry Classification	Past Due - Exposure Amount	Past Due - Specific Provision - Ending Balance	Past Due - Specific Provision - Charges	Past Due - Specific Provision - Charge-offs	Impaired - Exposure Amount	Impaired - Specific Provision - Ending Balance	Impaired - Specific Provision - Charges	Impaired - Specific Provision - Charge-offs	Impaired - General Provision
Industry	\$xxx	xxx	xxx	xxx	\$xxx	xxx	xxx	xxx	xxx
Industry	\$xxx	xxx	xxx	xxx	\$xxx	xxx	xxx	xxx	xxx

Report Facts

All the fact data in this report comes from the Commercial Loans, Consumer Loans, Credit Cards, Credit Lines, Investments, Leases, Mortgage Backed Securities, Mortgages, Off-balance Sheet tables, as displayed in the following table.

Report Facts

Fact	Table	Column
Past Due: Exposure Amount	All instrument tables.	Current net book balances from all instrument tables.
Past Due: Specific Provision	All instrument tables.	Specific provisions from all instrument tables.
Impaired: Exposure Amount	All instrument tables.	Current net book balances from all instrument tables.
Impaired: Specific Provision	All instrument tables.	Specific provisions from all instrument tables.
Impaired: General Provision	Credit Limits	The amount from Credit Limits table.

Additional Conditions

- Past Due Flag, which is calculated as shown in the following table.

Value	Criteria
Past Due	All Instruments where Credit Status equals 1 and DEL_CUR_DAYS is lesser than or equals 90 days
Impaired	All Instruments where Impaired Flag Attribute for Credit Status equals 'Y' or (Credit Status equals 1 and DEL_CUR_DAYS greater than 90 days).
Other	All Else

- Portfolio Balance Type Code = *GENERAL PROVISION*
- Data Set: The following data sets need to be selected while running this report.
 - Instruments Data Set: Input data set of the instrument tables.
 - Credit Limits Data Set: Credit Limit data set.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Standard Industrial Classification	Standard Industrial Classification	RCM: Standard SIC Hierarchy

Reconciliation of Changes in the Allowances for Loan Impairment

Basel Accord Table Reference: CP3/744: Table (4h) and (4i).

Workbook: Changes in the Allowances for Loan Impairment.

This statutory report details the reconciliation of changes in the allowances for loan impairment. Note that the closing balances will just be the opening balances from the next calendar period for the same account.

Example Report

The following table is an example of the Reconciliation of Changes in the Allowances for Loan Impairment report.

Sample Report

Reconciliation	Specific Allowances (millions)	General Allowances (millions)	Total Allowances (millions)
Opening Balance	\$xxx	\$xxx	\$xxx
Recoveries / Amounts set aside	\$xxx	\$xxx	\$xxx
Charge-offs during periods	\$xxx	\$xxx	\$xxx
Adjustment to provisions	\$xxx	\$xxx	\$xxx
Closing Balance	\$xxx	\$xxx	\$xxx
Movement in provisions during the period	\$xxx	\$xxx	\$xxx

Report Facts

All the fact data in this report comes from the average balance in the Functional Currency column in the Ledger table, as displayed in the following table.

Report Facts

Fact	Table	Column
Allowance_Spec_Op	Ledger	Average balance in functional currency
Allowance_Spec_Rec	Ledger	Average balance in functional currency
Allowance_Spec_Cha	Ledger	Average balance in functional currency
Allowance_Spec_Ad	Ledger	Average balance in functional currency
Allowance Specific Closing Balance	Ledger	Average balance in functional currency
SA_movements	Ledger	Average balance in functional currency
Allowance_Gen_Op	Ledger	Average balance in functional currency
Allowance_Gen_Rec	Ledger	Average balance in functional currency
Allowance_Gen_Cha	Ledger	Average balance in functional currency
Allowance_Gen_Adj	Ledger	Average balance in functional currency

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Calendar Period	The 'as of' reporting date.	Date

Analysis of Outstandings for Exposures Subject to Standardized Approach by Risk Bucket Split Between Externally Rated and Not Externally Rated

Basel Accord Table Reference: CP3/774: Table (5b).

Workbook: Exposures with Standardized Approach by Risk Bucket.

This regulatory report provides an analysis of banks outstanding exposures split between externally rated and not externally rated exposures by probability of default grade. Note that this report refers only to the credit risk - standardized approach.

Example Report

The following table is an example of the Analysis of Outstandings for Exposures Subject to Standardized Approach by Risk Bucket Split Between Externally Rated and Not Externally Rated report.

Sample Report

Risk Bucket	Outstanding Exposures under the Standardized Approach (millions)	Outstanding Exposures under the Standardized Approach (millions)
	All Exposures: Externally Rated	All Exposures: Not Externally Rated
Risk Grade 1	\$xxx	\$xxx
Risk Grade 2	\$xxx	\$xxx
Risk Grade 3	\$xxx	\$xxx
Risk Grade 4	\$xxx	\$xxx
Risk Grade n	\$xxx	\$xxx
Total	\$xxx	\$xxx

Report Facts

All the fact data in this report comes from the Instrument table, as displayed in the following table. Since risk weight is a percentage value, it needs to be averaged when aggregating over all instruments for a specific asset class. Risk grade is determined by checking the risk weight in the Instrument table against risk grade minimum and maximum.

Report Facts

Fact	Table	Column
Net Exposure - Externally Rated	Instrument	Net Exposure Credit Rating Code Risk Weight
Net Exposure - Not Externally Rated	Instrument	Net Exposure Credit Rating Code Risk Weight

Additional Conditions

Credit Risk Approach Type = Standardized Approach

Calculations

This report calculates the total nominal credit exposure by dimension under standardized approach, as displayed in the following table:

Calculations

Fact	Calculation
Net Exposure - Externally Rated	Sum of net exposure by risk weight when credit rating code not equal to 69.
Net Exposure - Unrated	Sum of net exposure by risk weight when credit rating equals 69.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Risk Bucket	Used to group exposures by risk grade.	Risk Grade number
Credit Rating	Flag to indicate whether the rating for the counterparty is external or not.	Yes No
Credit Risk Approach	This is the classification assigned to the Basel II methodology.	Standardized
Calendar Period	The 'as of' reporting date.	Date

Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for High Volatility Commercial Real Estate and Specialized Lending Products

Basel Accord Table Reference: CP3/774: Table (5b).

Workbook: Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach.

This regulatory report discloses the bank’s outstanding amount in each risk bucket for those exposures subject to the supervisory risk weights in internal ratings based (IRB) approach for high volatility commercial real estate (HVCRE) and specialized lending (SL) products subject to supervisory slotting criteria and equities under the simple risk weight method. The risk weight percentages are stored in a lookup table.

Note: This report appears only if the customer selects the IRB approach for credit risk, and the specialized lending data is populated with slotting criteria.

Example Report

The following tables are examples of the Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for High Volatility Commercial Real Estate and Specialized Lending Products subject to the Slotting Criteria and the Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for Equities reports.

Sample Report

Supervisory Category	HVCRE: Risk Weight	HVCRE: Amount	SL Products: Risk Weight	SL Products: Amount
Strong	100%	\$xxx	75%	\$xxx
Good	125%	\$xxx	100%	\$xxx
Satisfactory	175%	\$xxx	150%	\$xxx
Weak	350%	\$xxx	350%	\$xxx
Default	625%	\$xxx	625%	\$xxx

Sample Report

Equities	Risk Weights	Amount
Publicly traded	300%	\$xxx
All others	400%	\$xxx

Report Facts

All the fact data in this report comes from the Instrument table, as displayed in the following table. Since risk weight is a percentage value, it needs to be averaged when aggregating over all instruments for the specific asset class.

Report Facts

Fact	Table	Column
Supervisory Category - Net Exposure Amount for HVCRE and SL Products	Instrument	Net Exposure
Supervisory Category - Net Exposure Amount for Equity	Instrument	Net Exposure

Additional Conditions

Credit Risk Approach Type = IRB Approach

Specialized Lending = Slotting Criteria Approach

Calculations

This report calculates the total nominal credit exposure by dimension, as displayed in the following table.

Calculations

Fact	Calculation
Supervisory Category: Net Exposure Amount for HVCRE and SL Products	If credit risk approach type equals IRB and asset class equals HVCRE and SL products, then the sum of net exposure by slotting criteria, risk weight, and asset class. Otherwise, no information is displayed.
Supervisory Category: Net Exposure Amount for Equity	If credit risk approach type equals IRB and equity type equals investments, sum of net exposure by slotting criteria, risk weight, and asset class. Otherwise, no information is displayed.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Credit Risk Approach - Internal Ratings Based	Credit Risk based Basel Approach.	Internal Ratings Based Approach
Slotting Criteria	Supervisory risk weights defined for SL asset types.	Strong Good Satisfactory Weak
Risk Weight	Risk Weight determine as result of Slotting Criteria approach.	Lookup table
Asset Class	This is the classification assigned to the Basel 2 intermediate asset class.	High Volatility Commercial Real Estate Specialized Lending Products
Equity Type	This is used to identify whether the equity is publicly traded.	Private/Public
Calendar Period	The 'as of' reporting date.	Date

Disclosure of Nominal Exposure and Undrawn Exposure by Credit Risk Methodologies

Basel Accord Table Reference: CP3/775: Table (6d).

Workbook: Exposure by Credit Risk Methodology.

This regulatory report provides an analysis of the percentage of total credit exposures (drawn plus exposure at default (EAD) on the undrawn) to which internal ratings based (IRB) approach disclosures relate. The suggested frequency of producing this report is on a quarterly basis.

Example Report

The following table is an example of the Disclosure of Nominal Exposure and Undrawn Exposure by Credit Risk Methodologies report.

Sample Report

Methodology	Nominal Exposures (%)	Undrawn Exposure (%)
Standardized	xxx%	xxx%
Internal Ratings Based - Foundation	xxx%	xxx%
Internal Ratings Based - Advanced	xxx%	xxx%

Report Facts

All the fact data in this report comes from the Instrument table, as displayed in the following table.

Report Facts		
Fact	Table	Column
Net Exposure Percentage	Instrument	Net Exposure on-balance Sheet Loss Given Default Approach Exposure at Default Approach
Undrawn Commitment	Instrument	Undrawn Commitment Loss Given Default Approach Exposure at Default Approach

Calculations

This report calculates the net exposure percentage by calculating the total nominal credit exposure by dimension divided by total nominal credit exposure. It also calculates the undrawn commitment by calculating the total current value of exposure (drawings) to a given obligor and facility which is subject to the credit conversion factor treatment by dimension divided by the total current value of exposure (drawings) which is subject to the credit conversion factor, as displayed in the following table.

Calculations

Fact	Calculation
Net Exposure Percentage	<p>Standardized</p> <p>Sum on net exposure on-balance sheet (when approach equals standardized) divided by sum of net exposure on-balance sheet plus current net book balance multiplied by 100.</p> <p>IRB Foundation</p> <p>Sum of current net book balance (where LGD and EAD approaches equals foundation) divided by sum of net exposure on-balance sheet plus current net book balance multiplied by 100.</p> <p>IRB Advanced</p> <p>Sum of current net book balance (where LGD and EAD approaches equals advanced) divided by sum of net exposure on-balance sheet plus current net book balance multiplied by 100.</p>
Undrawn Commitment	<p>Standardized</p> <p>Sum on undrawn commitments (when approach equals standardized) by sum of undrawn commitments multiplied by 100.</p> <p>IRB Foundation</p> <p>Sum of undrawn commitments (where LGD and EAD approaches equals foundation) divided by sum of undrawn commitments multiplied by 100.</p> <p>IRB Advanced</p> <p>Sum of undrawn commitments (where LGD and EAD approaches equals advanced) divided by sum of undrawn commitments multiplied by 100.</p>

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Credit Risk Approach Type	<p>This is the methodology applied to calculate credit risk regulatory capital.</p> <p>If the approach type is IRB approach, and if the loss given default method is advanced and exposure at default approach is advanced, the credit risk approach type should be advanced. Else, the foundation approach should be used.</p>	<p>Standardized Approach</p> <p>IRB - Foundation Approach</p> <p>Loss Given Default - Advanced Approach</p> <p>Exposure at Default - Advanced Approach</p>
Calendar Period	The 'as of' reporting date.	Date

Disclosure of Each Portfolio Across Probability of Default Grades of Exposure, Default Weighted Average Loss Given Default, and Default Weighted Exposure at Default

Basel Accord Table Reference: CP3/775: Table (6e).

Workbook: Exposure by Probability of Default Grades.

This regulatory report outlines the presentation of exposures (outstanding loans and exposure at default on undrawn commitments, outstanding equities) across a sufficient number of probability of default grades (including default) to allow for a meaningful differentiation of credit risk. For banks using the IRB - Advanced approach, the report outlines the default weighted average loss given default (percentage) value for each probability of default grade. And, for banks using the IRB - Advanced approach, the report displays the amount of undrawn commitments and default weighted average EAD.

Example Report

The following tables are examples of the Disclosure of each Portfolio across Probability of Default Grades of Exposure, Default Weighted Average Loss Given Default, and Default Weighted Exposure at Default reports.

Sample Exposure Report: Total Gross Exposure (Internal Ratings Based Approaches)

PD Grades	Asset Class 1	Asset Class 2	Asset Class 3	Asset Class n
PD 1	1	2	3	4
PD 2	1	2	3	4
PD 3	1	2	3	4
PD 4	1	2	3	4
PD 5	1	2	3	4
PD 6	1	2	3	4
PD 7	1	2	3	4
PD n	1	2	3	4

Sample Default Weighted Average Loss Given Default Report: Total Gross Exposure (Loss Given Default Approaches)

PD Grades	Asset Class 1	Asset Class 2	Asset Class 3	Asset Class n
PD 1	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG
PD 2	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG
PD 3	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG
PD 4	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG
PD 5	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG
PD 6	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG
PD 7	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG
PD n	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG	LGD_WGT_AVG

Default Weighted Average Exposure at Default Report: Total Gross Exposure (Exposure at Default Approaches)

PD Grades	Asset Class 1	Asset Class 2	Asset Class 3	Asset Class n
PD 1	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG
PD 2	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG
PD 3	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG
PD 4	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG
PD 5	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG
PD 6	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG
PD 7	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG
PD n	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG	EAD_WGT_AVG

Report Facts

This report is split into three different reports as described in the tables above.

Calculations

Each report follows a different set of calculations.

In each of these calculations, the Asset Class will be represented hierarchically as shown later in this section:

- Non-retail (Corporates, Sovereign, and Bank)
- Retail (Qualifying Revolving Retail, Residential Mortgage, and Other)
- Equities

Report: Exposure Report (by Asset Class and Probability of Default)

This report should sum net exposure from Instrument table, grouped by PD grades and asset class for the given input data set, output data set, risk component data set, ledger, and calendar period.

Since the only relevant asset classes are those generated from the IRB approach so the approach is equals IRB. The externally generated report will only display the aggregate level of non-retail, retail, and equity whereas the internal report will display all levels of the hierarchy.

Default Weighted Average Loss Given Default Report (by Asset Class and Probability of Default)

This report aggregates historical data from different calendar periods from the Defaulted Loan table. The following algorithm describes how the data from defaulted loan is transformed and displayed in this report.

- First, you have to provide the following parameters: input data set, output data set, risk component data set, ledger, and calendar period.

Note: You have to specify the From date and the To date.

- For the selected calendar periods, the average LGD value, grouped by PD grades and asset class, is calculated as follows.

Default Weighted Average Loss Given Default = Sum (Net Economic Loss) divided by Sum (Exposure at Default)

Default Weighted Average Exposure at Default Report (by Asset Class and Probability of Default)

This report aggregates historical data from different calendar periods from the Defaulted Loan table. The following algorithm describes how the data from defaulted loan is transformed and displayed in this report.

- First, you have to provide the following parameters: input data set, output data set, risk component data set, ledger, and calendar period.

Note: You have to specify the From date and the To date.

- For the selected calendar periods, the average EAD value, grouped by PD grades and asset class, is calculated as follows.

Default Weighted Average Exposure at Default = Sum (Actual Exposure at Default) divided by (Total Number of Default)

Note: All estimated and actual currency denominated results will have to be translated to the functional currency of the ledger in Portfolio Loss table. Both Instrument Results table and Defaulted Loan Record table contain a currency column data.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table. The table describes how the dimension is linked to the object detail.

Dimensions

Dimension	Description	Hierarchy
Probability of Default Grade	The internal PD grade assigned to a counterparty (for non-retail) or portfolio (for retail) by the internal rating model.	Probability of Default Grade
Asset Class	This is the classification assigned to the Basel II intermediate asset class.	Corporates, Sovereign, and Banks Equities Residential Mortgages Qualifying Revolving Exposures Other Retail
Calendar Period	The 'as of' reporting date.	Date

Analysis of Estimates Against Actual Outcomes over a Longer Period

Basel Accord Table Reference: CP3/775: Table (6f)

Workbook: Estimates Against Actual Outcomes over a Longer Period.

This regulatory report outlines the actual losses (for example, charge-offs and specific provisions) in the preceding period for each portfolio, and how this differs from past experience. For example, has the bank experienced higher than average default rates, or higher than average loss given default and exposure at default values.

In addition, this regulatory report analyzes the banks' estimates against actual outcomes over a longer period. This report sources the information from the portfolio loss record table.

This report details estimates versus actual values; it outlines actual loss experience versus expected loss experience. Therefore, for a given calendar period, estimates will come from the first day of the period whereas actual results will come from actual loss data assessed at the end of the period.

Example Report

The following table is an example of the Analysis of Estimates Against Actual Outcomes over A Longer Period report.

Sample Report

Portfolio	Actual Loss: T-1	Actual Loss: T-2	Actual Loss: T-3	Estimated Loss: T-1	Estimated Loss: T-2	Estimated Loss: T-3
Exposure Type 1	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 2	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 3	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 4	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 5	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type n	xxx	xxx	xxx	xxx	xxx	xxx
Total	xxx	xxx	xxx	xxx	xxx	xxx

Portfolio	Actual PD: T-1	Actual PD: T-2	Actual PD: T-3	Estimated PD: T-1	Estimated PD: T-2	Estimated PD: T-3
Exposure Type 1	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 2	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 3	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 4	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 5	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type n	xxx	xxx	xxx	xxx	xxx	xxx
Average	xxx	xxx	xxx	xxx	xxx	xxx

Portfolio	Actual LGD: T-1	Actual LGD: T-2	Actual LGD: T-3	Estimated LGD: T-1	Estimated LGD: T-2	Estimated LGD: T-3
Exposure Type 1	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 2	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 3	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 4	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 5	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type n	xxx	xxx	xxx	xxx	xxx	xxx
Average	xxx	xxx	xxx	xxx	xxx	xxx

Portfolio	Actual EAD: T-1	Actual EAD: T-2	Actual EAD: T-3	Estimated EAD: T-1	Estimated EAD: T-2	Estimated EAD: T-3
Exposure Type 1	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 2	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 3	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 4	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type 5	xxx	xxx	xxx	xxx	xxx	xxx
Exposure Type n	xxx	xxx	xxx	xxx	xxx	xxx
Average	xxx	xxx	xxx	xxx	xxx	xxx

Report Facts

The fact data in this report comes from two tables, the Instrument Results and Loan Losses tables, as displayed in the following table. The estimated data will be sourced from the Instrument Results table. The actual loss data will be sourced from the Loan Losses table.

The columns are broken out first by the Fact Name and then by Calendar Period where calendar period equals the users' calendar period in profile minus one year through calendar period minus three years.

Report Facts

Fact	Calendar Period
Actual Loss	xxx
Estimated Loss	xxx
Actual Default Rate	xxx
Estimated Probability of Default, Weighted Average	xxx
Actual Loss Given Default, Weighted Average	xxx
Estimated Loss Given Default	xxx
Actual Exposure at Default	xxx
Estimated Exposure at Default	xxx

Calculations

The calculation for this report is divided into two sections; Estimated Values and Actual Values

Estimated Values

Estimated Loss: It is the product of estimated LGD, Estimated PD, and Estimated EAD values.

Estimated Probability of Default: This will be the weighted average PD value for all of the instruments in the asset class for the given ledger, calendar period, output data set, and data set combination.

Estimated Loss Given Default: This will be the weighted average LGD value for all of the instruments in the asset class for the given ledger, calendar period, output data set, and data set combination.

Estimated Exposure at Default: This will be the sum of EAD value over all of the instruments in the asset class for the given ledger, calendar period, output data set, and data set combination.

Actual Values

The actual loss will be the net economic loss over all of the loan loss entries for the calendar period.

The actual default rate will be the weighted average default rate where the weight of each default is the actual exposure value over the total outstanding exposures for the period.

Actual Loss Given Default: This will be the net economic loss divided by the EAD actual over all of the loan loss entries for the calendar period.

Actual Exposure at Default: This value will be the actual balance outstanding for the bank at the end of the calendar period.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Asset Class	This is the classification assigned to the Basel 2 intermediate asset class.	Internal Ratings Based Approach: <ul style="list-style-type: none">• Non-Retail (Corporates, Sovereign, and Bank)• Retail (Qualifying Revolving Exposures, Residential Mortgage, and Other)• Equity
Calendar Period	The 'as of' reporting date.	Time <ul style="list-style-type: none">• Preceding period (year, month, or week)• One period ago.• Two periods ago.• Three periods ago.• Four periods ago.

Analysis of Publicly Traded and Privately Traded Equity Investments by Carrying Value, Fair Value, and Market Value

Basel Accord Table Reference: CP3/775: Table (7b).

Workbook: Publicly Traded and Privately Traded Equity Investments.

This statutory report captures the value disclosed in the balance sheet of investments, as well as the fair value of those investments; for quoted securities, a comparison to publicly quoted share values where the share price is materially different from fair value.

Example Report

The following table is an example of the Analysis of Publicly Traded and Privately Traded Equity Investments by Carrying Value, Fair Value, and Market Value report.

Sample Report

Equity Investments	Carrying Value of Investments	Fair Value of Investments	Market Value of Quoted Securities
All Equities	\$xxx	\$xxx	N/A
Public - Liquid	\$xxx	\$xxx	\$xxx
Public - ILLiquid			
Private - Liquid	\$xxx	\$xxx	\$xxx
Private - ILLiquid			

Report Facts

The fact data in this report comes from the Instrument Results and Investment Instruments tables, as displayed in the following table.

Report Facts

Fact	Table	Column
Carrying Value Investments	Instrument Results	Net Exposure
Fair Value Investments	Investment Instruments	Fair Value
Market Value	Investment Instruments	Fair Value

Additional Conditions

Asset Class: It could be equity basic or zero-capital charge equity.

Investments Equity Type = false

Calculations

This report calculates the total nominal credit exposure by dimension, as displayed in the following table.

Public = *Public Liquid* and *Public ILLiquid*

Private = *Public Liquid* and *Public ILLiquid*

Calculations

Fact	Calculation
Carrying Value Investments	Carrying value of investments of all Equities equals sum of net exposure when asset class is equity. Carrying value of investments of Publicly quoted equities equals sum of net exposure when asset class is equity and equity type is public.
Fair Value Investments	Fair Value of Investments for all equities equals sum of fair value when asset class is equity. Fair Value of Investments of Publicly quoted equities equals sum of fair value when asset class is equity and equity type is public.
Market Value	Total mark to market value of quoted equity exposures by dimension where equity type is Public

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Equity Type	Equity type.	Public & Private
Asset Class	This is the classification assigned to the Basel 2 intermediate asset class.	Equities
Calendar Period	The 'as of' reporting date.	Date

Analysis of Gains and Losses from Sales and Liquidations in Other Reporting Periods, and Realized Gains and Losses in Tier 1 and Tier 2 Capital

Basel Accord Table Reference: CP3/775: Table (7d) & (7e).

Workbook: Realized and Unrealized Gains and Losses in Tier 1 and 2 Capital.

This statutory report outlines, for equity investments sold within the reporting period, the cumulative realized gains (losses) arising from sales and liquidations. It also displays the total unrealized or latent revaluation gains (losses) and any amounts included in Tier 1, or Tier 2, or both tier's capital.

Example Report

The following table is an example of the Analysis of Gains and Losses from Sales and Liquidations in Other Reporting Periods, and Realized Gains and Losses in Tier 1 and Tier 2 Capital report.

Sample Report

Gains/Losses	Amount (millions)
Unrealized gains/losses	\$xxx
Revaluations gains/losses	\$xxx
Tier 1 capital	\$xxx
Tier 2 capital	\$xxx
Tier 1, or Tier 2, or both tier's capital	\$xxx

Report Facts

All the fact data in this report comes from the Ledger table, as displayed in the following list.

- Equity Investment Gains (Losses)
- Unrealized Equity Investment Gains (Losses)
- Latent Revaluation Gains (Losses): Tier 1
- Latent Revaluation Gains (Losses): Tier 2

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

<i>Dimensions</i>		
Dimension	Description	Hierarchy
Asset Class	Asset Class	Equity
Calendar Period	The 'as of' reporting date.	Date

Analysis of Equity Exposures for Banks Broken Down by Groupings, Provisions, Supervisory Transactions, and Grandfathering

Basel Accord Table Reference: CP3/775: Table (7f).

Workbook: Equity Exposures for Banks.

This statutory report outlines the capital requirements broken down by appropriate equity groupings, consistent with the bank's methodology, as well as the aggregate amounts and the type of equity investments subject to any supervisory transition or grandfathering provisions regarding regulatory capital requirements. This report is composed of multiple subsections, which are differently structured.

Example Report

The following tables are examples of the Analysis of Equity Exposures for Banks broken down by Groupings, Provisions, Supervisory Transactions, and Grandfathering report.

<i>Sample Report</i>	
PD Grade on Reporting Date	Net Equity Exposure (millions)
PD Grade 1	\$xxx
PD Grade 2	\$xxx
PD Grade 3	\$xxx
PD Grade 4	\$xxx
PD Grade 5	\$xxx
PD Grade 6	\$xxx
PD Grade n	\$xxx

Equity Approach	Net Exposure (millions)
Simple Risk Weight	\$xxx
Internal Models Method	\$xxx
PD or LGD Approach	\$xxx

Geography	Net Equity Exposure (millions)
UK	\$xxx
France	\$xxx
Germany	\$xxx
USA	\$xxx

Industry	Net Equity Exposure (millions)
Financials	\$xxx
Utilities	\$xxx
Technology	\$xxx
Industrials	\$xxx

Investments Subject to Supervisory Transition	Total Carrying Value of Exposures (millions)
Investment 1	\$xxx
Investment 2	\$xxx
Total	\$xxx

Investments Subject to Grandfathering Provisions	Total Carrying Value of Exposures (millions)
Investment 3	\$xxx
Investment 4	\$xxx
Total	\$xxx

Report Facts

All the fact data in this report comes from the Instrument Results and Investment Instruments tables, as displayed in the following table.

Report Facts

Fact	Table	Column
Net Exposure (1)	Instrument Results Investment Instruments	Net Exposure
Net Exposure (2)	Instrument Results Investment Instruments	Net Exposure
Net Exposure (3)	Instrument Results Investment Instruments	Net Exposure
Net Exposure (4)	Instrument Results Investment Instruments	Net Exposure
Supervisory	Investment Instruments	Supervisory Shares
Grandfathering	Investment Instruments	Grandfathering Shares

Additional Conditions

Asset Class: It could be equity basic or zero-capital charge equity

Investment Held For Sale = false

Calculations

The following table describes the details of these calculations.

Calculations

Fact	Calculation
Net Exposure (1)	Total net exposure by PD grade dimension when asset class equals equity and held for sale code is false.
Net Exposure (2)	Total net exposure by equity type when asset class is equity and held for sale code is false.
Net Exposure (3)	Total net exposure by geographic location when asset class equals equity and held for sale code is false.
Net Exposure (4)	Total net exposure by SIC_CD dimension when asset class equals equity and held for sale code equals false, then sum of net exposure by SIC_CD.
Supervisory (5)	Total absolute value of a long position in equities by investment dimension when asset class is equity, held for sale code is false and the value of the supervisory flag is supervisory.
Grandfathering (6)	Total absolute value of a long position in equities by investment dimension when asset class is equity, held for sale code is false and the value of the supervisory flag is grandfathering.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Asset Class	Asset Class classification.	
Equity Approach	This is the methodology applied in order to calculate credit risk regulatory capital.	Simple Risk Weight Internal Model Probability of Default / Loss Given Default
PD_Grade	The internal PD grade assigned to a counterparty.	Probability of Default grade number.
Geography	Used to group exposures in different geographical regions into higher level categories.	Region (Europe) Country (France)
Industry	Used to group exposures in different industry regions (by SIC Code) into higher level categories.	<ul style="list-style-type: none">• Mining<ul style="list-style-type: none">CoalMetalOilGas• Construction<ul style="list-style-type: none">Heavy ConstructionSpecial Trade• Manufacturing
Investment Type	Investments	ABC Counterparty Level
Grandfathering and Supervisory Flag	Used as a flag to differentiate between Grandfathering and Supervisory.	Grandfathering Supervisory
Calendar Period	The 'as of' reporting date.	Date

Total Gross Credit Exposures, Which are Covered by On-balance Sheet Netting, Collateral, Guarantees, and Credit Derivatives

Basel Accord Table Reference: CP3/775: Table (8b) & (8c).

Workbook: Total Gross Credit Exposures.

This regulatory report provides an analysis of credit risk mitigation covering exposures.

Example Report

The following table is an example of the Total Gross Credit Exposures which are covered by On-balance Sheet Netting, Collateral, Guarantees, and Credit Derivatives report.

Sample Report

Total Gross Credit Exposures	Total Exposure (millions)
Before Risk Mitigation	\$xxx
Exposures covered by On-balance Sheet Netting	\$xxx
Exposures covered by Collateral	\$xxx
Exposures covered by Guarantees	\$xxx
Exposures covered by Credit Derivatives	\$xxx

Report Facts

All the fact data in this report comes from the Instrument Results and Calculated Collateral Values tables, as displayed in the following table.

Report Facts

Fact	Table	Column
Net Exposure	Instrument Results	Net Exposure
Mitigant Value Currency Adjusted	Calculated Collateral Values	Mitigant value converted to the currency of the exposure

Calculations

The following table describes the details of these calculations. The total exposure covered by mitigant type equals the sum of the mitigant value converted to the currency of the exposure by mitigant type.

Calculations

Fact	Calculation
Net Exposure	Total exposure before credit risk mitigation equals the sum of net exposure.
Mitigant Value Currency Adjusted	Total exposure covered by mitigant type is the sum of mitigant value currency adjusted by mitigant type.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Mitigation Type	Type of Mitigant.	On-balance Sheet Netting Collateral Guarantees Credit derivatives
Calendar Period	The 'as of' reporting date.	Date

Disclosure of the Operational Risk Charge Before and After any Reduction in Capital from Insurance (Advanced Measurement Approach Only)

Basel Accord Table Reference: CP3/775: Table (12c).

Workbook: Operational Risk Charge Before and After Insurance in the Advanced Measurement Approach.

This regulatory report details for those banks using the advanced measurement approach for operational risk, the operational risk charge before and after any reduction in capital resulting from the use of insurance.

Example Report

The following table is an example of the Disclosure of the Operational Risk Charge Before and After any Reduction in Capital from Insurance (Advanced Measurement Approach only) report.

Sample Report

Operational Risk Capital Charge	Advanced Measurement Approach Capital Charge (millions)
Operational Risk Capital Charge Before Insurance	\$xxx
Operational Risk Capital Charge After Insurance	\$xxx

Report Facts

All the fact data in this report comes from the Ledger table, as displayed in the following table.

Report Facts

Fact	Table	Column
Advanced Measurement Approach - Operational Required Capital Risk (1)	Ledger	Operational Risk Methodology
Advanced Measurement Approach - Operational Risk Required Capital less Insurance (2)	Ledger	Operational Risk Methodology Required Capital Insurance

Additional Conditions

Item Class representing Operational Risk Methodology Code = 4

Financial Element = 3201 and 3301

Calculations

This report calculates the total operational risk capital charge with or without insurance, as displayed in the following table.

Calculations

Fact	Calculation
Operational Required Capital Risk (1)	Total operational risk capital charge without insurance by dimension. Financial element (3201)
Operational Risk Required Capital less Insurance (2)	Total operational risk capital charge with insurance by dimension. Financial element (3301)

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Operational Risk Insurance	This is used to determine whether insurance has been taken out for the operational risk exposure.	Yes No
Calendar Period	The 'as of' reporting date.	Date

Analysis of Net Income or Market Value for Upward and Downward Rate Shocks

Basel Accord Table Reference: CP3/775: Table (13b).

Workbook: Net Income or Market Value by Rate Shocks.

This regulatory report analyzes the increase (decline) in net income or market value (or relevant measure used by management) for upward and downward rate shocks according to management's method for using IRRBB, broken down by currency.

Example Report

The following table is an example of the Analysis of Net Income or Market Value for Upward and Downward Rate Shocks report.

Sample Report: Summary of Banking MR table and the impact of upward and downward rate shocks

Currency	Earnings	Earning: Impact Rate Shock: Upward	Earning: Impact Rate Shock: Downward	Economic Value	Economic Value: Impact Rate Shock: Upward	Economic Value: Impact Rate Shock: Downward
Currency 1	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx
Currency 2	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx
Currency 3	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx
Currency 4	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx
Currency 5	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx

Report Facts

All the fact data in this report comes from the Banking table, as displayed in the following table.

Report Facts

Fact	Table	Column
Earnings	Banking - Market Risk	Net Income
Earnings: Impact Rate Shock Upward	Banking - Market Risk	Net Income Sensitivity Upward
Earnings: Impact Rate Shock Downward	Banking - Market Risk	Net Income Sensitivity Downward
Economic Value	Banking - Market Risk	Market Value
Economic Value: Impact Rate Shock Upward	Banking - Market Risk	Market Value Upward
Economic Value: Impact Rate Shock Downward	Banking - Market Risk	Market Value Downward

Calculations

This report calculates the earnings, as displayed in the following table.

Calculations

Fact	Calculation
Earnings	Total net income when sensitivity is defined by dimension. For example (200) bp - sensitivity upward.
Earnings: Impact Rate Shock Upward	Total net income when sensitivity is defined by dimension. For example (200) bp - sensitivity downward.
Earnings: Impact Rate Shock Downward	Total net income when sensitivity is defined by dimension. For example (200) bp - sensitivity downward.
Economic Value	Total market value when rates are shocked by currency.
Economic Value: Impact Rate Shock Upward	Total market value when sensitivity is defined by dimension. For example (200) bp - sensitivity upward.
Economic Value: Impact Rate Shock Downward	Total market value when sensitivity is defined by dimension. For example (200) bp - sensitivity downward.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Currency	Used to group Net Income and Market Value by ISO currency codes.	GBP USD EUR
Sensitivity Value	Used to group Net Income and Market Value by different rate shocks specified by the organization.	10 bp parallel increase 20 bp parallel increase
Calendar Period	The 'as of' reporting date.	Date

Disclosure of the Capital Requirements for Interest Rate Risk, Equity Position Risk, Foreign Exchange Risk, and Commodity Risk

Basel Accord Table Reference: CP3/775: Table (10b).

Workbook: Capital Requirements by Portfolio Type.

The report discloses the capital requirements under market risk for interest rate risk, equity position risk, foreign exchange risk and commodity risk.

Example Report

The following table is an example of the Disclosure of the Capital Requirements for Interest Rate Risk, Equity Position Risk, Foreign Exchange Risk, and Commodity Risk report.

Sample Report

Type of Risk	Capital Requirement
Interest Rate	\$xxx
Equity Position	\$xxx
Foreign Exchange	\$xxx
Commodity	\$xxx

Report Facts

All the fact data in this report comes from the Value-at-Risk Results table, as displayed in the following table.

Report Facts

Fact	Table	Column
Credit Risk Required Capital by Portfolio Type	Value-at-Risk Results	Capital Requirement for Market Risk Portfolio Type

Calculations

The following table describes the details of these calculations.

Calculations

Fact	Calculation
Credit Risk Required Capital by Portfolio Type	Market risk required capital by dimension equals the sum of capital requirement for market risk by portfolio type.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Market Risk Portfolio Type	Identifier of the type of market risk.	Interest Rate Equity Position Foreign Exchange Commodity
Calendar Period	The 'as of' reporting date.	Date

Disclosure for Each Internal Model Approach Portfolio of Aggregated, High, Mean, and Low Value-at-Risk Values and Comparison with Actual Outcomes

Basel Accord Table Reference: CP3/775: Table (11d)

Workbook: Value-at-Risk Compared With Actual Outcomes.

The report discloses the capital requirements under market risk for interest rate risk, equity position risk, foreign exchange risk, and commodity risk. This table will disclose only the internal model approach portfolio, so it does not include other market risk methodologies.

Example Report

The following table is an example of the Disclosure for Each Internal Model Approach Portfolio of Aggregated, High, Mean, and Low Value-at-Risk Values and Comparison with Actual Outcomes report.

Sample Report

Value-at-Risk Statistical Value	Value-at-Risk Amount	Actual Loss
Aggregate VaR	1	2
High VaR	1	2
Mean VaR	1	2
Low VaR	1	2
Period End VaR	1	2

Report Facts

All the fact data in this report comes from the Value-at-Risk Results table, as displayed in the following table.

Report Facts

Fact	Table	Column
Value-at-Risk Amount	Value-at-Risk Results	Value-at-Risk Amount Market Risk Methodology Portfolio Type
Actual Loss	Value-at-Risk Results	Actual loss or amount for over the period described by the Value-at-Risk table

Calculations

The following table describes the details of these calculations.

Calculations

Fact	Calculation
Value-at-Risk Amount	VaR estimate for the internal model approach by VaR statistical value equals the sum of VaR amount by portfolio type.
Actual Loss	Actual Loss by Dimension equals the sum of the Actual Loss by Portfolio Type.

Dimensions and Hierarchies

The report uses the dimensions listed in the following table.

Dimensions

Dimension	Description	Hierarchy
Value-at-Risk Statistical Value	Statistical value taken from the Value-at-Risk distribution curve.	Aggregate Value-at-Risk Results High Value-at-Risk Results Mean Value-at-Risk Results Low Value-at-Risk Results Period End Value-at-Risk Results
Calendar Period	The 'as of' reporting date.	Date

Business Line Data

This appendix gives you information about the business line alpha and beta factors.

This appendix covers the following topics:

- Overview of Business Line Data
- Business Line Alpha and Beta Factors
- Operational Risk Data

Overview of Business Line Data

This appendix outlines the business line data such as the business line alpha and beta factors and operational risk data.

Related Topics

Business Line Alpha and Beta Factors, page A-1.

Operational Risk Data, page A-2.

Business Line Alpha and Beta Factors

In the standardized approach, the capital required for operational risk is calculated by multiplying the business line average gross income over the previous three fiscal years by a beta factor. Beta serves as a proxy for the industry-wide relationship between the operational risk loss experience for a given business line and the aggregate level of gross income for that business line.

The following table lists the beta and alpha factor for each business line.

Business Line Beta Factors

Business Line (Level 1)	Beta Factor	Alpha Factor
Corporates finance	18%	15%
Trading and sales	18%	15%
Retail banking	12%	15%
Commercial banking	15%	15%
Payment and settlement	18%	15%
Agency services	15%	15%
Asset management	12%	15%
Retail brokerage	12%	15%

Operational Risk Data

The following table lists the Operational Risk Data.

Operational Risk Data

Proposed Financial Element	Description	Source
3000	Gross Income	FEM Table
3001	Outstanding Retail Loans and Advances	FEM Table
3202	Required Capital - Operational Risk	FEM Table
3101	Risk Weighted Assets - Operational Risk	New

Seeded Lookup Tables

This appendix gives you information about different seeded lookup tables.

This appendix covers the following topics:

- Overview of Seeded Lookup Tables
- Credit Rating Tables
- Credit Conversion Factors
- Haircuts
- Minimum Holding Period
- Multiplier Table
- Collateral Type Table
- Equity Risk Weights
- Provision Ratio
- Current Exposure Method
- Slotting Criteria Approach
- Slotting Criteria Approach Adjusted
- Internal Ratings Based Collateral Table

Overview of Seeded Lookup Tables

This appendix describes the different seeded lookup tables.

Related Topics

Credit Rating Tables, page B-2.

Credit Conversion Factors, page B-12.

Haircuts, page B-13.

Minimum Holding Period, page B-15.

Multiplier Table, page B-15.

Collateral Type Table, page B-16.

Equity Risk Weights, page B-16.

Provision Ratio, page B-16.

Current Exposure Method, page B-16.

Slotting Criteria Approach, page B-17.

Slotting Criteria Approach Adjusted, page B-17.

Internal Ratings Based Collateral Table, page B-17.

Credit Rating Tables

These credit rating tables are populated with default values and are seeded as lookup tables.

The following table lists the risk weight for each rating of Moody.

Moody's

Moody's Rating	Risk Weight
Aaa	0%
Aa1	0%
Aa2	0%
Aa3	0%
A1	20%
A2	20%
A3	20%
Baa1	50%
Baa2	50%
Baa3	50%
Ba1	100%
Ba2	100%
Ba3	100%
B1	100%
B2	100%
B3	100%
Caa1	150%
Caa2	150%
Caa3	150%
Ca	150%
C	150%
Unrated	100%

The following table lists the risk weight for each rating of Fitch and S & P. These are the first set of options for bank asset class.

Bank Option 1

Fitch's Rating	S & P's Rating	Risk Weight
AAA	AAA	20%
AA+	AA+	20%
AA	AA	20%
AA-	AA-	20%
A+	A+	50%
A	A	50%
A-	A-	50%
BBB+	BBB+	100%
BBB	BBB	100%
BBB-	BBB-	100%
BB+	BB+	100%
BB	BB	100%
BB-	BB-	100%
B+	B+	100%
B	B	100%
B-	B-	100%
CCC+	CCC+	150%
CCC	CCC	150%
CCC-	CCC-	150%
CC	CC	150%
C	C	150%
D	D	150%
Unrated	Unrated	100%

The following table lists the risk weight for each rating of Moody.

Moody's Rating	Risk Weight
Aaa	20%
Aa1	20%
Aa2	20%
Aa3	20%
A1	50%
A2	50%
A3	50%
Baa1	100%
Baa2	100%
Baa3	100%
Ba1	100%
Ba2	100%
Ba3	100%
B1	100%
B2	100%
B3	100%
Caa1	150%
Caa2	150%
Caa3	150%
Ca	150%
C	150%
Unrated	100%

The following table lists the risk weight for each rating of Fitch and S & P given for banks without preferential treatment. These are the second set of options for bank asset class.

Bank Option 2 (No Preferential Treatment)

Fitch's Rating	S & P's Rating	Risk Weight
AAA	AAA	20%
AA+	AA+	20%
AA	AA	20%
AA-	AA-	20%
A+	A+	50%
A	A	50%
A-	A-	50%
BBB+	BBB+	50%
BBB	BBB	50%
BBB-	BBB-	50%
BB+	BB+	100%
BB	BB	100%
BB-	BB-	100%
B+	B+	100%
B	B	100%
B-	B-	100%
CCC+	CCC+	150%
CCC	CCC	150%
CCC-	CCC-	150%
CC	CC	150%
C	C	150%
D	D	150%
Unrated	Unrated	50%

The following table lists the risk weight for each rating of Moody.

Moody's Rating	Risk Weight
Aaa	20%
Aa1	20%
Aa2	20%
Aa3	20%
A1	50%
A2	50%
A3	50%
Baa1	50%
Baa2	50%
Baa3	50%
Ba1	100%
Ba2	100%
Ba3	100%
B1	100%
B2	100%
B3	100%
Caa1	150%
Caa2	150%
Caa3	150%
Ca	150%
C	150%
Unrated	50%

The following table lists the risk weight maturity for periods lesser than and greater than three months for each rating of Fitch and S & P given for banks with short term preferential treatment. These are the third set of options for bank asset class.

Bank Option 3 (Short Term Preferential Treatment)

Fitch's Rating	S & P's Rating	Risk Weight Maturity > 3 Months	Risk Weight Maturity < 3 months
AAA	AAA	20%	20%
AA+	AA+	20%	20%
AA	AA	20%	20%
AA-	AA-	20%	20%
A+	A+	50%	20%
A	A	50%	20%
A-	A-	50%	20%
BBB+	BBB+	50%	20%
BBB	BBB	50%	20%
BBB-	BBB-	50%	20%
BB+	BB+	100%	50%
BB	BB	100%	50%
BB-	BB-	100%	50%
B+	B+	100%	50%
B	B	100%	50%
B-	B-	100%	50%
CCC+	CCC+	150%	150%
CCC	CCC	150%	150%
CCC-	CCC-	150%	150%
CC	CC	150%	150%
C	C	150%	150%
D	D	150%	150%
Unrated	Unrated	50%	20%

The following table lists the risk weight maturity for periods lesser than or greater than three months for each rating of Moody.

Moody's Rating	Risk Weight Maturity > 3 months	Risk Weight Maturity < 3 Months
Aaa	20%	20%
Aa1	20%	20%
Aa2	20%	20%
Aa3	20%	20%
A1	50%	20%
A2	50%	20%
A3	50%	20%
Baa1	50%	20%
Baa2	50%	20%
Baa3	50%	20%
Ba1	100%	50%
Ba2	100%	50%
Ba3	100%	50%
B1	100%	50%
B2	100%	50%
B3	100%	50%
Caa1	150%	150%
Caa2	150%	150%
Caa3	150%	150%
Ca	150%	150%
C	150%	150%
Unrated	50%	20%

The following table lists the risk weight for each rating of Fitch and S & P given for corporates asset class.

Corporates

Fitch's Rating	S & P's Rating	Risk Weight
AAA	AAA	20%
AA+	AA+	20%
AA	AA	20%
AA-	AA-	20%
A+	A+	50%
A	A	50%
A-	A-	50%
BBB+	BBB+	100%
BBB	BBB	100%
BBB-	BBB-	100%
BB+	BB+	100%
BB	BB	100%
BB-	BB-	100%
B+	B+	150%
B	B	150%
B-	B-	150%
CCC+	CCC+	150%
CCC	CCC	150%
CCC-	CCC-	150%
CC	CC	150%
C	C	150%
D	D	150%
Unrated	Unrated	100%

The following table lists the risk weight for each rating of Moody's.

Moody's Rating	Risk Weight
Aaa	20%
Aa1	20%
Aa2	20%
Aa3	20%
A1	50%
A2	50%
A3	50%
Baa1	100%
Baa2	100%
Baa3	100%
Ba1	100%
Ba2	100%
Ba3	100%
B1	150%
B2	150%
B3	150%
Caa1	150%
Caa2	150%
Caa3	150%
Ca	150%
C	150%
Unrated	100%

The following table lists the risk weight for specific short term periods for each rating of Fitch and S & P.

Specific Short Term

Fitch's Rating	S & P's Rating	Risk Weight
F-1	A-1	20%
F-2	A-2	50%
F-3	A-3	100%
B	B	150%
C	C	150%
D	D	150%

The following table lists the risk weight for each rating of Moody's.

Moody's Rating	Risk Weight
P-1	20%
P-2	50%
P-3	100%
Not Prime	150%

The following table lists the equity risk weights against different methodologies.

Equity Risk Weight

Methodology Selected	Public Liquid	Private Liquid	Public & Private Liquid
Simple	300%	400%	N/A
IMM	200%	300%	N/A
PD or LGD	200%	300%	100%

Credit Conversion Factors

The credit conversion factors are listed separately as standardized approach and internal ratings based approach.

Standardized Approach

The following table lists the credit conversion factors for the maturity periods lesser than and greater than one year for the standardized approach.

Credit Conversion Factors: Standardized Approach

Off-balance Sheet Type	Maturity<= 1 year	Maturity > 1 year
Unconditionally Cancelable	0%	0%
Repo-style Transaction	100%	100%
Short Term Self Liquid LC	20%	20%
Direct Credit Substitutes	100%	100%
Transaction Related Contingent Items	50%	50%
Forward Purchase Assets or Forward Deposits	100%	100%
All Others	20%	50%

Internal Ratings Based Approach

The following table lists the credit conversion factors for the maturity periods lesser than and greater than one year for the IRB approach.

Credit Conversion Factors: IRB Approach

Off-balance Sheet Type	Maturity<= 1 year	Maturity > 1 year
Repo-style Transaction	100%	100%
Short Term Self Liquid LC	20%	20%
RUFF & Note Issuance Facility	75%	75%
Revolving Purchase Receivable	75%	75%
Direct Credit Substitute	100%	100%
Transaction Related Contingent Items	50%	50%
Forward Purchase Assets or Forward Deposits	100%	100%
All Others	20%	50%

Haircuts**Foreign Exchange Haircuts: Supervisory**

The following table lists the supervisory haircuts seeded values for different securities against their credit ratings.

Foreign Exchange Haircuts: Supervisory

Security Type	Credit Rating	Remaining Term	Sovereign	Not Sovereign
Debt Securities	AAA to AA- / A-1	<=1 year	.005	.001
Debt Securities	AAA to AA- / A-1	<=1, <=5 years	.02	.04
Debt Securities	AAA to AA- / A-1	> 5 years	.04	.08
Debt Securities	A+ to BBB- / A-2 / A-3 & Unrated	<= 1 year	.01	.02
Debt Securities	A+ to BBB- / A-2 / A-3 & Unrated	> 5 years	.03	.06
Debt Securities	BB+ to BB-	All	.15	N/A
Non Eligible Instruments	N/A	N/A	.25	.25
Main Index and Gold	N/A	N/A	.15	.15
Other Equities Listed on Recognized Exchange These are mapped to types in hierarchy, such as 1c and 1f.	N/A	N/A	.25	.25
UCITS / Mutual Funds	N/A	N/A	*	*
Cash in same currency	N/A	N/A	0	0

* *Highest haircut applicable to any security which the fund can invest.*

Foreign Exchange Haircut: Own Estimate

The following table lists the own estimate haircuts seeded values for different asset currency code against mitigant currency code.

Foreign Exchange Haircuts: Own Estimate

Asset Currency Code	Mitigant Currency Code	Haircut Value
USD	USD	0
Euro	USD	0.03
Pound	USD	0.06
USD	Pound	0.06
USD	Euro	0.03
Pound	Pound	0
Pound	Euro	0.04
Euro	Pound	0.04
Euro	Euro	0

Minimum Holding Period

The following table lists the minimum holding period for each transaction type.

Minimum Holding Period

TRANSACTION TYPE	Minimum Holding Period
All Other	10 business days
Repo-Style Transactions	05 business days
Other Capital Market Transactions	10 business days
Secured Lending	20 business days

Multiplier Table

The following table lists the multiplication factor for each numeric exception range.

Multiplier Table

Number of Exceptions	Factor
0 - 99	1.0
100 - 119	2.0
120 - 139	2.2
140 - 159	2.4
160 - 179	2.6
180 - 199	2.8
200 +	3.0

Collateral Type Table

The following table lists the threshold limit for each mitigant type.

Collateral Type Table

MITIGANT TYPE	Threshold
Financial Collateral (Types 1 - 3)	N/A
Receivables (Type 6)	125%
Commercial / Residential Real Estate (7)	140%
Other Collateral (8)	140%

Equity Risk Weights

The following table lists the risk weights for each equity asset classes.

Equity Risk Weights Table

Asset Class	Risk Weight
Equity	100%
Venture Capital	100%
Private Equity	100%

Provision Ratio

The following table lists the provision ratio values for different percentages.

Provision Ratio Lookup

Provision Ratio	Less than 20%	Greater than or Equal to 20% and Less than 50%	Greater than or Equal to 50%
Risk Weight	150%	100%	100% or 50%

Current Exposure Method

The following table lists the residual maturity values for different interest and exchange rates for the off-balance sheet exposures.

Add on Factors

Residual Maturity	Off-balance Sheet Type	
	Interest Rate Contracts	Exchange Rate Contracts
Less than one year	0.0%	1.0%
One year and over	0.5%	5.0%

Slotting Criteria Approach

The following table lists the slotting criteria for different asset classes.

Slotting Criteria Approach Unexpected Loss

Asset Class	Strong	Good	Satisfactory	Weak	Default
All Other	70%	90%	115%	250%	0%
HVCRE	95%	120%	140%	250%	0%

Slotting Criteria Approach Adjusted

The following table lists the slotting criteria for adjusted maturity periods for different asset classes.

Slotting Criteria Approach Adjusted Unexpected Loss

Asset Class	Maturity	Strong	Good	Satisfactory	Weak	Default
All Other	Less than 2.5 years	50%	70%	115%	250%	0%
All Other	Greater than or equal to 2.5 years	70%	90%	115%	250%	0%
HVCRE	Less than 2.5 years	70%	95%	140%	250%	0%
HVCRE	Greater than or equal to 2.5 years	95%	120%	140%	250%	0%

Internal Ratings Based Collateral Table

The following table lists the collateral values for different mitigant types.

Internal Ratings Based Collateral

MITIGANT TYPE	Over-Collateralized Loss Given Default
Financial Collateral (Types 1 - 3)	N/A
Receivables (Type 6)	35%
Commercial / Residential Real Estate (7)	35%
Other Collateral (Type 8)	40%

Basel II Reports

This appendix gives you information about the various Basel II reports.

This appendix covers the following topics:

- List of Reports

List of Reports

The Accord breaks down Pillar III external disclosure reports by key sections, namely capital, credit risk, equities, credit risk mitigation, operational risk, market risk, including interest rate risk in the banking book, and trading book risk. The reports have been designed based on Basel II. The following table describes each of the reports with their Pillar III reference number.

See: Overview of Regulatory Capital Manager Reports, page 9-2 for more information on Regulatory Capital Manager seeded reports.

Basel II Reports

Reporting Area	Report Name	Accord Table Reference Number
Capital	Analysis of Total Credit Risk Required Capital by Portfolio Risk Weighted under Different Methodologies	3(b)
	Disclosure of Capital Requirements for Equity Risk using Internal Ratings Based Approach	3(c)
	Disclosure of Capital Requirements for Market Risk	3(d)
	Disclosure of Capital Requirements for Operational Risk	3(e)
Credit Risk	Total Credit Exposure and Average Gross Credit Risk Exposure Broken Down by Product Type	4(b)
	Total Credit Exposure Broken Down by Geography and Product Type	4(c)
	Analysis of Credit Risk Exposure Broken Down by Industry and Product Type	4(d)

Reporting Area	Report Name	Accord Table Reference Number
	Analysis of Credit Risk Exposure Broken Down by Residual Contractual Maturity and Product Type	4(e)
	Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography	4(f)
	Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry	4(g)
	Reconciliation of Changes in the Allowances for Loan Impairment	4(h) and 4(i)
	Analysis of Outstandings for Exposures Subject to Standardized Approach by Risk Bucket Split Between Externally Rated and Not Externally Rated	5(b)
	Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for High Volatility Commercial Real Estate and Specialized Lending Products or Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for Equities	5(b)
	Disclosure of Nominal Exposure and Undrawn Exposure by Credit Risk Methodologies	6(d)
	Disclosure of each Portfolio Across Probability of Default Grades of Exposure, Default Weighted Average Loss Given Default, and Default Weighted Exposure at Default	6(e)
	Analysis of Estimates Against Actual Outcomes over A Longer Period	6(g)
Equities	Analysis of Publicly Traded and Privately Traded Equity Investments by Carrying Value, Fair Value, and Market Value	7(b)
	Analysis of Gains and Losses from Sales and Liquidations in Other Reporting Periods, and Realized Gains and Losses in Tier 1 and Tier 2 Capital	7(d) and 7(e)
	Analysis of Equity Exposures for Banks Broken Down by Groupings, Provisions, Supervisory Transactions, and Grandfathering	7(f)
Credit Risk Mitigation	Total Gross Credit Exposures, Which are Covered by On-balance Sheet Netting, Collateral, Guarantees, and Credit Derivatives	8(b) and 8(c)
Market Risk: Standardized Approach	Disclosure of the Capital Requirements for Interest Rate Risk, Equity Position Risk, Foreign Exchange Risk, and Commodity Risk	10(b)

Reporting Area	Report Name	Accord Table Reference Number
Market Risk: IMA	Disclosure for each Internal Model Approach Portfolio of Aggregated, High, Mean, and Low Value-at-Risk Values and Comparison with Actual Outcomes	11(d)
Operational Risk	Disclosure of the Operational Risk Charge Before and After any Reduction in Capital from Insurance (Advanced Measurement Approach Only)	12(c)
IRRBB	Analysis of Net Income or Market Value for Upward and Downward Rate Shocks	13(b)

Standard Navigation Paths

This appendix gives you information to navigate through the RCM application pages referred to in this guide.

This appendix covers the following topics:

- Standard Navigation Paths

Standard Navigation Paths

Although you may have customized your navigator, typical navigation paths are shown in this table. Access all of these pages through the RCM Superuser or RCM User responsibility.

Page	Navigation Path
Methodology Elections Rules	Business Rule> Calculation> Methodology Elections
Create Methodology Elections Rule: Step 1: Define Rule	Business Rule> Calculation> Methodology Elections> Create Methodology Elections Rule: Step 1: Define Rule
Create Methodology Elections Rule: Step 2: Define Version	Business Rule> Calculation> Methodology Elections> Create Methodology Elections Rule: Step 1: Define Rule> Create Methodology Elections Rule: Step 2: Define Version
Create Credit Risk Attribute Set	Business Rule> Calculation> Methodology Elections> Create Methodology Elections Rule: Step 1: Define Rule> Create Methodology Elections Rule: Step 2: Define Version> Create Credit Risk Attribute Set
Modify Configuration Settings	Business Rule> Calculation> Methodology Elections> Create Methodology Elections Rule: Step 1: Define Rule> Create Methodology Elections Rule: Step 2: Define Version> Configuration Settings
Defining Operational Risk Methodology Settings	Business Rule> Calculation> Methodology Elections> Create Methodology Elections Rule: Step 1: Define Rule> Create Methodology Elections Rule: Step 2: Define Version> Define Operational Risk Methodology
Process Rules	Business Rule> Calculation> Process Rule

Glossary

Alpha

A factor related to the overall banking reference.

Attribute

An attribute is defined as a characteristic or property that further describes an entity.

Attributed Dimension

An attributed dimension is a dimension whose members may have other properties or qualifiers. These properties/qualifiers are known as *Dimension Attributes*. Note that while attributed dimensions may also have hierarchies, they are not required to do so. Certain attributed dimensions like Ledger or Financial Element may not have any hierarchies.

Back Test

The process of testing historical models to ensure they are accurately predicting Probability of Default, Loss Given Default, and Exposure at Default values.

Beta

A factor that is applied to business line based on gross income or outstanding loans to determine the standard approach capital charge for operational risk. Beta is defined based on the business line attribute, but it applies at the organization unit level.

Capital Ratio

The ratio of regulatory capital divided by risk weighted assets.

Capital Requirements

The minimum amount of capital that financial institutions must hold for their given risk profile.

Capital Trigger

A minimum capital requirement, as a percentage of risk weighted assets, that is assigned to banks by their National Supervisors.

Collateral

An asset that is used to secure an exposure in case of default.

Contractual Obligations

A contractual obligation is a legal agreement stipulating a specified payment or action.

Credit Derivative

A credit derivative is a financial instrument used to mitigate or to assume specific forms of credit risk by hedgers and speculators.

Credit Risk

The risk associated with the possibility that a borrower will not meet their contractual obligations within the required time.

Credit Risk Mitigation

One of several techniques such as collaterals, credit derivatives, guarantees, or netting agreements, that the banks use to reduce their credit risk.

Dimension Attribute

An attribute that further describes a dimension member. Dimension attributes are defined by a relationship of an attributed dimension to a dimension that serves as the attribute. For example, *Sales Territory* is an attribute for the *Person* dimension where the list of values for the attribute comes from the *Geography* dimension.

Dimension Identifier

A dimension identifier is a character string, or combination of character strings, that uniquely identifies each member of a dimension. Dimension identifiers are non-translatable, as they are the same regardless as to the language context. Each dimension has its own unique set of columns in the Enterprise Performance Foundation Interface tables that serve as the dimension identifier for that dimension.

Dimension Member

A value used to populate dimension columns in account, transaction, or statistical tables is referred to as *Dimension Member*. This value represent the individual organizations, distribution channels, and products, of which each dimension consists of. Both *lowest level* and *node level* values are considered to be dimension members.

Effective Maturity

This attribute measures the longest possible remaining time before the counterparty is scheduled to fulfill its obligation.

Entered Currency

The actual currency of the transaction recorded in the ledger.

Exposure

The balance of a facility, such as balance loan amount or bond value, that is at risk of credit default is called exposure.

Exposure at Default

This attribute measures the amount of the facility that is likely to be drawn if a default occurs.

Functional Currency

The base currency of the ledger.

Gross Income

The sum of net interest income plus non-interest income is called gross income. This calculation includes the gross income of any provision; for example, unpaid interest, and excludes realized profits or losses from securities sales or on the bank books, irregular items, or income from insurance. Gross income serves as a proxy for the scale of business operations and the level of operational risk.

Guarantee

A guarantee is a collateral agreement to answer for the debt of another in case that party defaults. A guarantee must represent a direct claim on the protection provider and must be explicitly referenced to specific exposures, so that the extent of the cover is clearly defined.

Haircut

A haircut is an adjustment that is made to both exposure and collateral values accounting for the future fluctuations of both values.

Hierarchy Definition

A hierarchy definition is a structure of dimension members organized by parent or child relationships, for a designated effective date range. Hierarchy definition is synonymous with hierarchy version, in that it is one instance of the hierarchy.

Hierarchy Object

A hierarchy object is a collection of hierarchy definitions. The individual hierarchy definitions represent a particular picture of the hierarchy object.

Item

An item is a name for data that is stored in your company's database. In the Workbook Wizard, you select a item to get the data you want; for example, the item *Department* is the name for all the departments at your company. Discoverer uses these items to write a SQL query. When the database returns the data that answers the query, the items you chose appear as row and column headings in a spreadsheet-like format.

Loss Given Default

This attribute measures the proportion of the exposure that will be lost, if a default occurs.

Market Risk

This risk is common to all assets or liabilities. The value of investments may vary over a given time period simply because of economic changes or other events that impact large portions of the market.

Netting Agreement

A legally enforceable agreement that banks may use to net loans and deposits for calculating a net capital requirement.

Operational Risk

The risk of a loss resulting from inadequate or failed internal processes, systems, people or external events.

Original Maturity

This attribute measures the amount of time between a credit facilities issue date and maturity date.

Organizational Unit

An individual or organization, which is legally permitted to enter into a contract and can be sued if it fails to meet its contractual obligations.

Page Items

This special item groups a worksheet's data into separate *pages*. By selecting different page items in the Page Item drop-down list, you are actually switching pages within that worksheet.

Portfolio

A collection of investments owned by the same organization or individual. These investments could include stocks, bonds, mutual funds, treasury related transactions, or other such investments.

Probability of Default

This attribute measures the likelihood that a borrower will default over a give time period.

Queries

A query is a question that Discoverer asks the database in order to get the data you want. Every time you open a worksheet or create a new one, Discoverer sends a query to your company's database. For example, how did Product A sell last month? Queries are written in SQL, a language that databases understand. You do not need to understand SQL to communicate with the database. Discoverer writes the SQL query for you.

Remaining Maturity

This attribute measures the remaining economic maturity of the exposure.

Risk Weight

The risk value which is derived from lookup tables under the standardized approach, that is used to calculate risk weighted assets.

Risk Weighted Assets

The exposure value of an asset adjusted for its particular risk profile.

Simple Dimension

A simple dimension is a dimension that serves only as a list of values. Simple dimensions do not have attributes, nor do they have hierarchies. Simple dimensions may serve as attributes of other dimensions.

Stress Testing

To determine the soundness of their internal models, banks use a form of scenario analysis called stress testing. For example, a company may calculate risk weighted assets based on negative economic projections by assuming a scenario of two consecutive years of zero growth.

Workbooks

A workbook is a collection of worksheets. A workbook contains data that is related in some way but organized to show different perspectives. For example, you may decide to create a workbook to show the sales history for product A. However, one worksheet could show sales for last month, another worksheet could show sales compared to the same month five years ago, and another could show sales per region. All three worksheets contain sales data related to product A, but each is organized to show a different perspective.

Worksheets

A worksheet contains the data you want and allows you to analyze and share it. Each worksheet is created by its own query. Every time you open or refresh a worksheet, Discoverer sends its query to the database to get the most current data.

Index

A

adjusted mitigant value, 3-3
adjustments
 firm size, 7-10
 haircuts, 2-7, 2-16
 holding period, 2-9, 2-16
 maturity, 7-10
 maturity mismatch, 2-7
 remargining/revaluation, 2-9, 2-16
 zero haircut, 2-9
amount
 notional principal, 2-5
approach
 advanced measurement, 4-3, 7-12
 alternative standardized, 4-3, 7-11
 basic, 7-12
 basic indicator, 4-2
 comprehensive, 2-7
 internal ratings based, 2-14, 3-1, 9-6, 9-13
 advanced, 3-2, 3-11
 foundation, 3-2
 loss given default
 advanced, 3-5
 foundation, 3-3
 own estimate, 2-16
 simple, 2-7, 7-8
 standardized, 2-1, 2-4, 2-12, 3-1, 4-2, 7-8, 7-12, 9-6, 9-13
 supervisory, 2-16, 3-5
asset classes
 commercial real estate, 7-5
 equity, 3-1, 3-10, 7-6
 multilateral developmental banks, 7-5
 non-retail
 bank, 3-1
 banks, 3-3, 7-5
 corporates, 3-1, 3-3, 7-5
 sovereign, 3-1, 3-3, 7-5
 past due loans, 7-5
 public sector entities, 7-5
 regulatory retail portfolio, 7-5
 residential property, 7-5
retail
 all other, 3-1, 3-9, 7-6
 qualifying revolving exposures, 3-1, 3-9, 7-6
 residential mortgage, 3-1, 3-9

 residential mortgages, 7-6
 securities firms, 7-5
assets
 defaulted, 3-10
 remaining maturity, 2-8
 risk weighted, 2-1, 3-1, 3-12, 4-1

B

Bank of International Settlements, 1-1, 4-1
Basel Accord, 1-1
 pillar one, 1-1
 pillar three, 1-1
 pillar two, 1-1
Basel Committee on Banking Supervision
International Convergence of Capital
Measurement and Capital Standards, 1-1
business rule
 calculation
 methodology elections, 1-4
 process rule, 1-4
 condition, 1-4
 data inspector, 1-4
 dimension, 1-4

C

calculation
 net exposures, 2-5
capital charge
 market risk, 4-5
 operational risk, 4-1
capital requirements, 2-1
collateral
 eligibility, 2-8
 eligible financial, 2-6
 eligible internal ratings based, 3-3
 financial, 3-3
 rank, 3-3
 remaining maturity, 2-8
commitments
 off-balance sheet, 2-5
 undrawn, 2-5
conditions, 9-3
correlation equation
 high volatility commercial real estate, 7-10

- non-high volatility commercial real estate, 7-10
- correlation equation coefficient
 - all other, 7-10
 - qualifying revolving exposures, 7-10
 - residential mortgage, 7-10
- cost
 - replacement, 2-5
- credit conversion factors, 2-5
- credit derivatives, 2-11, 3-8
- credit lines
 - undrawn, 2-5
- credit mitigation
 - collateral, 2-6
 - currency conversion, 2-6
- credit risk
 - mitigation techniques
 - applying, 2-6

D

- data model
 - enterprise financial management, 3-7
 - enterprise performance foundation, 2-3
- data set groups, 1-4
- data sets
 - nonproduction, 6-1
 - production, 6-1
- date
 - historical default, 3-11
- defining
 - asset classes, 7-4
 - credit risk methodology, 7-4
 - organizational units, 7-7
- definition
 - credit risk attribute set
 - creating, 7-4, 7-7
- derivatives
 - OTC
 - See* derivatives
 - over the counter, 2-5, 7-8

E

- eligibility
 - deposit, 2-10
- Enterprise Performance Foundation
 - data repository, 1-6
- Enterprise Risk Platform, 1-7
- exchange rate, 2-6
- executing
 - process rule, 8-4
- exposure
 - senior, 7-9
 - subordinate, 7-9
- exposures
 - credit equivalent, 2-5
 - net, 2-4
 - calculating, 2-16

- net , 2-5
- on-balance sheet, 2-4
- specialized lending, 3-7
- unrated, 2-4

F

- factor
 - add-on, 2-5
 - beta, 4-2
 - loans outstanding percent, 7-11
 - mitigant value discount, 7-8
- factoring, 3-6
- financial ledger, 3-12

G

- guarantees, 2-11, 3-8

H

- haircuts, 7-11
 - collateral, 2-8
 - exposure, 2-8
 - foreign exchange, 2-9
 - supervisory foreign exchange, 7-11
- hierarchy grid, 8-1
- holding period
 - actual, 2-9, 2-16
 - minimum, 2-9, 2-16, 7-11

I

- Internal Controls Manager, 4-4

L

- Leases
 - Residual Value Risk, 3-7
- ledger
 - financial, 8-3
- letters of credit, 2-5

M

- market participant
 - core, 7-8
 - non-core, 7-8
- metadata, 1-4
- methodology elections, 2-7
 - user interface, 2-4
- methods
 - internal model alternative, 9-13
 - simple risk weight , 9-13
- migration, 2-15
- minimum capital requirement, 3-11
- mitigant value, 2-6
 - haircut adjusted, 2-9, 2-10
- mutual funds, 2-6

N

- netting
 - on-balance sheet, 2-10
 - repo-style, 2-12
- notes
 - implementation, 9-6
- notifications, 1-3

O

- operational risk methodology settings
 - defining, 7-12
- options
 - audit, 8-6
 - See also* data options
 - calculation, 8-5
 - See also* data options
 - data, 8-4
 - See also* calculations options
- Oracle Approvals Management, 6-1
- Oracle Internal Controls Manager, 1-6
- Oracle Risk Manager, 1-7
- Oracle Warehouse Builder, 1-6
- Oracle Workflow, 1-7, 6-1
- Over-collateralized value, 3-3

P

- pages
 - create credit risk attribute set, 7-4, 7-7
 - methodology elections version, 7-2
 - process, 8-2
 - rule selector, 7-1, 8-1
 - rules selector, 7-3, 8-3
- purchased receivables
 - top down approach, 7-9

R

- regulatory capital, 2-1
- Regulatory Capital Manager, 1-1
 - methodology elections, 7-1, 8-1
 - application components, 1-2
 - calculation engine, 1-2
 - process rule, 7-1, 8-1
 - solution components, 1-6
 - user interface, 1-3
- reports
 - accessing, 9-2
 - Analysis of Credit Risk Exposure Broken Down by Industry and Product Type, 9-19
 - Analysis of Credit Risk Exposure Broken Down by Residual Contractual Maturity and Product Type, 9-20
 - Analysis of Equity Exposures for Banks Broken Down by Groupings, Provisions, Supervisory Transactions, and Grandfathering, 9-44

- Analysis of Estimates Against Actual Outcomes over a Longer Period, 9-37
- Analysis of Gains and Losses from Sales and Liquidations in Other Reporting Periods, and Realized Gains and Losses in Tier 1 and Tier 2 Capital, 9-43
- Analysis of Net Income or Market Value for Upward and Downward Rate Shocks, 9-50
- Analysis of Outstandings for Exposures Subject to Standardized Approach by Risk Bucket Split Between Externally Rated and Not Externally Rated, 9-27
- Analysis of Publicly Traded and Privately Traded Equity Investments by Carrying Value, Fair Value, and Market Value, 9-41
- Analysis of Total Credit Risk Required Capital by Portfolio Risk Weighted Under Different Methodologies, 9-6
 - customizing, 9-3
- Disclosure for each Internal Model Approach Portfolio of Aggregated, High, Mean, and Low Value-at-Risk Values and Comparison With Actual Outcomes, 9-54
- Disclosure of Capital Requirements for Equity Risk Using Internal Ratings Based Approach, 9-11
- Disclosure of Capital Requirements for Market Risk, 9-13
- Disclosure of Capital Requirements for Operational Risk, 9-14
- Disclosure of each Portfolio Across Probability of Default Grades of Exposure, Default Weighted Average Loss Given Default, and Default Weighted Exposure at Default, 9-34
- Disclosure of Nominal Exposure and Undrawn Exposure by Credit Risk Methodologies, 9-31
- Disclosure of the Capital Requirements for Interest Rate Risk, Equity Position Risk, Foreign Exchange Risk, and Commodity Risk, 9-52
- Disclosure of the Operational Risk Charge Before and After Any Reduction in Capital from Insurance (Advanced Measurement Approach Only), 9-49
 - distributing, 9-6
- Exposures Subject to Supervisory Risk Weights in Internal Ratings Based Approach for High Volatility Commercial Real Estate and Specialized Lending Products Subject to the Slotting Criteria, 9-29
 - overview, 9-2
- Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Geography, 9-22
- Past Due and Impaired Exposures, Specific Provisions, and General Provisions by Industry, 9-24

- Reconciliation of Changes in the Allowances for Loan Impairment, 9-25
- seeded, 1-5, 9-2
- Total Credit Exposure and Average Gross Credit Risk Exposure Broken Down by Product Type, 9-16
- Total Credit Exposure Broken Down by Geography and Product Type, 9-17
- Total Gross Credit Exposures, Which are Covered by On-balance Sheet Netting, Collateral, Guarantees, and Credit Derivatives, 9-47
- requests
 - schedule, 1-5
- required capital, 2-18, 3-11
- required capital percentage, 3-11
- retail purchased receivables, 3-9
 - See also* purchased receivables
- risk
 - components, 7-9
 - exposure at default, 3-2, 3-5
 - loss given default, 3-2, 3-3
 - maturity, 3-2, 3-5
 - probability of default, 3-2, 3-3
 - credit, 2-1
 - default, 3-6, 3-9, 7-9
 - dilution, 3-6, 3-9, 7-9
 - functions, 7-10
 - capital requirement equation, 3-6
 - correlation value equation, 3-6
 - maturity adjustment equation, 3-6
 - purchased receivables, 3-6
 - risk weighted asset equation, 3-6
 - market, 4-5
 - operational, 4-1, 7-11, 8-5
- risk weighted assets
 - calculating, 2-17
 - internal models method, 3-10
 - PD / LGD method, 3-11
 - simple risk weight method, 3-10
 - securitized, 2-18, 3-11, 3-12
 - total, 2-18, 3-11
- risk weights, 2-2
 - adjustments, 2-4
 - asset class categorization, 2-3
 - country risk scores, 2-3
 - credit ratings, 2-3
 - exceptions, 2-7
 - floors, 2-7
 - sovereign, 7-8
 - unrated bank claims, 7-8
- rule
 - process, 9-6
- rules
 - approval, 6-1
 - approval process for, 6-2
 - creating, 7-2, 8-2
 - deletion process for, 6-2

- duplicating, 7-13
- executed, 1-5
- selecting, 7-1, 8-1
- version
 - creating, 7-3, 8-3

S

- securities
 - debt, 2-6
 - public sector entities, 7-8
 - sovereign entities, 7-8
 - transferable, 2-6
- securitization, 3-12
- settings
 - audit, 8-6
- specialized lending
 - commodities finance, 3-1, 3-7
 - high volatility commercial real estate, 3-1, 3-7
 - income-producing real estate, 3-1, 3-7
 - object finance, 3-1, 3-7
 - project finance, 3-1, 3-7
- stress testing, 1-9

T

- tables
 - Banking, 9-51
 - Calculated Collateral Values, 9-48
 - Defaulted Loan, 9-36
 - Instrument, 9-16
 - Instrument Results, 9-6
 - Instruments Results, 9-7
 - Investment Instruments, 9-42
 - Ledger, 9-7
 - Loan Losses, 9-39
 - Value-at-Risk Results, 9-13
- threshold
 - internal ratings based, 3-3
 - maximum, 7-10
 - minimum, 7-10
- total annual assets, 3-6
- total annual sales, 3-6
- transactions
 - repo-style , 2-7

U

- user interface
 - administration
 - registration, 1-5
 - setup, 1-5
 - tuning options, 1-5
 - business rule, 1-3
 - documents, 1-5
 - home, 1-3
 - methodology elections, 2-18
 - process management, 1-4

V

versions
duplicating, 7-13

W

weighted average capital
calculating, 3-8

