Oracle Financial Services Basel Regulatory Compliance for APRA

User Guide

Release 8.1.2.1.0

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OFS Basel Regulatory Compliance for APRA

Document Control

Version Number	Revision Date	Change Log
1.0	May 2022	Created new user guide for Basel Regulatory Compliance for APRA jurisdiction.
2.0	December 2022	Updated for CAP 8.1.2.1.0 release.
3.0	February 2023	Updated the Seeded Data file link in the **Seeded Values Used** section.

Table of Contents

1   Getting Started

1.1   Intended Audience

Welcome to Release 8.1.2.0.0 of the Oracle Financial Services Basel Regulatory Compliance User Guide.

This guide is intended for:

- Technical Analyst: This user ensures that the data is populated in the relevant tables as per the specifications, executes, schedules, and monitors the execution of Runs as batches.

- Business Analyst: This user reviews the functional requirements and information sources, like reports.

- Data Analyst: This user is involved with cleaning, validation, and importing of data into the OFSAA Download Specification Format.

- Administrator: The Administrator maintains user accounts and roles, archives data, loads data feeds, and so on. The Administrator controls the access rights of users.

1.2   Conventions

The following text conventions are used in this document.

Table 1: Document Conventions

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action or terms defined in text or the glossary.
Italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`Monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, file names, text that appears on the screen, or text that you enter.
Hyperlink	Hyperlink type indicates the links to external websites and internal document links.

1.3   Installing this Major Release

For detailed instructions to install this Major Release, see the Oracle Financial Services Capital Adequacy Installation and Configuration Guide Release 8.1.2.0.0.

1.4 Related Information Sources

We strive to keep this and all other related documents updated regularly; visit the OHC Documentation Library to download the latest version available there. The list of related documents is provided here.

- OHC Documentation Library **for OFS Capital Adequacy (OFS CAP) Application Pack:**

    - Oracle Financial Services Capital Adequacy Pack Installation Guide

- OHC Documentation Library **for OFS AAAI Application Pack:**

    - *OFS Advanced Analytical Applications Infrastructure (OFS AAAI) Application Pack Installation and Configuration Guide*

    - *OFS Analytical Applications Infrastructure User Guide*

    - *OFS Analytical Applications Infrastructure Administration Guide*

    - *Oracle Financial Services Analytical Applications Infrastructure Environment Check Utility Guide*

- **Additional documents:**

    - OFSAA Licensing Information User Manual

    - OFS Analytical Applications Infrastructure Security Guide

    - OFSAAI FAQ Document

    - OFS Analytical Applications Technology Matrix

    - Oracle Financial Services Analytical Applications Infrastructure Cloning Guide

2   What's New in this Release

In the OFS Basel Regulatory Capital Release 8.1.2.0.0, we are catering to the latest guidelines pertaining to Basel III: Finalizing Post Crisis Reforms compliance for Canada, Hong Kong, and Saudi Arabia, with respect to the Standardized Approach. This release also catered to Credit Risk – IRB changes for BIS, and Counterparty Credit Risk related changes for Australia. And this release also had the Process Modeling Framework related changes for Thailand regulatory compliance for Basel III.

This release also has additional features that help banks in complying with any changes to their data and re-execution of previous dates, based on the regulatory needs or strategic needs of the bank. It also caters to the incremental processing, which is the calculation of only specific data that has changed across different dates, and considering the remaining as is, and computing the total regulatory risk weighted assets and capital for the total. This has a significant benefit in terms of the reduced end to end processing time.

There has also been changes in terms of having a user interface that will help in viewing the reclassification rules that are currently available in the product, and also having a workflow associated with it, to control the editing and changes made to the existing reclassification rules. There has also been a user interface that helps in viewing the thresholds that are defined for complying with the operational risk loss calculations, and as specified by the regulator.

The OFS Base Regulatory Capital Analytics 8.1.2.0.0 has been enhanced to cater to Operational risk related dashboards, that are related to the Basel III: Finalizing Post Crisis Reforms compliance.

As part of this release, the solution is compliant with the Basel III: Finalizing Post Crisis Reforms and the Basel Framework updates for the Counterparty Credit Risk and Operational Risk. The key functionalities addressed in this release are as below:

- Counterparty Credit Risk
  - Standardized Approach (SA – CCR)
  - Adjusted Current Exposure Method
  - Default Fund Contribution for QCCP
  - Default Fund Contribution for Non - QCCP
  - Credit Valuation Adjustment – Standardized Approach
- Operational Risk
  - Revised Standardized Approach
- Capital Structure
  - Net Capital Ratio and Capital Buffers

There has also been design changes to cater to Credit Risk Mitigation.

Common Functionality Impacting Across Jurisdictions:

As part of this release, there have been newer functionalities introduced to cater across jurisdictions:

- User Interface for Specifying Derivatives EAD as a user input

    - Functionality allowing the user to specify whether the Derivatives EAD will be provided as an input, or will be computed by the product, using the specified method. This allows the flexibility to modularize the computations for counterparty credit risk.

- User Interface for Regulatory Capital Threshold

    - Functionality allowing the user to edit and view the thresholds specified by the regulator for the capital calculations.

- User Interface for Regulatory Capital Source

    - Functionality allowing the user to edit and view the capital data source required for the capital calculations.

- Regulatory Definition Options for Rating Assessment

    - Functionality allowing the user to select the Multiple Assessment Logic based on either the Risk Weight Rankings or the Rating Ranking.

- Regulatory Definition Options for Counterparty Credit Risk

    - Functionality allowing the user to select Counterparty Credit Risk related supervisory options based on approval and the bank's discretionary option based on the bank's internal processes as a separate option, instead of being part of the Credit Risk.

- Integration of the Reclassification User Interface for all Runs

    - The Reclassification user interface has been integrated in each of the out of box supported jurisdictional runs.

- Integration of the Portfolio for all Runs

    - Functionality allowing the user to select different portfolios that are applicable for each regulatory calculation, within a single jurisdictional calculation.

OFS Basel Regulatory Capital Analytics

The OFS Basel Regulatory Capital Analytics 8.1.2.0.0 has been enhanced with dashboards catering to the newer functionality of Operational Risk.

3   Introduction to Basel Regulatory Capital

In 1988, the Bank for International Settlements published the first guidelines on Capital Adequacy called the Basel I accord which primarily focused on credit risk. Assets of Banks were classified and grouped into five categories according to credit risk, carrying risk weights. On 4 July 2006, the BIS Committee issued a comprehensive version of the Basel II Framework. This document also consisted of the changes in the June 2004 Basel II Framework, the elements of the 1988 Accord that were not revised during the Basel II process, and the 1996 Amendment to the Capital Accord to incorporate Market Risks. The major outlines of the Basel II Accord are to comply with the three pillars.

- The First Pillar: Minimum Requirements for:
    - Tier 1, Tier 2, and Tier 3 capital
    - Credit Risk
    - Market Risk
    - Operational Risk
- The Second Pillar: Supervisory Review Process
- The Third Pillar: Market Discipline

    The main highlights of the Basel III Accord of December 2010 (rev June 2011) were:

- Stricter Capital: Basel III requires banks to hold 4.5% of common equity (up from 2% in Basel II) and 6% of Tier I capital (up from 4% in Basel II) of risk-weighted assets (RWA).
- Capital Buffer: Basel III also introduces additional capital buffers, (i) a mandatory capital conservation buffer of 2.5% and (ii) a discretionary countercyclical buffer, which allows national regulators to require up to another 2.5% of capital during periods of high credit growth and (iii) a discretionary G-SIB / D-SIB buffer as applicable.
- Leverage Ratio: Also, Basel III introduces a minimum leverage ratio and two required liquidity ratios. The leverage ratio is calculated by dividing Tier 1 capital by the bank's Total Exposure. Banks are expected to maintain a leverage ratio above 3%.
- CVA Risk: Basel III introduced a CVA risk charge in addition to a counterparty default risk charge for Over counter derivative portfolio.

    The Oracle Financial Services Basel Regulatory Capital application consists of Capital Adequacy and Risk-Weighted Assets computations as prescribed in Basel I, Basel II, and Basel III Accord.

    The Oracle Financial Services (OFS) Basel Regulatory Capital application is categorized into two versions:

- OFS Basel Regulatory Capital Basic supports the Standardized Approach and its variant for the BIS Jurisdiction.
- OFS Basel Regulatory Capital Internal Rating Based Approach: This is based on the approaches supported by the OFS Basel Regulatory Capital Basic Application and the advanced approaches for BIS Jurisdiction.

    The following approaches and calculation are supported in the application:

- Credit Risk
    - Non-Securitization – Standardized Approach & IRB Approach
    - Securitization – Standardized Approach & IRB Approach

- Counterparty Credit Risk

  - EAD Calculation for Derivatives – OTC Derivatives, Cleared Transactions and Exchange Traded Derivatives – Current Exposure Method & Standardized Approach of CCR

  - Default Fund Contribution

- Market Risk

  - Market Risk – Standardized Approach & FRTB Standardized Approach

- Operational Risk

  - Operational Risk – Basic Indicator Approach, Standardized Approach, Alternative Standardized Approach Capital Structure & Buffers

The following jurisdictions are being supported in the out of the box, with all the calculations listed above:

- EU

  - CRR and CRD IV

  - CRR II and CRD V

- BIS

  - Basel II

  - Basel III & Further

- APRA

  - Basel III Post Crisis Reforms (APS_112) (Credit Risk Only)

3.1   Capital Structure

During the economic crisis, the global banking system had an insufficient level of high level quality capital. During the crisis, it was identified that there was inconsistency in the definition of capital across jurisdictions and lack of disclosure. To address this issue of inconsistency, the Basel Committee has prescribed a new definition of capital to strengthen the Global Capital Framework under Basel III.

Figure 1: Definition of Capital Structure
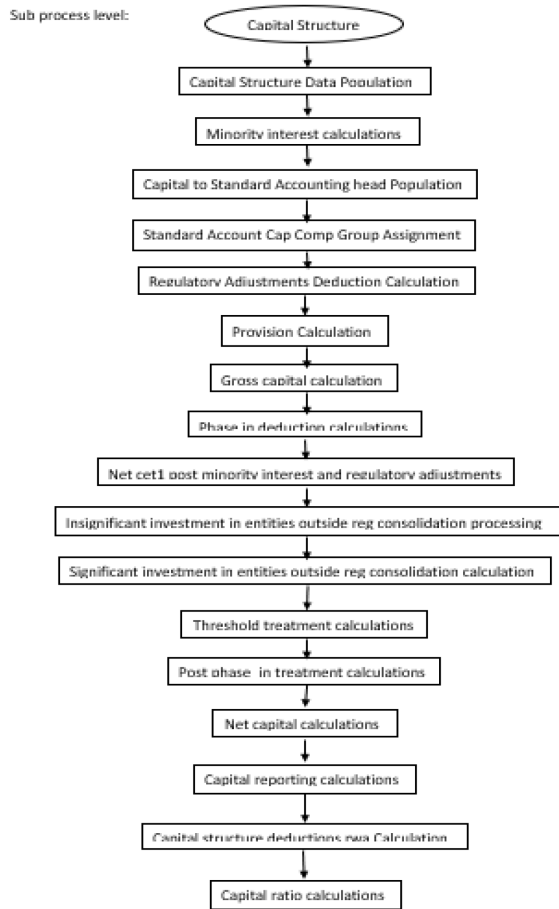
As per the new definition in the Basel III accord, total capital consists of sum of the following elements:

1. Tier1 Capital, which comprises of the following components,

   ▪ Common Equity Tier 1

   ▪ Additional Tier 1

2. Tier 2 Capital

   Each component of capital is subject to restrictions where CET1 must be at least 4.5% of total risk-weighted asset. Tier 1 capital must be at least 6.0% of total risk-weighted asset. Total capital must be 8.0% of total risk-weighted asset. Each component of capital undergoes minority interest and regulatory adjustments. The minority interest is applicable for a consolidated entity only, during the consolidation run. Most of the Regulatory Adjustment Line items are to be deducted from CET1.

   All the regulatory adjustment line items follow a phase-in arrangement from the beginning of 2014 till 2017.

   In particular, the Regulatory Adjustments begin at 20% of the required adjustments to Common Equity Tier 1 on 1 January 2014, 40% on 1 January 2015, 60% on 1 January 2016, 80% on 1 January 2017, and reaches 100% on 1 January 2018.The same transition approach applies for all deductions from additional Tier 1 and Tier 2 Capital.

While executing Solo Run the Parent Entity Data is processed. Investment into the Subsidiary Data is processed as per Credit Risk and Market Risk Rule. Capital Line Item pertaining to Parent Entity is only processed.

While executing Consolidation Run, the parent entity and the Subsidiary Data is considered.

3.1.1 Assumption

Investments in accounting entities (which are outside the scope of regulatory consolidation) by parent bank are long-term investments and mostly equity related instruments, therefore these investments are not processed for Credit Risk Mitigation.

The GL Codes are expected to be unique across entities in Stage General Ledger Data (STG_GL_DATA) and Capital Accounting Head Dimension (DIM_CAPITAL_ACCT_HEAD).

3.1.2 Data Population

Exposure level input for Capital Structure will flow from different Stage Portfolio Tables.

Along with the Portfolio Level Stage Tables, application uses these below table:

Stage GL DATA (STG_GL_DATA),Stage Gl master(STG_GL_MASTER),Stage Party Share Holding Percentage (STG_PARTY_SHR_HLD_PERCENT),Stage Entity Share Holding Percentage (STG_ENTITY_SHR_HLD_PERCENT),Dim Organization Structure (DIM_ORG_STRUCTURE),Stage Standard Accounting Head (STG_STANDARD_ACCT_HEAD),Stage Legal Entity Details (STG_LEGAL_ENTITY_DETAILS), FSI_SETUP_CAPITAL_SOURCE (In this table application stores the CAPID details for example the capital component group or if it is eligible for transition),FSI_SETUP_CAPITAL_HEAD (In this table application stores all the seeded ratios as per regulatory guidelines).

3.1.3 Shareholding Percent Multiplication

Based on the share-holding percentage of the parent bank in the subsidiary and the consolidation approach to be followed for each of the entity, the Basel Approach is selected.

For example: if the share-holding for an entity is 35% and is part of the Consolidation Process, then the approach selected for this entity is pro-rata consolidation. The reclassification is performed in task – 'Basel III Capital Consolidation Basel Approach Type Reclassification for an Entity' in the process '**CAPITAL_CONSOLIDATION** AND PARAMETER ASSIGNMENT'.

The entity level population is part of BIS Common Data Processing (PMFCOM020) Process. The application updates the shareholding percentage against each entity common data in the fact Capital Accounting Head from the fact entity shareholding percent table and update the Capital Accounting Head amount multiplying with the shareholding percent of that particular entity. The Parent Data in the processing table of fact Capital Accounting Head is updated with the value 1 and for each Child Entity, the data is based on the Parent's Holding Percentage specified for each Child in Fact Entity Shareholding Percent Table.

3.1.4 Common Reclassification Rules

There is certain reclassification which are specific to the Capital Structure Process – Standard Accounting Head Reclassification, and Entity Type Reclassification.

- **Capital to Standard Accounting Head Reclassification:**

    1. This is the reclassification of the Capital Accounting Head to Standard Accounting Head. In this, all the Capital Accounting Heads of the Bank need to be reclassified into the Standard Accounting Head, as that is the one which is being consumed in the application. This happens in the COMMON_RECLASSIFICATION (PMFCOM005) sub-process process in Common Data Processing (PMFCOM006).

- **Entity Type Reclassification:**

    1. The Entity Type Reclassification is also handled as part of the Party Type Reclassification since there cannot be difference in the Party Type and Entity Type.

    2. This happens in the BIS Other Reclassification (PMFCOM010) Process.

- **Product to Capital Component Group Reclassification:**

    1. This reclassification of the product to the Capital Component Group is based on the Basel Product Type, and this is handled at the individual portfolio tables of Investments and Derivatives. For investments this happens in the process INV_CAPITAL_STRUCTURE_RECLASSIFICATION_STD (PMFINV005) and for derivatives this happens in the DRV_RECLASSIFICATION_STD (PMFDRV012) in the process.

3.1.5 Gross Capital Calculations

For Gross Capital Calculation all the components are classified into their respective tiers (CET1, AT1, and T2) based on the Standard Accounting Head, and the specifications as mentioned by the regulator. The total gross capital for each tier of capital (CET1, AT1, and T2) is calculated as per the definition of CET1, AT1, and T2 by adding the relevant financial instrument in each tier of capital. This is processed using GROSS_CAPITAL_CALCULATIONS (PMFBISCS006) sub processes in Capital Structure Data Processing (PMFBISCS021) Process.

3.1.6 Minority Interest Calculations

Surplus of Minority Interest

Minority Interests are calculated and the surplus amount in each tier of capital, which is attributed to third parties, are deducted from the gross capital of each tier of capital.

Minority interest is the amount that is attributable to any other party, which is not part of the Bank's entities, and have shareholding in the entity. The surplus of minority interest is calculated as the third party's interest (shareholding percent) in the surplus capital (available capital – minimum required capital).

- All the values required for processing are populated into Minority Interest Capital (**FSI_MINORITY_INTEREST**) Table which is the processing table for Minority Interest Calculations.

- The sub process – MINORITY_INTEREST_CALCULATIONS (PMFBISCS001) in Capital Structure Data Processing (PMFBISCS021) Process covers this processing.

- The Minority Interest is deducted from the gross capital of each tier of the capital.

3.1.7 Internal Transactions Deduction

The deduction also includes internal transactions in each tier of capital among the various entities which are part of the regulatory consolidation. This is to ensure that there is no double counting of exposures. This is handled in the process CAPITAL_STANDARD_ACCOUNTING_POPULATION (PMFBISCS002).

3.1.8 Regulatory Adjustments & Deductions from Each Tier of Capital

All the Regulatory Adjustment Line items are expected as download in the Stage General Ledger Data Table (STG_GL_DATA). Some of these line items are Good will, Other Intangibles, Deferred Tax Assets, Cash Flow Hedge Reserve and so on. The related deferred tax liabilities are also expected to be provided as a download. The application calculates the values net of DTL and then processes it for the Regulatory Adjustments. The detailed list of these line items is part of the FSI Setup Capital Source (FSI_SETUP_CAPITAL_SOURCE) Table.

The sub process – REGULATORY_ADJUSTMENTS_DEDUCTION_CALCULATION (PMFBISCS004) and PROVISION_CALCULATION (PMFBISCS005) in Capital Structure Data Processing (PMFBISCS021) Process handle this requirement.

3.1.9 Certain Deductions part of Corresponding Deduction Approach

There are certain deductions which are expected to be part of each of the tier of capital. And they follow the corresponding deduction approach, wherein the deduction of the line item happens in the same tier of capital to which the exposure belongs to. This is being mostly pulled from the relevant

3.1.9.1 Investment in Own Shares

The investment in own shares are calculated as the sum of the pre-mitigation EAD (EAD Pre-mitigation Measure Value (**N_EAD_PRE_MITIGATION**). The source for investment in own share is the Individual Portfolio Table.

The source for Non-Sec exposures is FSI Cap Investment Exposures (FSI_CAP_INVESTMENT_EXPOSURES), and FSI Cap Derivative Exposures (FSI_CAP_DERIVATIVES). The process where this is being handled is Capita Structure Data Processing (PMFBISCS021).

This populates into the Fact Calc accounting head (fct_calc_acct_head). This is being populated for each of the respective tier of capital.

The Investment in own shares is being calculated in the task INV_DRV_DEDUCTION_CALC_ACCT_HEAD_DATA_POP in Capital Structure Data Population (PMFBISCS019) Process.

This also goes for phase in calculations, which is being handled in the PHASE_IN_DEDUCTION_CALCULATIONS (PMFBISCS007) process.

3.1.9.2 Reciprocal Cross-holdings

The Investment in reciprocal cross-holdings are calculated as the sum of the pre-mitigation EAD (EAD Pre-mitigation Measure Value) (N_EAD_PRE_MITIGATION) in FSI Cap Investment Exposures (FSI_CAP_INVESTMENT_EXPOSURES), and FSI Cap Derivative Exposures (FSI_CAP_DERIVATIVE) of the exposures which have the flag of reciprocal cross-holding indicator (F_RECIPROCAL_CROSS_HLDG_IND) as "Y".

For this processing, the reciprocal amount is expected as a download in the Stage Capital Investments Position Table (STG_CAP_INVESTMENTS_POSITIONS) at an instrument level. The instrument code provided in this table is the instrument in which the reporting bank has invested, and for which there is a reciprocal cross-holding by the Reporting Bank. The reciprocal cross-holding amount is also captured in this table. The application expects the Staging Data of the exposures to have the reciprocal cross-holding indicator (F_RECIPROCAL_CROSS_HLDG_IND) as 'Y'.

The application uses this INV_DRV_DEDUCTION_CALC_ACCT_HEAD_DATA_POP task in Capital Structure Data Population (PMFBISCS019) process to populate into the Fact Calc Accounting Head (FCT_CALC_ACCT_HEAD). This is being populated for each of the respective tier of capital.

This also goes for phase in calculations, which is being handled in the PHASE_IN_DEDUCTION_CALCULATIONS (PMFBISCS007) process.

And finally, the adjusted amount after deductions it goes back to the exposure level,

which is being handled in the CAPITAL_STRUCTURE_DEDUCTIONS_RWA_EXPOSURES (PMFBISCS022) from the process Capital Structure Data Processing (PMFBISCS021).

The exposure that meets the reciprocal cross-holding amount is stamped with the reciprocal cross-holding indicator (F_RECIPROCAL_CROSS_HLDG_IND) as 'Y'. This will be reduced in all the amount columns in FSI Cap Investment Exposures (FSI_CAP_INVESTMENT_EXPOSURES), and FSI Cap Derivative Exposures (FSI_CAP_DERIVATIVES) as per the reciprocal cross-holding ratio and store the actual amounts in FSI CAP DEDUCTION EXPOSURE table (FSI_CAP_DEDUCTION_EXPOSURES).

The portion of the exposure, which is above the reciprocal cross-holding amount is treated as a regular exposure and is risk-weighted as per the Basel Asset Class for that instrument.

3.1.9.3 Insignificant Investment

Investment in all financial entities, which are outside the scope of regulatory consolidation, is identified for significant and insignificant investments.

The shareholding percent for these parties are expected as download in Stage Party Shareholding Percent table (**STG_PARTY_SHR_HLD_PERCENT**). Any party which part of the Org Structure is, but is not part of the regulatory consolidation, can also qualify for this treatment, if it is financial entity. If the entity is part of the Org structure, the shareholding percent is expected in the Stage Entity Shareholding percent table (**STG_ENTITY_SHR_HLD_PERCENT**).

The parties are identified as significant when the shareholding percentage is greater than or equal to 10%. And the others are identified as insignificant investment. This processing happens in the **PARTY_SHAREHOLDING_PERCENT** process.

The total investment amount in insignificant entities is computed by summing up the Pre-mitigation EAD (EAD Pre-mitigation Measure Value (N_EAD_PRE_MITIGATION)) from the Portfolio Tables FSI Cap Investment Exposures (FSI_CAP_INVESTMENT_EXPOSURES), and FSI Cap Derivative Exposures (FSI_CAP_DERIVATIVES). And also, the tier wise computation of investment amount happens. The total amount is compared with the 10% of the CET1 amount of the Parent Bank Amount post regulatory adjustments. The amount above 10% limit is processed for deduction.

This summing up includes the Direct, Indirect and Synthetic Investments. The Indirect Investments are investments in Investment funds, and which are invested in Capital Instruments. The Synthetic Investments are the investments in Synthetic Transactions on Capital Instruments. For all these exposures, the net long position amount, updated in **N_EAD_PRE_MITIGATION** is considered.

This is expected for all capital positions, and not for specific capital position.

The total deduction amount is pro-rated among each tier of capital based on the percentage of investment in each tier of capital. The amount arrived is deducted from each tier of Capital.

The investment amount below the 10% limit is treated as per Banking Book Rule for the instrument.

The application computes as follows:

Parties are marked as insignificant investment parties by updating the flag: Significant Entity Indicator (**F_SIGNIFICANT_INVESTMENT_IND**) in Fact Party Shareholding Percent (**FCT_PARTY_SHR_HLD_PCT**) with value N, and **F_SIGNIFICANT_INVESTMENT_IND** in Fact Entity Info (**FCT_ENTITY_INFO**) with value N.

- The exposure amount of Banking Book and Trading Book Exposures (any Counterparty Credit Risk Exposures) to these entities are summed by grouping their component of capital and compared against 10% of Parent Bank's CET1 capital. The portion of amount which exceeds the 10% limit is deducted.

- This is computed by calculating tier wise deduction percentage and multiplying this percentage with the Exposure Amount to arrive at the amount to be deducted from each tier of capital.

- The total investment values are populated into Non-Regulatory Consolidation Entity Investment (**FSI_NON_REG_CONSL_ENTITY_INVST**) Table which is the processing table for insignificant and significant investment deductions.

- The sub process – INSIGNIFICANT_INVESTMENT_IN_ENTITIES_OUTSIDE_REG_CONSOLIDATION_PROCESSING (PMFBISCS010) in Capital Structure Data Processing (PMFBISCS021) covers the processing.

- After the application of this treatment, the Insignificant Investments line item also follow phase–in arrangement which is similar to the phase-in arrangement for Regulatory Adjustments.

3.1.9.4 Significant Investment

The total investment amount is checked against the set limit of 10% of CET1 amount of the parent bank, post insignificant investment amount adjustment. The CET1 amount above 10% is deducted from the CET1 post insignificant investment amount deduction. The CET1 amount below 10% follows threshold deduction. The investment amount in AT1 and T2 is fully deducted from its respective AT1 and T2 tier of capital. The application computes as follows:

Entities are marked as significant investment entities by updating the flag – Significant Entity Indicator (**F_SIGNIFICANT_INVESTMENT_IND**) in Fact Party Shareholding Percent (**FCT_PARTY_SHR_HLD_PCT**) with value Y and Significant Entity Indicator (**F_SIGNIFICANT_INVESTMENT_IND**) in Fact Entity Information (**FCT_ENTITY_INFO**) with value 'Y'.

The Exposure Amount of Banking Book and Trading Book Exposures (any Counterparty Credit Risk Exposures) to these entities are summed by grouping their component of capital and compared against 10% of parent bank's CET1 capital. The portion of amount which exceeds the 10% limit is deducted from CET1. The exposures of AT1 and T2 are fully deducted from respective tier of capital. This is done by calculating deduction percentage for CET1 and by multiplying this percentage with the CET1 exposure's exposure amount to arrive at the amount to be deducted from CET1 capital.

The sub process – SIGNIFICANT_INVESTMENT_IN_ENTITIES_OUTSIDE_REG_CONSOLIDATION_PROCESSING (PMFBISCS011) in Capital Structure Data Processing (PMFBISCS021) covers the processing.

After the application of this treatment, the Significant Investments line item also follow phase–in arrangement which is similar to the phase-in arrangement for Regulatory Adjustments.

3.1.10   Threshold Deduction Treatment

Threshold Deduction is populated in the **FSI_THRESHOLD_TREATMENT** table and the threshold calculations are processed in this table.

The line items, (Significant and insignificant Investment in the Common Shares of Accounting entities are populated from the FSI NON REGULATORY CONSOL ENTITY INVESTMENT table (FSI_NON_REG_CONSL_ENTITY_INVST), Mortgage Servicing Rights net of Deferred Tax Liabilities are populated from the Fact Standard Accounting head (FCT_STANDARD_ACCT_HEAD) table, and DTAs that arises from temporary differences are populated from the Fact Capital Accounting Head (FCT_CAPITAL_ACCT_HEAD).

The three-line items' significant investment in the common shares of BFSI where the Bank owns more than 10%, Mortgage Servicing Rights (MSR), and DTAs that arises from temporary differences is processed for threshold deduction are populated in the Capital Threshold Treatment (**FSI_THRESHOLD_TREATMENT**) table and the threshold calculations are processed in this table. These three-line items are individually compared with the 10% of CET1 calculated Post Regulatory Adjustments, Insignificant Investments, and Significant Investment. The amounts which are above 10% CET1 limit are deducted from CET1 following the phase-in arrangements. During the transition period, any amount of these three-line items, which is not deducted as per the 10% mentioned earlier, is summed up for the aggregate 15% limit check. During the transition period, the check of 15% is against the CET1 post all regulatory adjustments and adjustments to insignificant investments and significant investments and the individual threshold deduction. In the post transition period, instead of 15%, the aggregate check is 17.65% of CET1, post all regulatory adjustments and adjustments to insignificant investments, less 100% of the sum of the line items which goes for threshold deduction.

The amount which is not deducted due to this 10% and 15% check is risk-weighted 250% during the transition period and is risk-weighted 250% post the transition period. The entire processing is done in the sub process – 'THRESHOLD_TREATMENT_CALCULATIONS (PMFBISCS012) in Capital Structure Data Processing (PMFBISCS021).

3.1.11   Net Capital Calculations

The net CET1, net AT1, and net T2 capital amount are calculated post all regulatory adjustments. Any shortfall in T2 capital amount is adjusted against Net AT1 amount and any shortfall of AT1 capital amount is adjusted against Net CET1 amount.

This is done in sub process – NET_CAPITAL_CALCULATIONS (PMFBISCS014) in Capital Structure Data Processing (PMFBISCS023)

For RWA, RWA_POPULATIONS (PMFBISCS016) in Capital Structure Data Processing (PMFBISCS023).

For net capital it is NET_CAPITAL_CALCULATIONS (PMFBISCS014) in Capital Structure Data Processing (PMFBISCS023).

3.1.11.1   Total RWA Calculations

The RWA amount for Credit Risk - Non-Securitization, Counterparty Credit Risk, Credit Valuation Adjustment Risk Weighted Asset, Credit Risk - Securitization, Market Risk, and Operational Risk and Regulatory Capital Phase in Related RWA are calculated by summing up the RWA amount.

The Phase-In RWA captures the capital instrument investments that goes for deduction from Capital but because of Phase-In arrangement are to be risk-weighted such as – Reciprocal Cross-holding, Treasury Stock, Insignificant Investment amount, Significant Investment amount and Threshold deduction amount.

These are reported under different Capital accounting heads such as 'Risk-weighted Asset amount for Standardized Portfolios/IRB portfolio' for Non-Securitization, "Sec Std RWA" for Securitization portfolio, "Market RWA" for Market Risk and "Operational RWA" for Operational Risk.

This is part of the RWA_POPULATIONS (PMFBISCS016) in Capital Structure Data Processing (PMFBISCS023).

3.1.11.2 Capital Ratio Calculations

Tier 1 capital ratio and capital adequacy ratio are calculated using the total RWA amount, net Tier 1 capital, and Total capital amount.

For capital ratio, the process is CAPITAL_RATIO_CALCULATIONS (PMFBISCS017) in Capital Structure Data Processing (PMFBISCS023).

3.1.11.3 Required Capital ratio

This process is handled in CAPITAL_RATIO_CALCULATIONS (PMFBISCS017).

In this the application calculates CET1 capital ratio, T1 capital ratio, T2 capital ratio and a total capital ratio summing all of them.

And the same is being compared with the required capital ratio provided as an input for the specific regulator. The required capital ratio is being provided as an input in the FSI Setup Capital Accounting Head (FSI_SETUP_CAPITAL_HEAD).

3.1.11.4 Deficit or Excess Capital

The shortfall is handled in the sub process Net Capital Calculations (PMFBISCS014),

Here the application calculates CET1 , AT1 and T2 Capital Shortfall Amounts.

3.1.11.5 Key Data Elements

Key Data Elements to process the Capital Structure for the consolidated entity is as follows. For a complete list of tables and columns to be updated, see the Download Specifications document.

Entity details which are part of Regulatory Consolidation and Parent Entity shareholding percent. This data is captured in Stage Entity Shareholding Details (STG_ENTITY_SHR_HLD_PERCENT) table.

The Capital Structure Component for each tier of capital for all entities involved in regulatory consolidation.

The total RWA, total CET1, AT1, and T2 amount and third-party percentage of holdings in each tier of capital for minority interest calculation.

The Regulatory Adjustment Amount like goodwill, DTA, other intangible assets, Cash Flow Hedge Reserve, and defined pension fund asset, MSR, and so on.

The transaction of the investment amount for Accounting Entity which is outside the scope of Regulatory Consolidation.

The CET1, AT1, and T2 capital of the entity which has third party minority holdings in it are expected as a download in legal entity details (STG_LEGAL_ENTITY_DETAILS) table. Similarly, the third-party investment in each tier of capital is also expected as a download in legal entity details table.

The minimum required capital for each tier for each Capital Adequacy Regulator (for the entity that has third party minority holding in it) is expected in the setup table - Setup Capital Heads (FSI_SETUP_CAPITAL_HEAD).

The Total RWA (CAP838) for the entity that has third party minority holding in it is a download value in Stage Standard Accounting Head (STG_STANDARD_ACCT_HEAD).

3.2 Key Features

The important features of the OFS Basel Regulatory Capital Application are as follows:

- One Integrated Application that allows for different approaches configured for various portfolios.

- Financial Institutions can migrate to more advanced approaches as and when required.

- Comprehensive coverage of Credit Risk Mitigation techniques ensures optimum allocation of Credit Risk Mitigants to exposures for maximum RWA reduction using the optimizer functionality in the application.

- Extensive, pre-built instrument coverage, built to meet Basel III Guidelines, which means banks, can get 'up and running' quickly with minimal pre-processing.

- It is a fully transparent application where all Rules and Approaches are visible to Business Users, Reviewers, or Auditors.

- Audit Trail is present to maintain accountability of Rule changes, user activity, or system modifications.

4   Overview of OFSAA Infrastructure

Oracle Financial Services Analytical Applications Infrastructure is the complete end-to-end Business Intelligence Solution that is easily accessible via your desktop. A single interface lets you tap your company's vast store of operational data to track and respond to business trends. It also facilitates the analysis of the processed data. Using OFSAAI you can query and analyze data that is complete, correct, and consistently stored in a single place. It has the prowess to filter data that you are viewing and using for analysis.

It allows you to personalize information access to the users based on their role within the organization. It also provides a complete view of your enterprise along with the following benefits:

- Track enterprise performance across information Data Store.

- Use one interface to access all Enterprise Databases.

- Create consistent business dimensions and measures across Business Applications.

- Automate the creation of coordinated Data Marts.

- Use your business language to get fast and accurate answers from all your Databases.

- Deploy an open XML and Web-based Solution against all major relational or multi-dimensional databases on Microsoft Windows and UNIX Servers.

This chapter provides an overview of Infrastructure, its components, and explains how these components are organized in the Splash Window with the User Login Process.

4.1   Components of OFSAAI

The OFSAA Infrastructure consists of the following components or modules that are used to deploy an analytical solution.

- Data Model Management

- Data Management Tools

- Unified Analytical Metadata

- Rules Run Framework

- Metadata Browser

- Operations

- Questionnaire

- Process Modelling Framework

- System Configuration & Identity Management

- Object Administration

- Forms Framework

See the OFS Analytical Applications Infrastructure User Guide for more information on all important components/modules of OFSAAI.

5 Application Processing

This section provides details on the Application Processing Components.

5.1 Data Requirements

Data can be divided into two categories – Setup Tables, and Slow Changing Dimensions (SCD), and can be set up by the bank

- **Setup Tables**

- A Setup Table is a set of data that is static and does not change at regular intervals.

- **Dimension Tables**

- A slowly changing Dimension Table is a set of data that is static and does not change at regular intervals. For more information on SCD, see the Section Slow Changing Dimensions in the Annexure.

5.2 Data Assumptions

This section aims to identify certain data-related assumptions for specific tables that help in the smooth functioning of the Basel Regulatory Capital Application.

Data Format

- In all the date columns, data is expected as per the MIS_DATE_FORMAT of the Atomic Schema.

- Country and Currency codes are expected as per the ISO standard.

Dimension Table

DIM_CAPITAL_ACCT_HEAD: General Ledger items and Non-General Ledger items are differentiated in the column **F_GL_IDENTIFIER** by the flag Y that indicates the General Ledger items and the flag N that indicates non-General Ledger items.

Mapping Table

FSI_CAPITAL_STANDARD_MAPPING: For certain standard account headline items that are processed by the application, for example, Net Tier 1 Capital, Total eligible Capital, Tier 1 Capital Ratio, and Capital Ratio, you are expected to provide mapping for these items as Others in the column **V_CAPITAL_ACCOUNT_IDENTIFIER** in the **FSI_CAPITAL_STANDARD_MAPPING** table. These capital line items mapped as Others are used in the **T2T - CAPITAL_STD_ACCT_HEAD_POP** to insert records into **FCT_STANDARD_ACCT_HEAD** from **FCT_CAPITAL_ACCT_HEAD**.

Across the Basel product, in all the seeded data tables, the open end date is mentioned as 31-DEC-9999. You must not modify this value.

FACT Table

FCT_CAPITAL_ACCT_HEAD: General Ledger items and non-General Ledger items are differentiated in the column **F_GL_IDENTIFIER** with the flag Y that indicates General Ledger items and the flag N that indicates non-General Ledger items. The T2T that populates data from the table **STG_GL_DATA** to the **FCT_CAPITAL_ACCT_HEAD** table populates the value Y in the column **F_GL_IDENTIFIER.** The T2T that populates data from the **STG_STANDARD_ACCT_HEAD** table to the table **FCT_CAPITAL_ACCT_HEAD** populates the value N in the column **F_GL_IDENTIFIER.** The reclassification of General Ledger and non-

General Ledger SKEYS to standard account head skey (**N_STD_ACCT_HEAD_SKEY**) happens in the **FCT_CAPITAL_ACCT_HEAD** table by either of the following tables:

- A Type 2 rule is used to reclassify by using the **DIM_CAPITAL_ACCT_HEAD** and **DIM_STANDARD_ACCT_HEAD tables.**

- The referencing the mapping table **FSI_CAPITAL_STANDARD_MAPPING**

    From the **FCT_CAPITAL_ACCT_HEAD** table, General Ledger and Non-General Ledger data flows into the **FCT_STANDARD_ACCT_HEAD** table. Again, the distinction is based on the flag Y in the column **F_GL_IDENTIFIER**.

5.2.1   Data Loading

The OFSAAI Data Integrator Framework allows you to move data flexibly within the Oracle Financial Services Analytical Applications (OFSAA) Data Model at different levels of granularity and various stages of the process.

Data can be loaded into the required Stage or Setup Tables in the following ways:

- **Connecting to other databases**: Relational Data Sources can be defined to connect to any of the Relational Database Management System (RDBMS) like Oracle, IBM DB2, MS SQL Server, and any RDBMS through native connectivity drivers or ODBC. RDBMS Data Source lets you define the RDBMS Engine present locally or remotely with FTP access to the remote server.

- **Flat-Files**: Flat File data source lets you define the flat file present locally or remotely with FTP access to the remote server. Data files can be made available in the standard staging area configured in OFSAAI. A Flat-File data source is a local data source residing in the staging area of the Infrastructure Database Server.

    For more information on the format of the flat file or RDBMS file, see the Download Specifications document.

    Further, data can be loaded or maintained by using the following components available in the Data Integrator Framework:

    Excel upload: Choose this option when you have moderate quantities of data that are available in an excel file format.

    Manual Data Entry – Forms: The Data Entry Forms and Queries (DeFQ) Module of the Data Integrator is designed to create user-friendly Data Entry windows with a choice of layouts, which enables data viewing and data manipulation easily. You can select tables based on which you can create forms that can be used in any application.

    For more information on data loading activities like Flat File Source and Connecting to other databases, see the OFS Advanced Analytics Infrastructure User Guide.

5.2.2   Reclassification Rules

A sample list of products, customer types, issuer types, collateral types, credit ratings, and organization structure is pre-defined in the application. However, the list and naming convention of products, customer types, and so on, might differ from one bank to another. The application re-classifies the Bank's data into standard data, which does not change for a given set of regulations, and then processes it based on standard classifications. This restricts the level of modifications needed for each implementation for re-classifying the Bank's data into the relevant standard classifications.

The list of reclassification rules required for the population is attached in the Annexure.

Setting up the Data

The respective Dimension Tables corresponding to products (**DIM_PRODUCT**), customer types, issuer types (**DIM_PARTY_ TYPE**), collateral type (**DIM_MITIGANT_TYPE**), credit ratings (**RATING_SRC_MASTER** and **DIM_CREDIT_RATING**), and organization structure (**DIM_ORG_STRUCTURE**) are populated with the list of product types, customer types, issuer types, collateral types, ratings, and organization structure as used in the respective bank.

As described in the Data Requirements Section, these tables can be populated by directly uploading data into the tables if they are not likely to change frequently or by using the SCD Component, if the data is likely to change over some time.

Also, data is expected in **STG_PRODUCT_MASTER**, **STG_PARTY_TYPE_MASTER,** and **STG_MITIGANT_TYPE_MASTER** for the product, party type, and mitigant types. SCDs populate data from these tables into **DIM_PRODUCT, DIM_PARTY_TYPE,** and **DIM_MITIGANT_TYPE**.

Modifying the Re-Classification Rules

You must only populate the SCD tables through the SCD Batches. The hierarchies related to Product Types, Customer Types, and so on, must be re-saved if the data keeps on changing. This can be done individually for each hierarchy using the Unified Metadata Manager or in bulk using the Save Metadata link under Administration on the LHS Pane of the OFSAAI Window. A new node is created in the source hierarchy. This node is mapped to the node in the target to be added to the target hierarchy. The pre-configured reclassification rules are modified to map the Bank's data to the Standard data using the Rules Framework.

5.3 Processing

After data stores are created and Rules, Processes, and Runs are defined, the timing and frequency of the Execution can be established. For more information on the Runs pre-configured with the application, see the Run Charts. To execute Runs as batches, see the Operations Section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

The scheduling of Runs within OFSAAI can be managed on a real-time or batch basis. Batch processes can be executed daily, weekly, monthly, or to meet specific business needs. The Run Management facility also provides the ability to run jobs on a manual or real-time basis, as required. Existing investments in external schedulers can also be used to call web services within this infrastructure.

5.3.1 Batch Processing

A batch refers to a set of executable processes based on a specified rule. Batches relating to the application must be executed as specified below. These batches are executed from the Operations Menu of OFSAAI. For more information on the Operations Section, see the OFS AAI User Guide.

Slowly Changing Dimension Batch: This must be executed when you are installing the application for the first time. Subsequently, this batch must be executed only when new data is added. The tasks processed and the order in which the tasks are processed, are specified in the Run Charts.

5.3.1.1   Basel Common Batch

The following tasks are mapped to the Basel Common Batch:

- Date Population: This task populates the table DIM_DATES.

- Party Role Map Calculation: This task populates the party and the role mapping from STG_PARTY_ROLE_MAPPING to FSI_PARTY_ROLE_MAPPING.

- FSI IRCS Calculation: This task populates FSI_IRCS from STG_IRC_RATE_HIST.

5.3.1.2   PARTY_FIN_DATA_POP Batch

Populates the Party Financial Data and executes it as required when the Party Financial Data is available.

5.3.1.3   BASEL_DAILY Batch

This batch is to be executed daily. This batch is used to populate the exchange rate between different currencies for each date.

5.3.1.4   BASEL_SETUP_TBL_POP Batch

This batch is used for Basel Set Up Tables' population. This batch contains T2Ts to populate data from setup tables into the corresponding processing tables, and includes rules to mark the latest data indicators. You are required to provide data in setup tables, whichever applicable. The tasks in this batch are adhoc and can be selected as applicable.

For more information on the setup tables for the batches, see the Setup Table Batch Details file.

For more information on the Post Crisis Operational Risk, see the **BASEL_SETUP_TBL_POP Batch** section in the BIS User Guide.

5.3.1.5   BASEL_RATING_AGENCY

This batch is used for identifying eligible agencies for rating the exposures in a particular jurisdiction. Data is pulled from DIM_CREDIT_RATING into FSI_CREDIT_RATING_JUIRSDICTION against all regulators available in DIM_ORG_STRUCTURE.
Please note that V_CREDIT_RATING_NAME, V_CREDIT_RATING_AGENCY columns in DIM_CREDIT_RATING are essential for the eligibility rules to work.

Any new user additions to DIM_CREDIT_RATING must have these columns populated.

5.3.2   Basel Configurations

The Basel Configuration Framework is a unique feature of the Basel Regulatory Capital Application which enables a business user - without assistance from a technical analyst - to easily define a Portfolio and a Run. This framework allows you to define a Run by selecting a combination of different Basel approaches for RWA computation. It also allows you to define a Run for a combination of portfolios.

You can execute the Runs as a PMF batch from the Process Modeller Window. The Regulatory Calculation Definition UI lists all the runs defined in the Framework. For more information on the Process Modelling Framework, refer Oracle Financial Services Analytical Applications Infrastructure Process Modelling Framework Orchestration Guide.

The Basel Configurations feature consists of the following functionalities:

- Optimizer

- Portfolio Definition

- Regulatory Calculation Definition

5.3.2.1   Optimizer
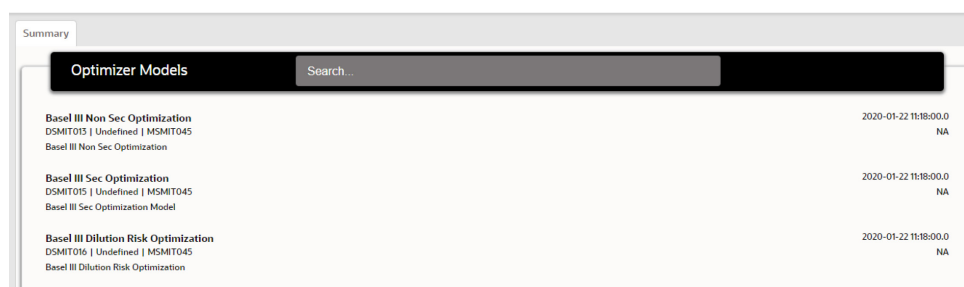
A prerequisite for defining the Optimizer is to update the pool ID in the sub-exposures **FSI_CAP_SUB_EXPOSURES** table for the selected Run.

5.3.2.1.1   Viewing an Optimizer

To view the optimizer, perform these steps:

1. Log in to the application and select **Financial Services Basel Regulatory Capital Basic**.

2. On the LHS menu, click **Basel Regulatory Capital Basic**, click **Basel Configurations**, and then click **Optimizer** to open the **Optimizer Models** window.

Figure 2: The Optimizer Models Window

3. Select an optimizer to view it.

5.3.2.1.2   Executing an Optimizer

Prerequisites

You must ensure the following before executing the optimizer:

- Complete the pooling process and update the **N_POOL_ID** column in the **FSI_CAP_SUB_EXPOSURES** table.

   Optimizer Models are defined and accessible on the Optimizer Models Page. These models are mandatory to execute the model for a particular exposure type.

Executing an Optimizer through an Independent Process

Perform the following steps to execute an optimizer as an independent process:

1. Log in to the application as a System Administrator.

2. Click **Basel Regulatory Capital Internal Ratings Based Approach** or **Basel Regulatory Capital Basic** depending on the application that you have the license.

3. Click Process Modelling and then click Process Modeller.

4. Click Add to open the Process Details Window.

Figure 3: The Process Details Window

5. Populate the fields in the Process Details form as tabulated.

Table 2: The Process Details Form

Fields	Description
Process ID	Enter an ID for the Optimizer Process.
Process Name	Enter a name for the Optimizer Process.
Process Description	Enter a description for the Optimizer Process.
App Package ID	Select an Application Package ID from the drop-down list.
Type	Select the type from the drop-down list.
Spark DB	Do not enable this field if you want to keep the default settings.
Infodom	Select the infodom from the drop-down list.
Tag	Enter the names of the tags to be used for the optimizer process.
Segment	Select a segment from the drop-down list.

6. Click **Start** and drag the **Start** process in to the canvas.

Figure 4: The Start Process Added to a Canvas
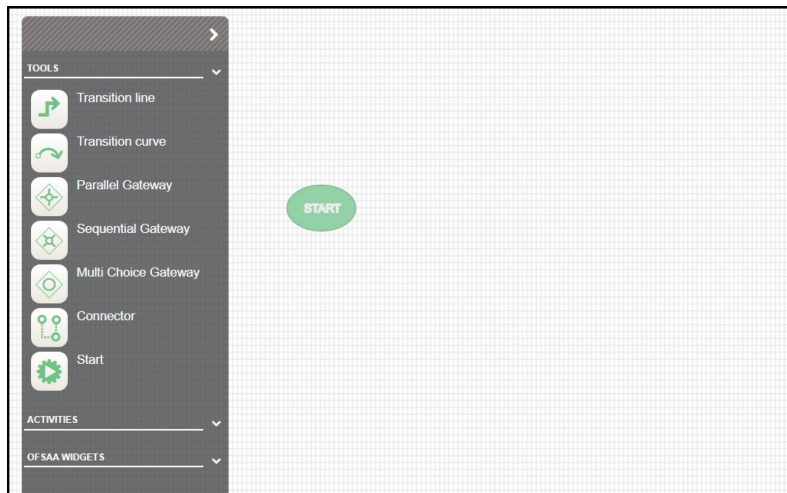
7. Click **ACTIVITIES** to expand it.

8. Click and drag **Service Task** Process Component into the canvas.

Figure 5: The Service Task Process Added to the Canvas
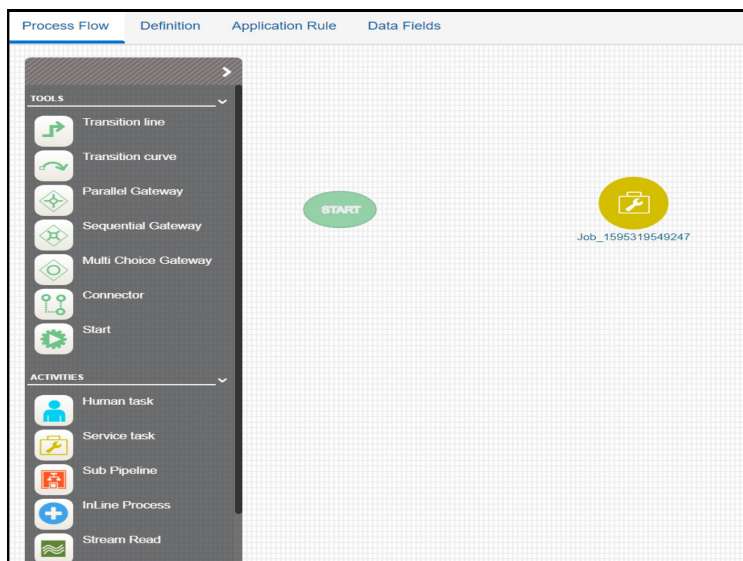
9. Join the **Start** Component to the service task component by dragging the **Transition line** Connector into the canvas.

Figure 6: The Transition Line Connector Added to the Canvas
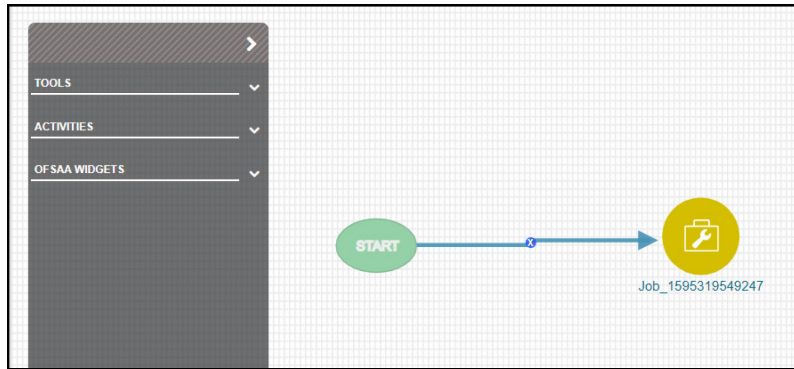
10. Double-click the service task component to open the settings window.

Figure 7: The Settings Window

11. Click **Settings** [icon] to open the **Settings** Tab.

Figure 8: The Settings Tab

12. Click **Find** to open the **Participant Details** Screen.

Figure 9: The Participant Details Window
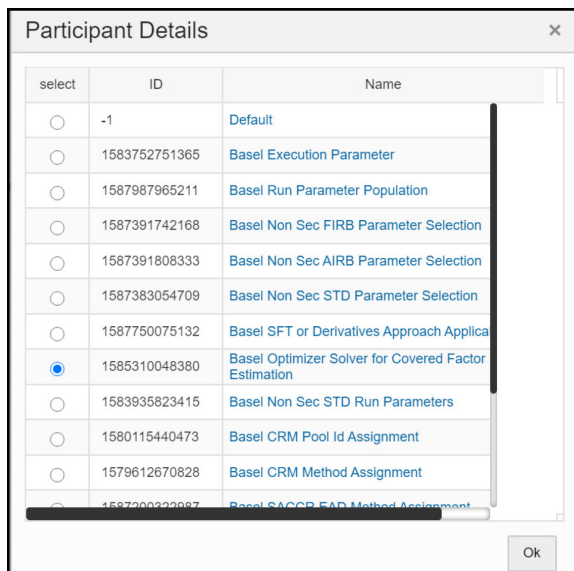
13. Click the rule Basel Optimizer Solver for Covered Factor Estimation and then click OK.

14. Click **Add** to open the **Binding Details** Window.
The Data Field is automatically populated with the input value BASEL_OPTIMIZER_MODEL_CODE.

Figure 10: The Binding Details
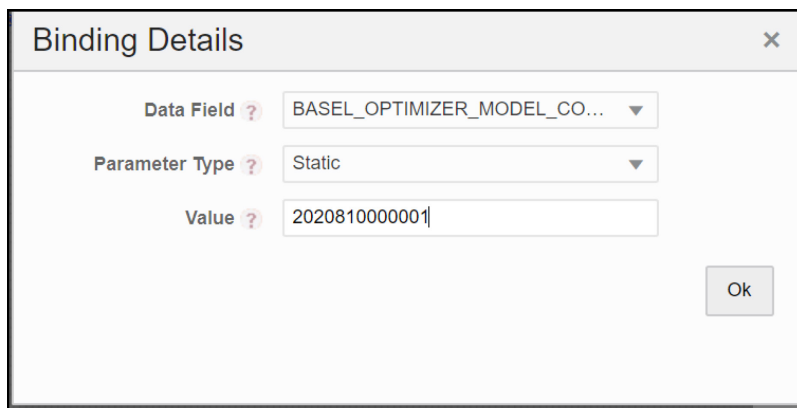
15. Click **Ok**.

In case the model code is not available on the screen, you can retrieve it from the **FSI_BASEL_OPTIMIZER_MODEL_TL** table.

Figure 11: Sample Model Code Retrieval Query

Select * from FSI_BASEL_OPTIMIZER_MODEL_TL where V_MODEL_DESC = 'Basel III Non Sec Optimization';

The **Parameters** pane is populated with the values that you added in the **Binding Details** Window.

Figure 12: The Parameters Pane Populated with Values
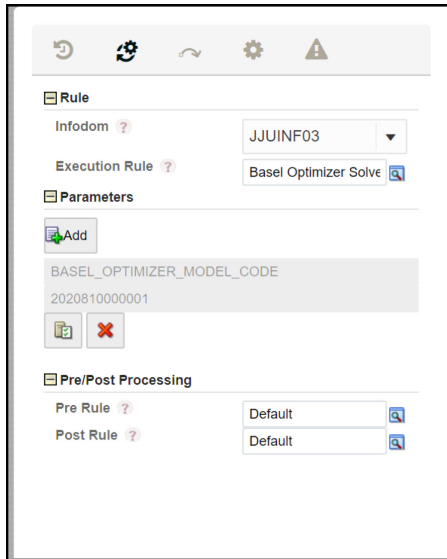
16. Click **Save**.

The newly created Optimizer Run appears on the Process Modeler Page.

Figure 13: Newly Created Optimizer Run on the Process Modeler Page
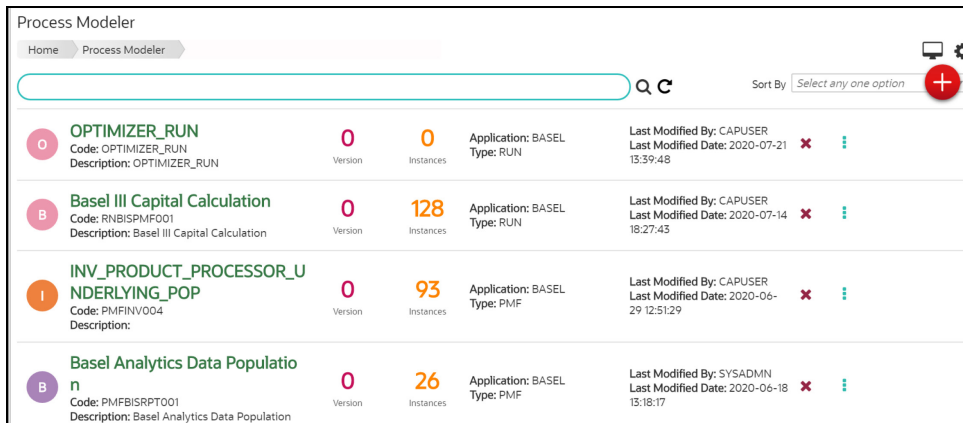
17. Click **More** to view additional actions.

Figure 14: The Available Actions for a Run
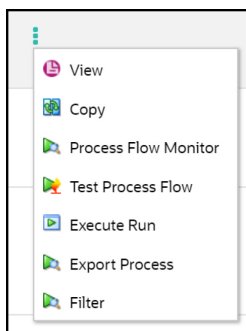
18. Click **Execute Run** to open the **Select Run Params** Window.

Figure 15: The Select Run Params Window

19. Populate the Select Run Params form as per the following table:

Table 3: The Select Run Params Pane

Field	Description
Execution Date	Select the Execution Date by clicking **Calendar** 📅 .
Legal Entity	Select a legal entity.
Consolidation type	Select the consolidation type from the drop-down list.
Reporting Currency	Select the reporting currency.
Significant Currency	Select the Significant Currency from the drop-down list.
Basel Configuration	Select the Basel Configuration from the drop-down list.

20. Click **OK** to go back to the **Process Modeler** Page.

   The Optimizer Run is in progress.

21. Click **More** ⋮ and then select **Process Flow Monitor**.

   The Run status will be either Running or Completed.

Figure 16: The Status of the Run
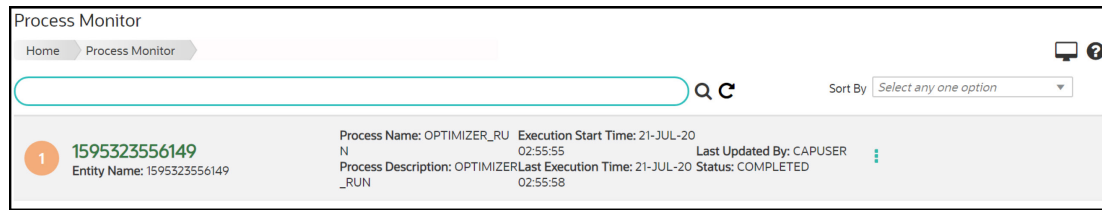
Executing an Optimizer via the Sub-process of a Different Run

The steps to execute an optimizer run via the sub-process of a different Run are similar to the steps in the Executing an Optimizer through an Independent Process section. The only difference is that the optimizer Run that you want to execute is connected to a different Run in the canvas of the Process Details Screen.

5.3.2.1.3   **View the Optimizer** Log

View the Optimizer Log on via the Process Monitor Page

Follow these steps to view the log from the Process Monitor Screen:

1. On the Process Monitor pane, click the required optimizer for which you want to view the log to open the Process Definition Window.

2. Double-click the service task process in the canvas to open the Setting Window.

    Figure 17: The Setting Window
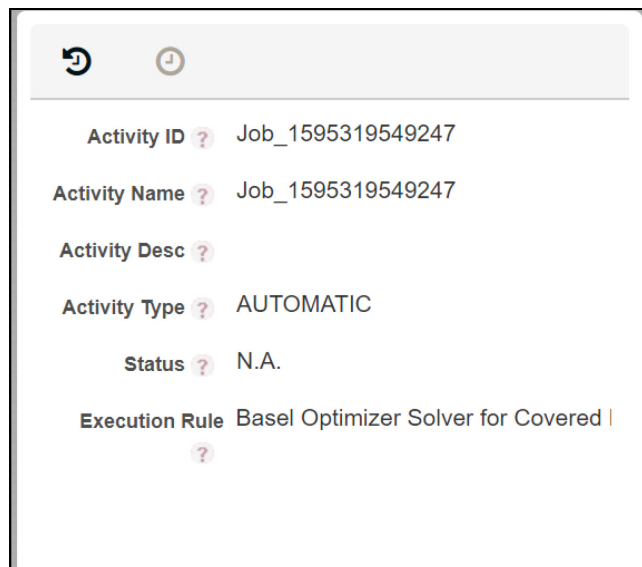
3. Click **Log** [⏲] to view the log of the Optimizer Run.

View the Optimizer Log on the Database Table

You can view the log by referring to the CL_LOG_MESSAGE column in the FSI_BASEL_OPT_SOLVER_BATCH_MASTER table.

View the Optimizer Log on the Server

APPLICATION PROCESSING

PROCESSING

The optimizer BaselSolver.log file is available in the server machine in the path:
`<web_container_location>/webapps/OFSCAP/logs`

5.3.2.2 Portfolio

You can define a combination of portfolios to participate in a Run. For example: If an institution wants to process only On Balance Sheet data and not all the product types, then the institution has the choice of selecting a subtype of an entire portfolio for processing.

5.3.2.2.1 Adding a New Hierarchy for Portfolio Creation

To add a new hierarchy for portfolio creation, the hierarchy code must be added in PORTFOLIO_HIERARCHY_MASTER table as tabulated:

Table 4: The PORTFOLIO_HIERARCHY_MASTER table

Column	Indicative values
V_HIERARCHY_CODE	Contains hierarchy code of the hierarchy to be added.
F_LATEST_RECORD_INDICATOR	To be set to 'Y' for the hierarchies which have to be displayed.
D_RECORD_START_DATE	Start date of the hierarchy.
D_RECORD_START_DATE	The End Date of the hierarchy.

5.3.2.2.2 Access Portfolio Definition

To access a portfolio definition, follow these steps:

1. Log in to the application and select Financial Services Basel Regulatory Capital Basic.

2. On the LHS menu, click Basel Regulatory Capital Basic, click Basel Configurations, and then click Portfolio to open the Portfolio Definition Window.

Figure 18: The Portfolio Definition Window
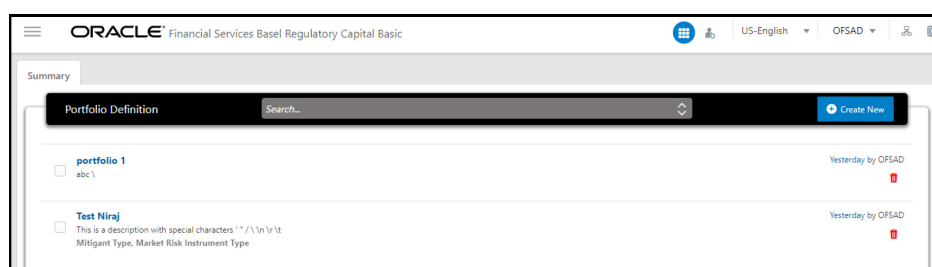
5.3.2.2.3 Create a Portfolio Definition

To create a portfolio definition, follow these steps:

1. In the Portfolio Definition window, click **Create New** to open the **New Portfolio Model** Window.

OFS BASEL REGULATORY COMPLIANCE FOR APRA | 37

Figure 19: The New Portfolio Model Window
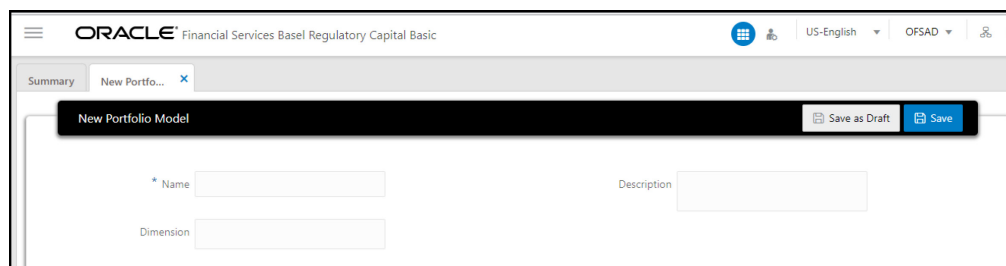
2. Populate the details as per the following table:

Table 5: The New Portfolio Model Pane

Field	Description
Name	Enter a name for the portfolio definition.
Dimension	Select a dimension(s) from the drop-down list. Available options are: • Counterparty Type • Market Risk Counter Party • Mitigant Type • Product • Market Risk Instrument Type
Description	Enter a description of the portfolio definition.
Add Dimension	This pane only appears after you select a dimension(s) in the Dimension field. Click **Add** ➕ to open the window for the selected dimension and select the required options.

3. Click **Save as Draft** if you want to save a draft of the portfolio.

4. Click **Save**.

5.3.2.2.4 Delete a Portfolio

To delete a portfolio, follow these steps:

1. In the **Portfolio Definition** window, for the portfolio that you want to delete, click **Delete** 🗑.

   A confirmation message appears, asking you if you are sure that you want to delete the portfolio.

2. Click **Yes**.

The portfolio is deleted, and the Portfolio Page is refreshed to display the updated list of portfolios.

5.3.2.3 Regulatory Calculation Definition

The Process Modelling Framework helps you to combine various components and/or processes together and execute them with different underlying approaches. For more information on the Process Modelling

Framework, refer to the [Oracle Financial Services Analytical Applications Infrastructure Process Modelling Framework Orchestration Guide](#).

5.3.2.3.1 Access the Regulatory Calculation Definition Page

To access the Regulatory Calculation Definition Window:

1. Log in to the application and select **Financial Services Basel Regulatory Capital Basic** or **Financial Services Basel Regulatory Capital IRB**.

2. On the LHS menu, click **Basel Regulatory Capital Basic** or **IRB**, click **Basel Configurations**, and then click **Regulatory Calculation Definition** to open the **Regulatory Calculation Definition** Window.

5.3.2.3.2 Create a Run Definition

Follow these steps to create a Run Definition:

To create a Run definition, follow these steps:
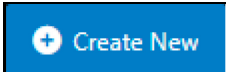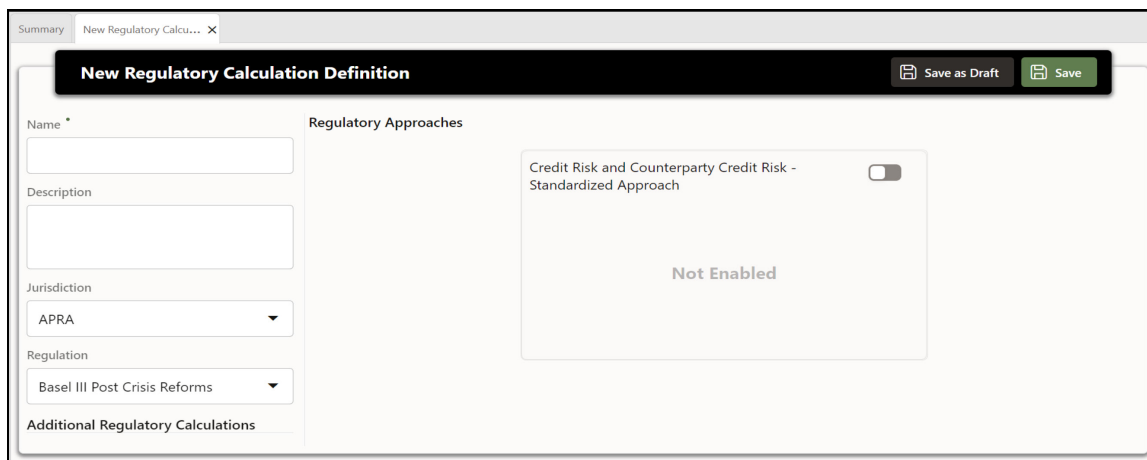
1. In the **Regulatory Calculation Definition** Window, Click **Create New** ![Create New button] to open the **New Run Definition** Window.

    Figure 20: The New Regulatory Calculation Definition Window

2. Populate the details as per the following table:

    Table 6: The New Run Definition Form

    Name-Enter a name for the Run Definition.

    Description-Enter a description for the Run Definition.

    Jurisdiction-Select a jurisdiction from the drop-down list. The available options are:

    BIS

    EU

    INDIA

    APRA

Regulation-Select a regulation from the drop-down list. The available options are:

BASEL III Post Crisis Reforms

Regulatory Approaches pane

> **NOTE:**
>
> The Regulatory approaches that appear in this field depend on if you have the license for the **Oracle Financial Services Basel Regulatory Capital Basic** or **Oracle Financial Services Basel Regulatory Capital IRB** Application pack and if you selected either BASEL III or BASEL III Post Crisis Reforms in the Regulation field.

Credit Risk and Counterparty Credit Risk for Non Securitization Exposures – Standardized Approach-Click

Select ⚙ Select to open the configurations window for this Regulatory Approach. See Step 7 to view and populate the fields available in this window.

3. If you have enabled the **Regulatory** Approaches Field, then in the required Approach Pane, click

   Select ⚙ Select to open the Configuration Window and populate the form as tabulated.

Table 7: The Configuration Form for a Selected Regulatory Approach

Field	Description
Risk Type pane	
Credit Risk	If the Regulatory Approach requires this risk type, then select the checkbox.
Counterparty Credit Risk	If the Regulatory Approach requires this risk type, then select the checkbox.
EAD & CRM Method Selection Pane	
The Capital Calculation Methods that appear in this field depend on if you have the license for the Oracle Financial Services Basel Regulatory Capital Basic or Oracle Financial Services Basel Regulatory Capital IRB Application pack and if you selected either BASEL III or BASEL III Post Crisis Reforms in the Regulation field. You must select a value from the drop-down lists. Details regarding these methods and options are provided under the section Run parameters setup.	
Supervisory Approved Option Selection Pane	
The Capital Calculation Methods that appear in this field depend on if you have the license for the Oracle Financial Services Basel Regulatory Capital Basic or Oracle Financial Services Basel Regulatory Capital IRB Application pack and if you selected either BASEL III or BASEL IV in the Regulation field. You must select a value from the drop-down lists. Details regarding these parameters and options are provided under the section Run parameters setup.	
Portfolio Pane	
Select Applicable Portfolios	Select a portfolio from the drop-down list. The portfolios that you created in the Create a Portfolio Definition Section appear in this field.

4. Select **Save as Draft** if you want to save a draft of this form.

5. Select **Save**.

5.3.2.3.3 Delete a Run Definition

To delete a Run Definition, perform the following steps:

1. In the Regulatory Calculation Definition Window, for the Run Definition that you want to delete, click

   Delete .

   A confirmation message is displayed, asking you if you are sure that you want to delete the Run Definition.

2. Click **Yes**.

   The definition is deleted, and the Summary Page is refreshed to display the updated list of Run Definitions.

5.3.3 Reporting

Oracle Financial Services Basel Regulatory Capital Analytics provides the customer with a reporting as well as Information Framework that can be used for generating reports and viewing information relevant to the capital computations and other aspects of the Basel Framework. Basel Analytics provides pre-configured Basel Dashboards for all the functionalities supported in the application, Pillar II reports covering most of the aspects related to stress testing and other supervisory review and Pillar III reports covering all market disclosure requirements of the Basel Accord.

For more information on Basel Regulatory Capital Analytics, see the Oracle Financial Services Basel Regulatory Capital Analytics User Guide.

Oracle Financial Services Basel Regulatory Capital Analytics must be licensed by the Bank separately.

6 Australian Prudential Regulation Authority (APRA)

6.1 Introduction of OFSAA Portfolio Definitions

Every Bank has different LOBs and they have different functions. To aid the bank in its efficient Management of Regulatory Calculations, the application has inbuilt portfolio definitions, concerning the Banking Book and Trading Book, respectively. The different portfolio definitions help in the ease of calculations for the bank, and the parallel processing of the risk-weighted asset calculations. In many of the Banks, the ownership of every portfolio might be different, and therefore, it becomes easier for maintaining the ownership for every data point and calculation. The data points concerning each portfolio are different.

The various portfolios concerning Credit Risk are:

- Credit Risk Non-Securitization

    - Banking Related Exposures

    - Investment Related Exposure (Only belonging to banking book).

- Counterparty Credit Risk – Non-Securitization

    - Derivative Related Exposures (Both banking and trading book exposures).

    - Securities and Financing Transaction Related Exposures (Both banking and trading book exposures).

- Credit Risk Securitization

    - Securitization Related Exposures (Only belonging to banking book).

The portfolio of trading book exposures is the portfolio for Market Risk.

For the above portfolios, the 8.1.2.0.0 release of the application includes banking and investment portfolios for the Credit Risk Non-Securitization Standardized Approach.

Figure 21: OFSAA Portfolio Hierarchy
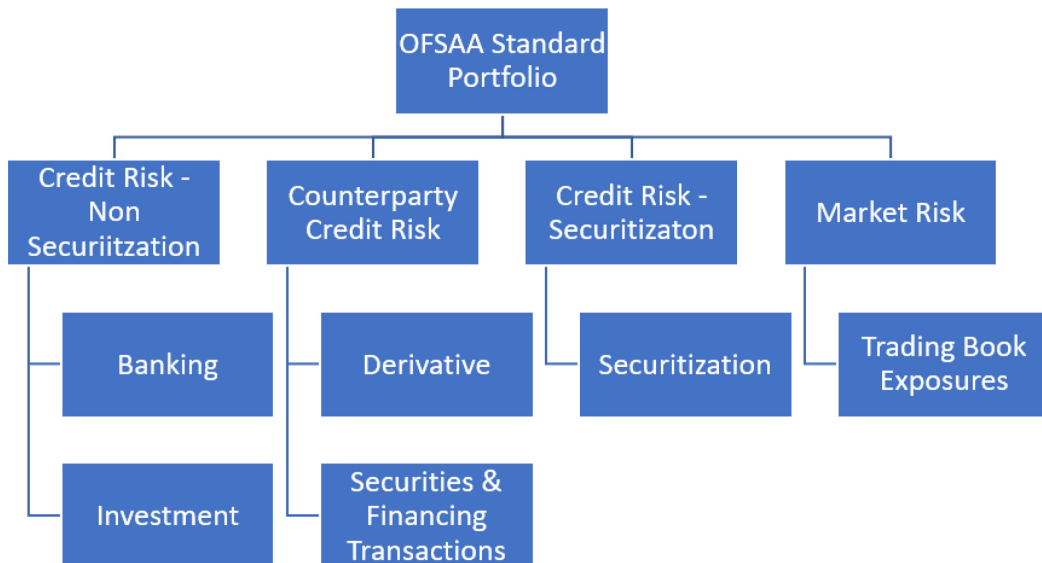
Figure 22 High-Level Flow of Processing
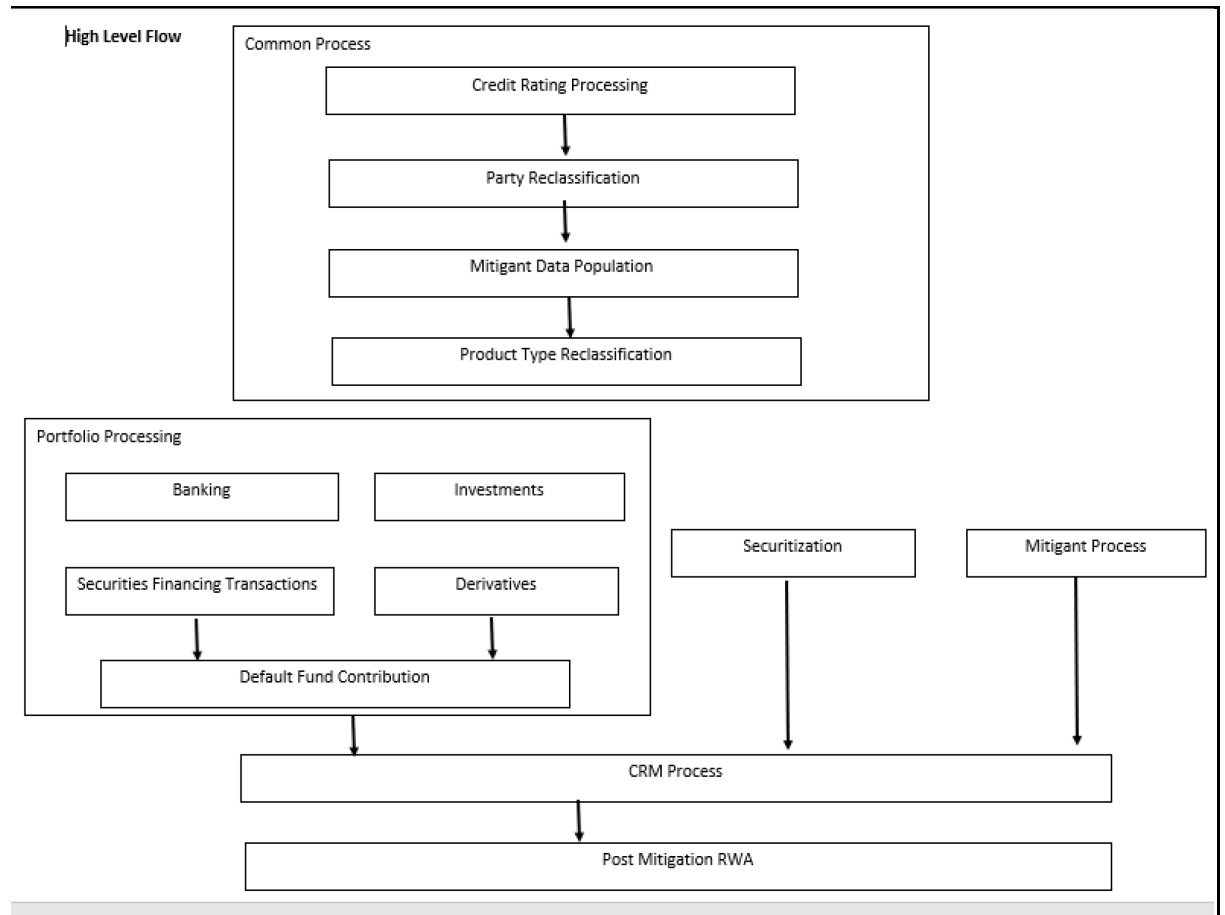
Figure 23 High-Level Flow of Processing
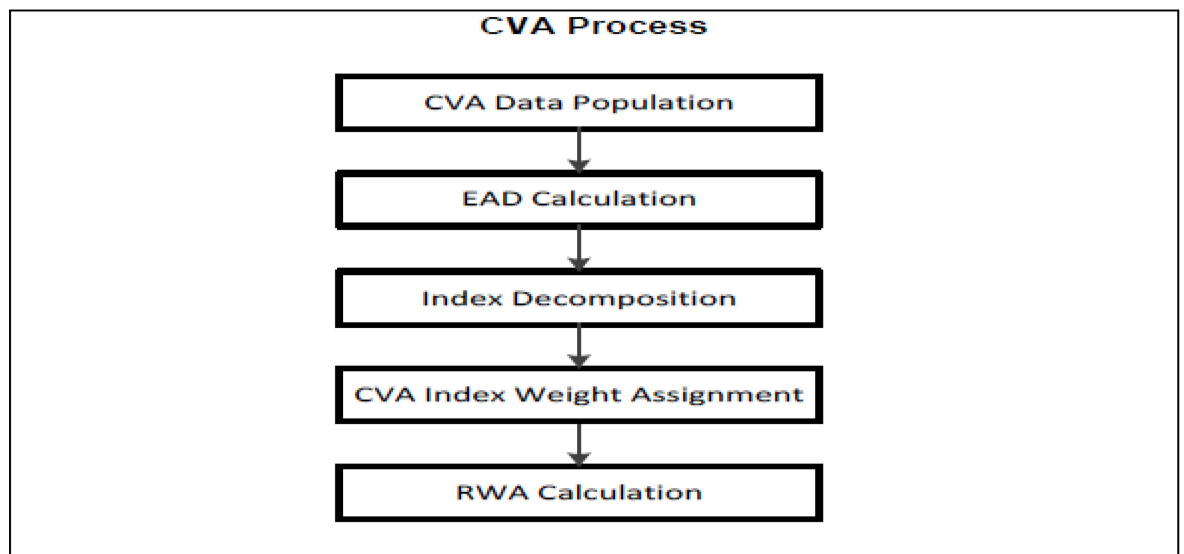
6.1.1 Banking

The Banking portfolio caters to the core banking activities of the bank – be it corporate banking or retail banking. This includes all the various banking activities in the form of loans provided by the bank, cards issued by the bank, commitments issued by the bank, overdraft provided by the bank, and other such core banking-specific activities. Since this will be a mandatory portfolio for all the banks, this portfolio has its own RWA calculations.

Figure 24: High-Level Flow of Banking Portfolio
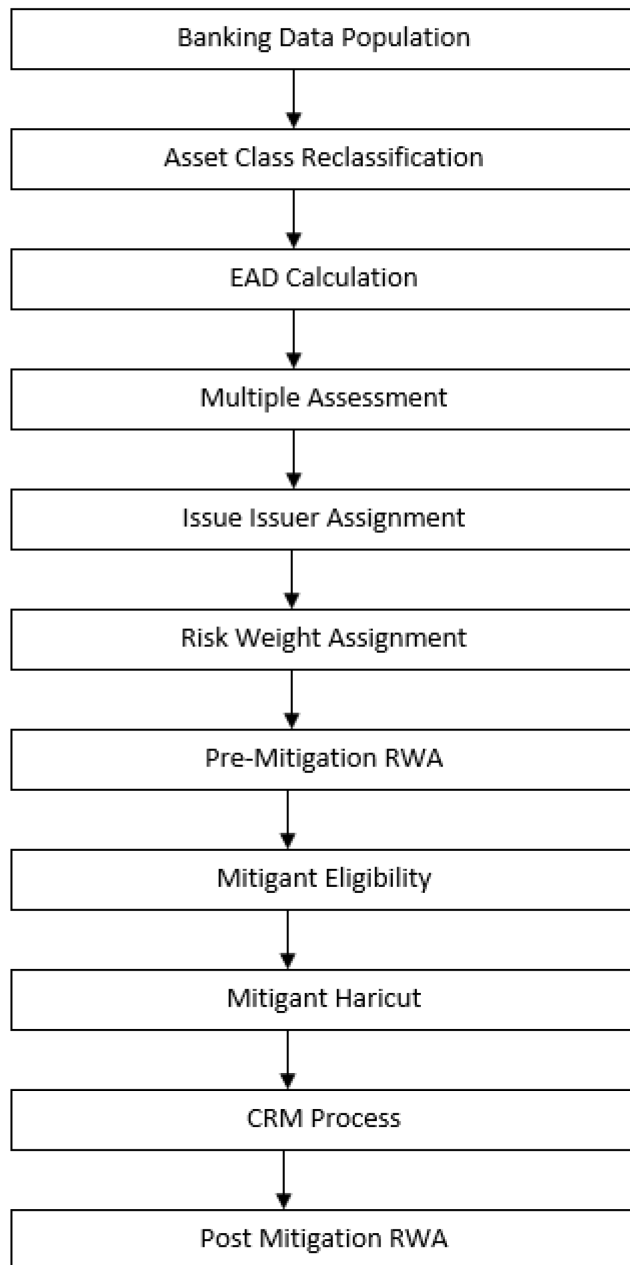
6.1.2   Investment

The Investment Portfolio caters to any of the investment activities of the bank, for which the bank holds the assets till maturity. These are the exposures that the bank will portray in the Banking Book. This includes all the investment in the form of any money market instruments or spot instruments or debt securities, held by the bank till maturity, and hence considered to be in the Banking Book. This also includes the Bank's investment in the form of fixed assets as well. This will be applicable only if the bank holds exposures in the form of investment related to the Banking Book.

Figure 25: Flow Diagram for Investment Portfolio Flow
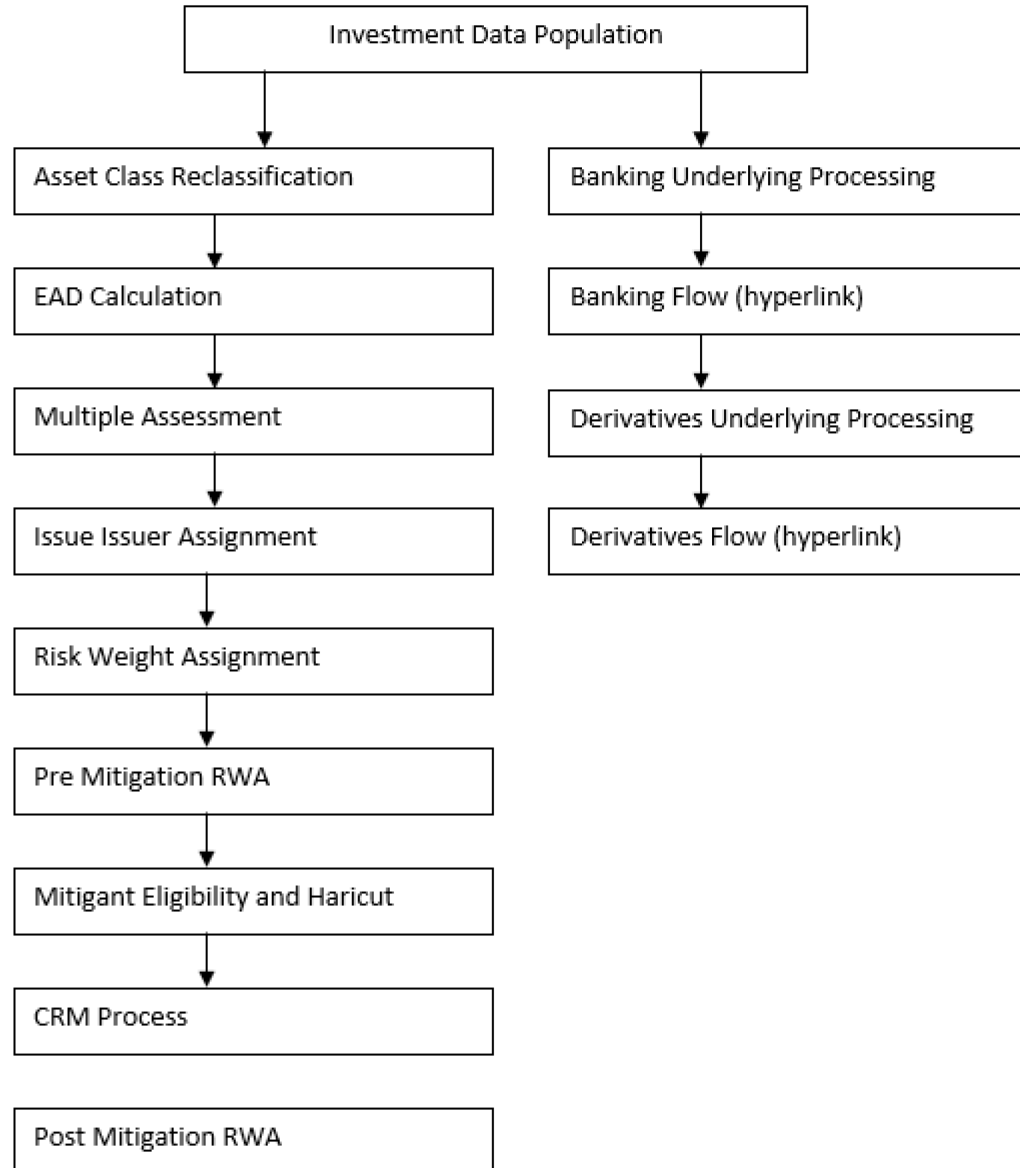
6.1.3   Derivative

The Derivative Portfolio caters to any of the derivative activities of the bank. These are the derivatives for which the bank is one of the counterparties or the bank acts as a clearing member or clearing member client. This includes derivatives in the form of credit derivatives, forwards, futures, options contracts, and swap contracts. This will include both the banking and trading book-related derivative exposures.

Figure 26: Flow Diagram for Derivatives
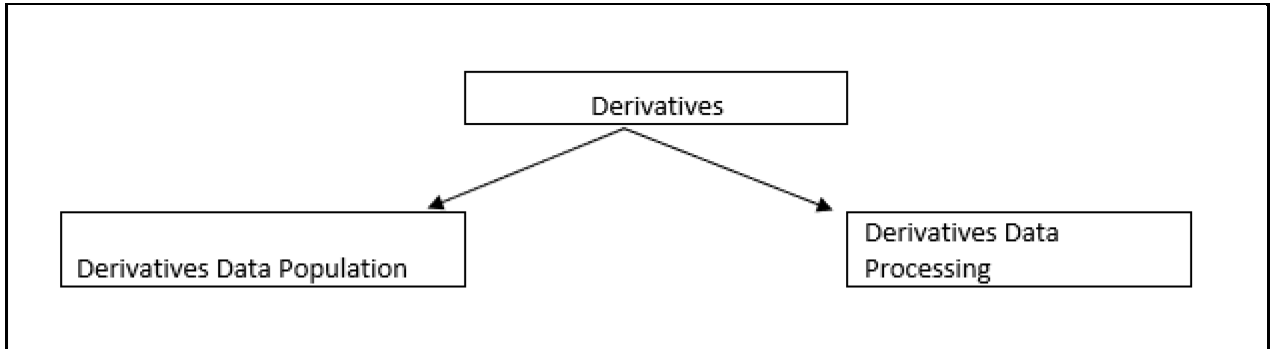
6.1.4   Securities and Financing Transactions

The Securities and Financing Transactions (SFT) Portfolio caters to any of the securities financing activities of the bank. These are the SFT which the bank enters into, or the bank acts as a clearing member or clearing member client. This includes SFT in the form of repurchase agreements, reverse repurchase agreements, margin lending transactions, securities lending, and borrowing transactions. This will include both the Banking and Trading Book-related exposures.

Figure 27: Flow Diagram for SFT
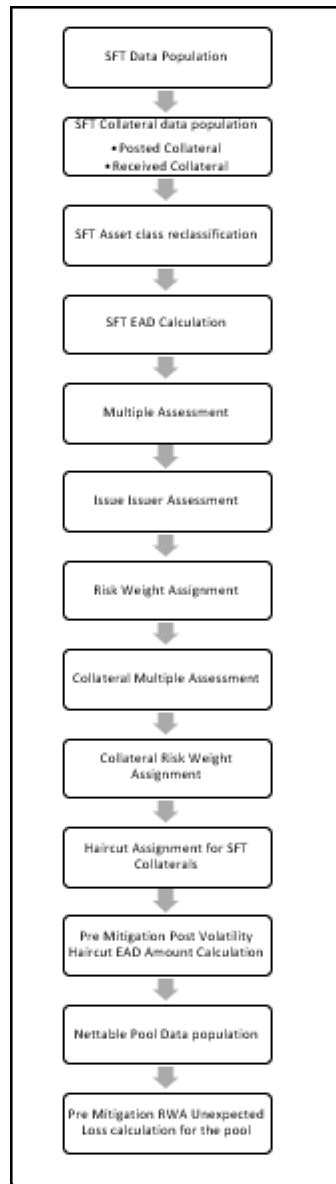
6.1.5   Credit Valuation Adjustments

CVA calculation has two approaches, the Standardized Approach and Advanced Approach, which is detailed separately under Credit Valuation Adjustment Section under Credit RWA.

Figure 28: Flow Diagram for CVA Process
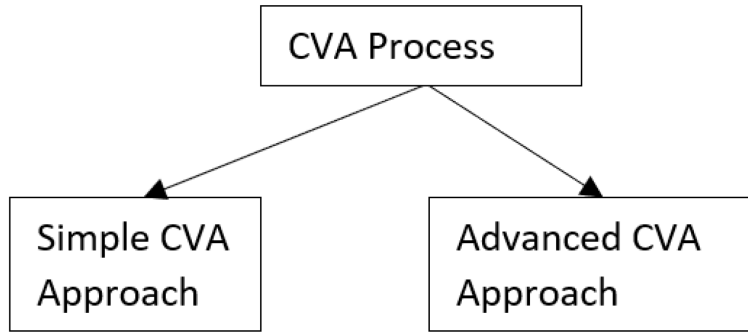
Basel committee has introduced a new Credit Valuation Adjustment (CVA) Capital Charge, which is added to default Risk Capital Charge to arrive at the new Counterparty Credit Risk (CCR) Capital Charge. The mark to market counterparty credit losses or the spread migration risk is captured with CVA, which were not directly capitalized before. CVA is the difference between the risk-free portfolio value and the true portfolio value that takes into account the possibility of the counterparty's default. In other words, CVA is the market value of counterparty credit risk.

This process flow is divided into two sections: Simple Approach and Advanced Approach. This is explained in more detail in Credit Valuation Adjustment.

6.2   Operational Risk RWA

As per the Prudential Standard APS 115 for calculating the Operational Risk Capital the Authorized Deposit taking Institutions are recommended to use the Standardized Measurement Approach. The Standardized Measrurement Approach consists of two components.

- The Business Indicator (Proxy of Banks Financial Statement Components)
- The Business Indicator Component (Based on Co-Efficients of Banks Business)

The Process flow for Operational Risk is as follows:

Figure 29: Process flow for Operational Risk
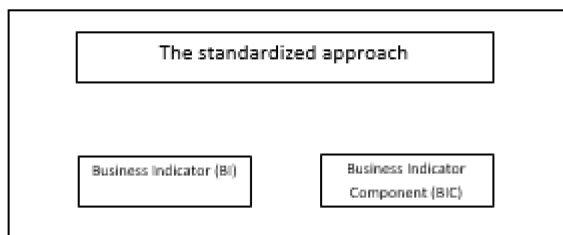
6.3   Overview of APRA Capital Adequacy Guidelines

The Australian Prudential Regulation Authority (APRA) has issued various prudential standards which encompass the entire Capital Adequacy Regulations to be followed by the Banks. These regulations are by and large compliant with Basel III: Finalizing post-crisis reform changes issued by the Basel Committee (BIS). The following are the prudential standards that comply with the Capital Adequacy Calculations:

- Credit Risk – Standardized Approach – APS_112

- Credit Risk – Advanced Approach – APS_113

- Credit Risk Securitization Exposures – Standardized Approach – APS_120

- Counterparty Credit Risk Exposures – Adjusted CEM Approach, SA-CCR, and Default Fund Contribution – APS_180

- Capital Structure – Capital Ratios, Buffers and Leverage Ratio – APS_110, 111

- Large Exposure – APS_220

- Operational Risk – APS_115

- In the above list, the guidelines that are changing, and are coming into effect based on the revised guidelines from January 2023 are the following:

- Credit Risk – Standardized Approach – APS_112

- Credit Risk – Advanced Approach – APS_113

- Operational Risk – APS_115

- Capital Structure – Capital Ratios, Buffers and Leverage Ratio – APS_110, 111

- APRA is planning to provide the revised standards for Market Risk and Credit Valuation Adjustment and they will comply from January 2024.

- Market Risk – APS_116 (yet to be finalized by APRA)

7   Prudential Standard APS_112

The OFS Financial Services Basel Regulatory Capital Application incorporates the Capital Requirements for Credit Risk Standardized Approach for Australian Jurisdiction as per the second draft guidelines of APS_112 published by APRA on 8th December 2020. The corresponding BIS guideline is **Basel III: Finalising post-crisis reforms** issued by BCBS on December 2017.

In the current release, the OFS Basel Regulatory Capital Application handles the Credit Risk Calculations as per the Standardized Approach. The calculations for Counterparty Credit Risk are also available concerning the Risk Weighting Standards. The current exposure method-related calculations are part of the next release.

7.1   Credit RWA

Credit RWA is the calculation of Non-Securitization RWA.

This includes the portfolio of banking and investment for the Non-Securitized Exposures and the Securitization Portfolio for the Securitization positions. The application complies with the standardized approach and IRB Approach of the Credit Risk Calculations.

A few processes such as Credit Rating, Party Type Reclassification, and Mitigant Data Population are common between Credit RWA and Counterparty Credit RWA.

This also includes the Settlement Risk Calculation about the unsettled transactions depending on the number of days they are unsettled.

7.1.1   Banking Portfolio

Banking Portfolio include loan, credit card, commitment and other banking book related products

The basic flow chart of Banking Portfolio is given below:

Figure 30: Flow Diagram for banking portfolio
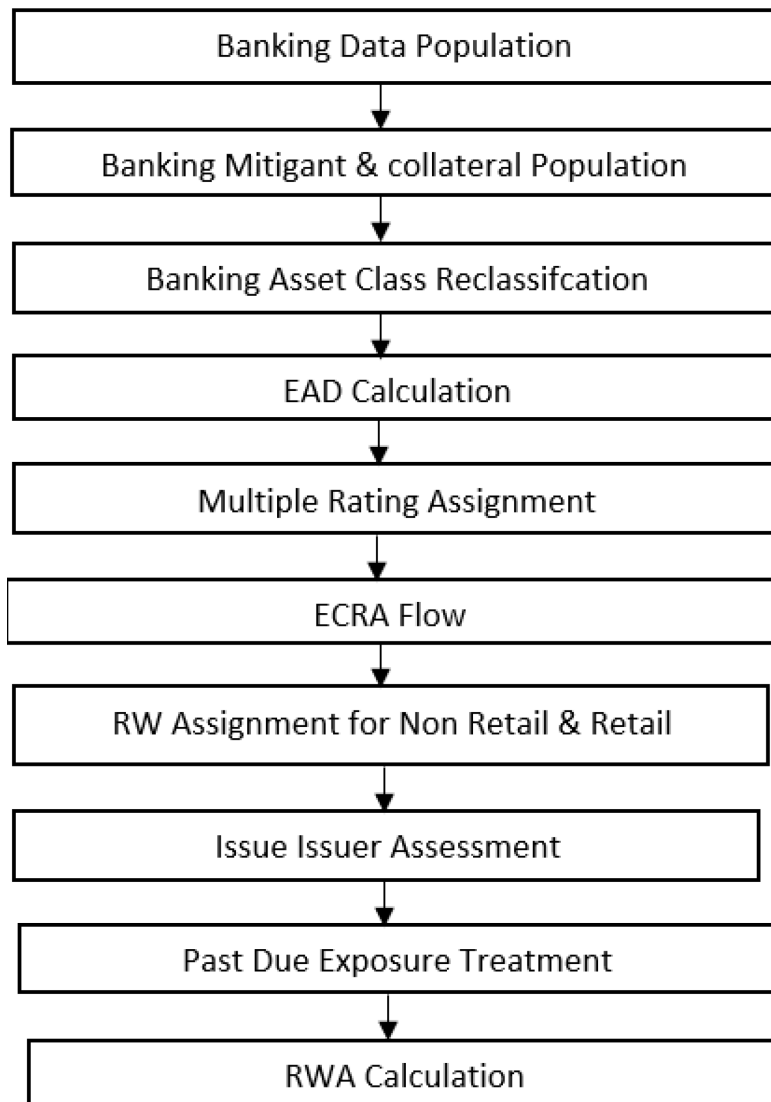
7.1.1.1   Rating Population

The data on ratings is captured in the following rating specific tables:

- Account Rating Table (**STG_ACCOUNT_RATING_DETAILS**)
  - Ratings of all Credit Risk Banking Exposures are captured in this table.

- Party Rating Table (**STG_PARTY_RATING_DETAILS**)
  - Credit Ratings for all customers and issuers are captured in this table.

- Sovereign Rating Table (**STG_SOVEREIGN_RATING_DETAILS**)
  - Credit Rating for all countries is captured in this table.

7.1.1.2   Processing Steps

Banks obtain Credit Ratings from different sources and these are provided as input in the application through the rating tables mentioned in the preceding list.

This is handled in the sub-process T2T RATING_RECLASSIFICATION_POPULATION in **APRA Other Reclassifications** Process.

The application re-classifies the rating information to APRA Specific standard ratings. The out-of-box application supports the Fitch / Moodys / S&P and DBRS Credit Rating Reclassification for Long Term and Short Term Ratings.

This is handled in the rule Credit Rating Reclassification in **APRA Other Reclassifications** Process.

The Rating Reclassification lookup table (**FSI_RATING_CLASSIFICATION**) is used to lookup Reclassified Standard Ratings so that the Reclassification Rule is not repeated for each of the Rating Processing Tables.

Ratings are populated from the stage tables (for example, **STG_PARTY_RATING_DETAILS**) to FSI tables (for example, **FSI_PARTY_RATING_DETAILS**) using the lookup table (**FSI_RATING_CLASSIFICATION**) to obtain a Reclassified Rating.

Ensure that all the columns as indicated in the DL Specs are mandatorily populated with data. For example, in the Stage Party Rating Details (**STG_PARTY_RATING_DETAILS)** table: Rating source code (**V_RATING_SRC_CODE**), Party Code (**V_PARTY_CD**), Purpose (**V_PURPOSE**) are required to be populated. The purpose code is to indicate whether the rating is domestic or foreign. If any other rating is provided, then the exposure is considered unrated.

7.1.1.3   Data Population

Credit Risk Exposures are updated in the application for all the product types through their respective input tables known as Product Processors. Main categories of Credit Risk Banking exposures, along with their respective table names that are used as an input, are as follows:

Table 8: Categories of Credit Risk Banking Exposures and their Tables

Product	Source Product Processor
Assets Sold	STG_ASSETS_SOLD
Bills	STG_BILLS_CONTRACTS
Credit Cards	STG_CARDS
Guarantees	STG_GUARANTEES
Lease Contracts	STG_LEASE_CONTRACTS
Letters of Credit	STG_LC_CONTRACTS
Line of Credit	STG_CREDIT_LINE_DETAILS
Commitment Contracts	STG_COMMITMENT_CONTRACTS
Loans	STG_LOAN_CONTRACTS
Overdraft	STG_OD_ACCOUNTS

There is a data population about the mitigants, which cater to all the types of mitigants like collateral, guarantee, and credit derivatives. There is one data population about the Counter-Guarantee for the guarantor.

Table 9: Table for Mitigant and Counter Guarantee Data Population

Product	Source Product Processor
Mitigants – Collateral, Guarantee, Credit Derivatives	STG_MITIGANTS
Counter Guarantee	STG_MITIGANT_COUNTER_GUARANTEE

There is a data population about the mapping between the Exposures and the Mitigants.

Table 10: Data Population between Exposures and Mitigants

Product	Source Table
Mapping for Exposures and Mitigants	STG_ACCOUNT_MITIGANT_MAP
Mapping for Guarantee and Counter Guarantee	STG_MITIGANT_CNTR_GUAR_MAPPING

Processing table details

All Credit Risk Banking Exposures are loaded into the table, FSI Cap Banking Exposures (FSI_CAP_BANKING_EXPOSURES) where further processing happens for this portfolio of exposures till the computation for Pre-Credit Risk Mitigation process. This is handled in the process Banking Data Population.

Banking Retail Data Population

There is a data population for Retail Exposures which picks up relevant exposures from the Product tables and populates the same into FSI Cap Retail Exposures table FSI_CAP_BANK_RETAIL_EXP table. This is handled in the Banking Retail Related Data Population Sub-Process within the Banking Post Crisis for Data Population. Based on the run definition the user can choose to Allow Residential Property under construction to be treated under a completed property or not.

Unhedged Exposure Data Population

The Unhedged Foreign Currency Exposures are affected by the volatility in Exchange Rate Movements. These impact the capacity of the holders to fulfill their credit obligations towards the Banks and therefore result in default losses and thereby affects the complete financial system.

The Unhedged Fund Data Population picks up relevant exposures based on the Unhedged Indicator assignment. The unhedged fund split is handled in BANKING_EXPOSURE_SPLIT_RW_POP and BANKING_ADDITIONAL_SPLIT_RW_POP.

Unhedged Fund Data is input in Stage Hedge Portfolio Master Table (STG_HEDGE_PORTFOLIO_SET_MASTER) which is populated to dim Hedge Portfolio Table (DIM_HEDGE_PORTFOLIO_SET). The Stage Hedge Portfolio Master Table (STG_HEDGE_PORTFL_SET_ACCT_MAP) maps the exposures with the Hedging Sets.

This is handled in the Additional Banking Exposure Population Sub-Process within the Banking Post Crisis for Data Population.

7.1.1.4   Shareholding Percent Multiplication

Shareholding Percent Multiplication for common entity-level data is a part of Common Data Processing (PMFAPR001) Process. In this, the application updates the Shareholding Percentage against each entity is updated with the value of 1 as the Shareholding Percent and for each Child Entity, the percentage is based on the Parent's Holding Percentage as specified for each Child in fact Entity Shareholding Percent Table (FCT_ENTITY_SHR_HLD_PERCENT).

Shareholding Percent Multiplication for exposure level is part of each portfolio as well. In this process, the application multiplies the Entity Shareholding Percentage for that entity concerning parent entity against exposure amounts, undrawn amount, and provision amount for that exposure and updates the same.

This is handled in the sub-process BNK_SHAREHOLDING_CALCULATION_STD of the process APRA Post Crisis Banking Data Processing - STD.

7.1.1.5   Common Reclassification Rules

The application reclassifies the bank's product types and party types to standard product and party types. Based on the standard product and party type, the asset class for each exposure is arrived at. Similarly, the application does Reclassification for mitigant based on its mitigant types and reclassifies it to standard mitigant types.

Ensure that all products and party type and mitigants which are Bank-specific are reclassified, as part of the setup activity. If they are not reclassified, the treatment might not happen as expected by the regulator.

Product Type Reclassification

Product types used by the Reporting Bank as input data are reclassified to standard product types as recommended in the Accord. The product types after reclassification are stored as Basel Product Types. For Example, Housing Loan is reclassified as Residential Mortgage Exposure.

This is handled in the Basel Product Type Reclassification which is part of the COMMON_RECLASSIFICATION process.

Party Type Reclassification

Similar to the product type, the customer type (which is stored as counterparty type) is also reclassified as standard counterparty type. The customer information is expected in the Stage Party Master (STG_PARTY_MASTER), and this also includes the Party Type based on the Stage Party Type Master (STG_PARTY_TYPE_MASTER).

Party Type Reclassification Rules handle reclassification for customer types. For Example, an Individual is reclassified as Retail.

This is handled in the Basel Party Type Classification which is part of the APRA Other Reclassifications Process.

Other Reclassification

As part of the Reclassification Rules, any other data which is being brought inside the application like seniority, transaction type, and so on also get reclassified into OFSAA-specific Values. This is also mandatory to be performed, otherwise, the data is not available for processing as required by the regulator. This happens as part of the process **COMMON_RECLASSIFICATION**.

7.1.1.6   Asset Reclassification Rules

Based on Basel Product Type and standard Counterparty Type, an asset class is formed by the application. This asset class is used for Data Processing. The Asset Class is the same as specified in the accord.

For example, Standard Counterparty is corporate non-SME and Corporate SME, the Asset Class is corporate. For Basel product type Residential Mortgage Exposure, the asset class is Claims Secured by Residential Real Estate.

The asset class for all mitigants is reclassified based on their standard mitigant types and standard issuer type. This happens in the BNK_RECLASSIFICATION_STD sub-process of the process Post Crisis Banking Data Processing.

7.1.1.7   Pre-mitigation Calculations

Based on the asset class, the application calculates the Pre-Credit Risk Mitigation (CRM) Exposure at Default (EAD) for each exposure. This value signifies the maximum loss that the bank can suffer, in case of default on this exposure, before considering any mitigation effects.

Some exposures can be hedged against credit risk through various mitigants such as guarantees, collaterals, credit derivatives, and so on. These provide mitigation to credit risk and must be considered while computing Credit RWA, as per the Accord. Therefore, the application calculates the pre-mitigation exposure amount and post-mitigation exposure amount.

The application also computes pre-mitigation risk-weighted assets (Pre CRM RWA) and post-mitigation risk-weighted assets (Post CRM RWA) by multiplying the respective EAD by risk weight. The risk weight is arrived at, by considering the credit rating of the exposures and mitigants as per the guidelines.

7.1.1.7.1   Exposure at Default Amount Calculation

Credit Conversion Factor (CCF Assignment)

This is an input required for converting the off-balance sheet component of the exposure (undrawn portion associated with an on-balance sheet or off-balance sheet product, or the exposure amount of an off-balance sheet product). This is based on the supervisory provided values and is determined based on the product type and the maturity associated with the exposure.

This populates the Drawn CCF (for the CCF to be assigned to the exposure amount of the off-balance sheet product) and the Undrawn CCF (for the CCF to be assigned to the undrawn portion of the on balance sheet and off-balance sheet exposures).

This happens in the process PCR CCF Assignment in Banking Data Processing – STD Process.

Pre CRM EAD

Exposure at Default (EAD) is calculated for all the products. This is being computed using the Exposure Amount (EOP Balance of the Exposure), Undrawn Amount of the Exposure (Undrawn Amount), and the Credit Conversion Factor for the Off-Balance sheet Amount (CCF). This is computed for the on-balance sheet products separately, and the off-balance sheet products separately.

This happens in the sub-process BNK_PRE_CRM_EAD_COMPUTATION_STD in Banking Data Processing – STD process.

Post CRM EAD

Through the CRM Process, the bank considers the effect of the mitigation and calculates the Post-Mitigation Exposure at the default amount. This signifies the maximum loss that the Bank can suffer in case of default on this exposure, after considering the effects of the mitigation. This will be the EAD of the Exposure Pre-Mitigation less the covered portion of the mitigant.

7.1.1.7.2 Multiple Assessment

For exposures with multiple ratings, risk weight assignment is based on multiple assessment processes. For each exposure, the final rating is the worst of the best two ratings assigned to the exposure. In case of exposure having multiple ratings associated with the same risk weight and belonging to an equivalent rating, the same will be assigned to the exposure. In the case of exposure having only a single rating, the single rating and corresponding risk weight will be considered for the exposure.

The risk weight corresponding to this rating is then assigned to the exposure.

Exposures for multiple rating assessments are first moved into the table FSI Multiple Rating Processing (FSI_MULTIPLE_RATING_PROCESSING) wherein the ranking and final selection of which rating to use takes place.

This happens in the sub-process of BNK_MULTIPLE_RATING_ASSESSMENT_DATA_POPULATION, wherein the data for the multiple assessment processing gets populated into the FSI table.

In the task BNK_MULTIPLE_RATING_ASSESSMENT, the identification of the multiple rating for the exposure happens, and the BNK_ RISK_WEIGHT_METHODOLOGY_ASSIGNMENT assigns the Actual Risk Weight and the final rating assignment happens for the exposures.

All the above fall is a part of the Banking Data Processing – STD Process.

7.1.1.7.3 Issue Issuer Assessment

For all the exposures that remain unrated after the multiple assessment processes, the issue issuer process is performed. This happens in the Issue Issuer Assessment sub-process (BNK_BNK_ISSUE_ISSUER_ASSESSMENT) in the ECRA flow of the run. In the ECRA flow, the unrated exposures are assigned a reference rating based on the reference issue available or the rating of the party, whichever is applicable. These unrated exposures are assigned a risk weight based on the reference rating.

The reference rating is expected to be provided by the bank for the corresponding counterparty that is unrated in the Stage Issue Details (STG_ISSUE_DETAILS). The reference issue must have the seniority also provided as that will be used for identifying whether the reference is an eligible issue for this assessment. For unrated Banking Exposures, the application does an issue-issuer assessment to infer a rating of the Unrated Exposures, based on the rating of a similar instrument (referred to as reference issue hereafter) issued by the same issuer. The reference issue is used only when it is of the same currency as the exposure and the exposure is senior or equivalent to the same. For the unavailable reference issue, the party rating is used. In the case of the party also being unrated, the exposure remains unrated. The application also considers the Domestic and Foreign Ratings and Long term and Short term ratings to be used for the sake of issue issuer assessment.

Additionally, the application populates whether the exposure is LT rated or ST rated, based on the rating assigned to the exposure.

7.1.1.7.4   Risk Weight Assignment Rules

The ECRA Approach options for risk-weighting are selected during Run definition to update the required calculations as allowed by the specific jurisdiction. Based on the run definition selected the Banking Process passes through the Risk Weighting Approach. This is handled in Banking Post Crisis Risk Weight Assignment- ECRA. For more details on the options, see the Run Management Section.

The Risk Weight Assignment rules in Banking Post Crisis for Data Processing is only on basis of ECRA Approach.

Figure 31: Process flow for Risk Weight Assignment Rules

Risk Weight Assignment to all Exposures

Risk Weight is assigned based on asset class and the credit rating as per Basel Guidelines. The Risk Weight Rules operate on the Risk Weight Table (FSI_RW_MAP_MASTER). Highly rated exposures are allocated

low-risk weight and poorly rated exposures are allocated high-risk weights. If exposure has more than one rating (rated by more than one agency), then the final rating is assigned based on multiple assessments. The application updates the risk weights against the exposures directly, when ratings are not considered.

Options for risk-weighting are selected during Run definition if the Run Management UI is used, to update the required calculations as allowed by the specific jurisdiction. For more details on the options, see Run Management section.

Risk Weight Assignment takes place in the sub-process Post Crisis Banking Data Processing – STD Process.

Risk Weight for Retail Exposures

There is a data population for Retail exposures which picks up relevant exposures from the Product Tables and populates the same into the FSI Cap Bank retail exposures table (FSI_CAP_BANK_RETAIL_EXP). This is handled in the Banking Retail Related Data Population sub-process within the Banking Post Crisis for Data Population.

Risk Weight for Residential Real Estate Exposures

Any residential real estate is risk-weighted, provided the repayment of the mortgage does not depend on the cash flows generated by the property and repayment is dependent on the credit worthiness of repayment capacity of the borrower instead of the property. The Risk weight treatment is stored in the FSI cap bank retail exposures table (FSI_CAP_BANK_RETAIL_EXP) and Fsi cap bank exposures table (FSI_CAP_BANKING EXPOSURES) handled in sub process PCR Retail Repayment Materially Dependent based Risk Weight Assignment in Post Crisis Banking Data Processing

Risk Weight for Commercial Real Estate Exposures

Commercial Real Estate Exposures are exposures secured by any immovable property which do not qualify for Residential Real Estate Treatment. FSI Cap Bank Retail Exposures Table (FSI_CAP_BANK_RETAIL_EXP) and FSI cap bank exposures table (FSI_CAP_BANKING EXPOSURES) handled in sub process PCR Retail Repayment Materially Dependent based Risk Weight Assignment in Post Crisis Banking Data Processing.

Risk Weight for Past Due Exposures

The application identifies the past due exposures on the basis of the defaulted flag. In certain jurisdictions, wherein there is an option to consider even 150% RW exposures as defaulted exposures, the same also gets considered for the past due treatment. The risk weight for the past due exposures are assigned based on the portion of the exposure that is unsecured and the provision coverage ratio for the same, this gets handled in the sub process BNK_PAST_DUE_TREATMENT_STD in Banking Data Processing – STD process.

7.1.1.7.5 RWA Calculations

The RWA is calculated as the Pre-mitigation EAD multiplied by the Pre-Mitigation Risk Weight.

This is handled under the sub-process BNK_PRE_CRM_RISK_WEIGHTED_ASSET_CALCULATION_STD in Banking Data Processing – STD process.

7.1.2   Investment Portfolio

7.1.2.1   Rating Population

The data on ratings is captured in the following rating specific tables:

- Instrument Rating Table (**STG_INSTRUMENT_RATING_DETAILS**)

  - Ratings for investment exposures subject to credit risk (one that is in **STG_INVESTMENTS**) and mitigants are captured in this table.

- Party Rating Table (**STG_PARTY_RATING_DETAILS**)

  - Ratings for the customer are captured in this table.

- Sovereign Rating Table (**STG_SOVEREIGN_RATING_DETAILS**)

  - Credit Rating for all countries is captured in this table.

- External Underlying Exposures Rating Table (**STG_EXT_ULY_ACCT_RATING_DTL**)

  - Credit Rating provided by an External Agency for all underlying exposures is captured in this table.

7.1.2.2   Processing Steps

Banks obtain credit ratings from different sources and these are provided as input in the application through the rating tables mentioned in the preceding list.

The rating reclassification lookup table (**FSI_RATING_CLASSIFICATION**) is used to lookup reclassified standard ratings so that the reclassification rule is not repeated for each of the rating processing tables. Ratings are populated from the stage tables (for example, **STG_PARTY_RATING_DETAILS**) to FSI tables (for example, **FSI_PARTY_RATING_DETAILS**) using the lookup table (**FSI_RATING_CLASSIFICATION**) to obtain a reclassified rating.

Ensure that the following columns are mandatorily populated with data in the **STG_PARTY_RATING_DETAILS** table: Rating source code (**V_RATING_SRC_CODE**), Party Code (**V_PARTY_CD**), Original Credit Rating Indicator (F_ORIGINAL_CREDIT_RATING_IND), Purpose (**V_PURPOSE**): In this field whether the rating is a domestic rating or foreign rating must be indicated. If any other rating is provided, then the exposure is considered as unrated.

Data Population

The following are the Preprocessing Steps:

Credit Risk Exposures are updated in the application for all the product types through their respective input tables known as Product Processors. Main categories of Credit Risk Investment Exposures, along with their respective table names that are used as an input, are as follows:

Table 11: Type of Credit Risk Investment Exposures and their Table Names

Product	Source Product Processor
Investment Products:	STG_INVESTMENTS
Money Market Instruments	STG_MM_CONTRACTS
Spot Forex Transactions	STG_FX_CONTRACTS
Fixed Assets	STG_FIXED_ASSETS

7.1.2.3 Data Population

There is a Data Population about the mitigants, which cater to all the types of mitigants like collateral, guarantee, and credit derivatives. There is one data population about the Counter-Guarantee for the guarantor.

Table 12: Data Population for Mitigants and Counter-Guarantee

Product	Source Product Processor
Mitigants – Collateral, Guarantee, Credit Derivatives	STG_MITIGANTS
Mitigant Master Table	STG_MITIGANT_MASTER

There is a data population about the mapping between the Exposures and the Mitigants.

Table 13: Data population for the mapping between exposures and mitigants.

Product	Source Table
Mapping for Exposures and Mitigants	STG_ACCOUNT_MITIGANT_MAP

Processing Table Details

All Credit Risk Investment Exposures are loaded into the table, FSI CAP Investment Exposures, FSI_CAP_INVESTMENT_EXPOSURES where further processing happens for this portfolio of exposures till the computation pertaining to Pre Credit Risk Mitigation Process.

This is handled in the process Investment Data Population.

7.1.2.4 Shareholding Percent Multiplication

In this, the application updates the Shareholding Percentage against each entity. The Parent Entity is updated with the value of 1 as the shareholding percent and for each Child Entity, the percentage is based on the Parent's Holding Percentage as specified for each Child in fact entity Shareholding Percent Table **FCT_ENTITY_SHR_HLD_PERCENT**.

Shareholding Percent Multiplication for exposure level is part of each portfolio as well. In this process, the application multiplies the Entity Shareholding Percentage for that entity concerning to Parent Entity against exposure amount, undrawn amount, and provision amount for that exposure and updates the same.

This is handled in the sub-process INV_SHAREHOLDING_CALCULATION_STD of the process APRA Post Crisis Investment Data Processing - STD.

7.1.2.5   Common Reclassification Rules

The application reclassifies the bank's product types and party types to standard product and party types. Based on the standard product and party type, the Asset Class for each exposure is arrived at. Similarly, the application does reclassification for mitigant based on its mitigant types and reclassifies it to standard mitigant types.

Ensure that all products and party type and mitigants which are bank-specific are reclassified, as part of the setup activity. If they are not reclassified, the treatment might not happen as expected by the regulator.

1. **Product Type Reclassification**

    Product types used by the Reporting Bank as input data are reclassified to standard product types as recommended in the Accord. The product types after reclassification are stored as Basel Product Types. For Example, Fixed Rate Bond is reclassified as Debt Securities.

    This is handled in the Basel Product Type Reclassification which is part of the COMMON_RECLASSIFICATION Process.

2. **Party Type Reclassification**

    Similar to the product type, the customer type (which is stored as Counterparty Type) is also reclassified as the Standard Counterparty Type. The customer information is expected in the Stage Party Master (STG_PARTY_MASTER), and this also includes the Party Type based on the Stage Party Type Master (STG_PARTY_TYPE_MASTER).

    Party Type Reclassification Rules handle reclassification for customer types. For Example, a Housing Finance Company is reclassified as Corporate.

    This is handled in the **Basel Party Type Classification** which is part of **APRA Other Reclassifications** Process.

3. **Rating Reclassification**

    As part of the Rating Reclassification, it is expected that the bank reclassifies the ratings into the different Basel Credit Rating of AAA Equivalent, AA Equivalent and so on. This gets handled in the rule **Credit Rating Reclassification** of the process **APRA Other Reclassifications**.

4. **Other Reclassification**

    As part of the Reclassification Rules, any other data which is being brought inside the application like seniority, transaction type, and so on also get reclassified into OFSAA Specific Values. This is also mandatory to be performed. Otherwise, data is not available for processing as required by the regulator.

    This happens as part of the process **COMMON_RECLASSIFICATION.**

7.1.2.6   Asset Reclassification Rules

Based on Basel Product Type and Standard Counterparty Type, an Asset Class is formed by the application. This Asset Class is used for Data Processing. The Asset Class is the same as specified in the accord.

For example, Standard Counterparty is Corporate non-SME and Corporate SME, the Asset Class is corporate. For Basel Product type Gold, the asset class is Gold.

The Asset Class for all mitigants is reclassified based on their standard mitigant types and standard issuer type.

This happens in the sub-process **APRA Post Crisis Investments Reclassification** within the process **APRA Post Crisis Investment Data Processing**.

The Asset Class gets clubbed under different Asset Class categories as relevant for the Asset Classes. This is used for regulatory treatment. This particular reclassification happens in the "**FSI_BASEL_ASSET_CATEGRY_MAP_DATA_POP"** task of the process "**OTHER_DATA_POPULATION**".

7.1.2.7   Pre-mitigation Calculations

Based on the Asset Class, the application calculates the Pre-Credit Risk Mitigation (CRM) Exposure at Default (EAD) for each exposure. This value signifies the maximum loss that the Bank can suffer, in case of default on this exposure, before considering any mitigation effects.

Some exposures can be hedged against credit risk through various mitigants such as guarantees, collaterals, credit derivatives, and so on. These provide mitigation to credit risk and must be considered while computing Credit RWA, as per the Accord. Therefore, the application calculates the pre-mitigation exposure amount and post-mitigation exposure amount.

The application also computes Pre-Mitigation Risk-Weighted Assets (Pre CRM RWA) and Post-Mitigation Risk-Weighted Assets (Post CRM RWA) by multiplying the respective EAD by Risk Weight. The risk weight is arrived at, by considering the credit rating of the exposures and mitigants as per the guidelines.

7.1.2.7.1   Exposure at Default Amount Calculation

Pre CRM EAD

Exposure at Default (EAD) is calculated for all the products. This is being computed using the Exposure Amount (EOP Balance of the Exposure and adjusting for Provision amount, if any).

This happens in the process **APRA Investment Pre CRM EAD Computation - STD** of the process **APRA Post Crisis Investment Data Processing – STD** Process.

Post CRM EAD

Through the CRM Process, the bank considers the effect of the mitigation and calculates the Post-Mitigation Exposure at the default amount. This signifies the maximum loss that the Bank can suffer in case of default on this exposure, after considering the effects of the mitigation. This will be the EAD of the Exposure Pre-Mitigation less the covered portion of the mitigant.

7.1.2.7.2   Multiple Assessment

For exposures with multiple ratings, Risk Weight Assignment is based on multiple assessment processes. For each exposure, the final rating is the worst of the best two ratings assigned to the exposure.

The Risk Weight corresponding to this rating is then assigned to the exposure.

Exposures for multiple rating assessments are first moved into the table FSI Multiple Rating Processing (FSI_MULTIPLE_RATING_PROCESSING) wherein the ranking and final selection of which rating to use takes place.

This happens in the sub-process of **INV_MULTIPLE_RATING_ASSESSMENT_DATA_POPULATION**, wherein the data for the multiple assessment processing gets populated into the FSI table. **MULTIPLE_RATING_ASSESSMENT**, wherein the identification of the multiple rating for the exposure happens, and the

APRA Post Crisis Reforms Multiple Assessment wherein the actual Risk Weight and final rating assignment occurs for the exposures.

All the above sub-process fall under the process APRA Post Crisis Investment Data Processing - STD.

7.1.2.7.3   Issue Issuer Assessment

For all exposures which remain unrated after the multiple assessment processes, the issue issuer process is performed. This happens in the Issue Issuer Assessment sub-process **APRA Investment Issue Issuer Assessment**. In this case, the unrated exposures are assigned a reference rating based on the reference issue available or the rating of the party, whichever is applicable. These unrated exposures are assigned a risk weight based on the reference rating.

For unrated Non-Securitized Exposures, the application does an Issue-Issuer Assessment to infer a rating of the Unrated Exposures, based on the rating of a similar instrument (referred to as reference issue hereafter) issued by the same issuer. The reference issue is used only when it is of the same currency as the exposure and the exposure is senior or equivalent to the same. For the unavailable reference issue, the party rating is used. In the case of the party also being unrated, the exposure remains unrated. Additionally, the application populates whether the exposure is LT rated or ST rated, based on the rating assigned to the exposure.

7.1.2.7.4   Risk Weight Assignment Rules

Non-Sec Exposures Risk Weight

Risk Weight is assigned based on asset class and the credit rating as per Basel Guidelines. The Risk Weight Rules operate on the Risk Weight Table (**FSI_RW_MAP_MASTER**). Highly rated exposures are allocated low-risk weight and poorly rated exposures are allocated high-risk weights.

If exposure has more than one rating (rated by more than one agency), then the final rating is assigned based on multiple assessments. The application updates the risk weights against the exposures directly, when ratings are not considered.

Options for risk-weighting are selected during Run Definition if the Run Management UI is used, to update the required calculations as allowed by the specific jurisdiction. For more details on the options, see the Run Management Section.

This is handled under the sub-process: **APRA Investment Post Crisis Risk Weight Assignment – ECRA** and **APRA Investment Debt Equity Risk Weight Assignment** in the **APRA Post Crisis Investment Data Processing – STD** Process.

Specific Standard Party treatment

The application has a pre-determined set of Specific Standard Parties. The list of Standard Parties covered are as follows, and the Party ID mentioned are just samples, that can be changed to meet the Bank's logic for the Party ID:

Table 14: List of Standard Parties

V_STD_PARTY_CODE	V_STD_PARTY_NAME	V_PARTY_ID
IBRD	International Bank for Reconstruction and Development	P11
IFC	International Finance Corporation	P12
ADB	Asian Development Bank	P13
AFDB	African Development Bank	P14
EBRD	European Bank for Reconstruction and Development	P15
IADB	Inter-American Development Bank	P16
EIB	European Investment Bank	P17
EIF	European Investment Fund	P18
BIB	Nordic Investment Bank	P19
CDB	Caribbean Development Bank	P20
IDB	Islamic Development Bank	P21
CEDB	Council of Europe Development Bank	P22
IFFI	International Finance Facility for Immunization	P23
MIGA	Multilateral Investment Guarantee Agency	P24

For experiences to these exposures, the asset class determined earlier gets overridden to mainly International Organizations and Multilateral Development Bank (Zero Risk Weight) takes place. These exposures will be assigned a risk weight of 0%.

This treatment of Standard Parties is handled in the sub-process **Investments RW for MDB Exposures – ECRA** in the process **APRA Investment Post Crisis Risk Weight Assignment - ECRA** .

7.1.2.7.5 RWA Calculations

The RWA is calculated as the Pre-mitigation EAD multiplied by the Pre-Mitigation Risk Weight.

This is handled under the sub-process **INV_PRE_CRM_RISK_WEIGHTED_ASSET_CALCULATION_STD** under the process **APRA Post Crisis Investment Data Processing - STD**.

Risk Weight Assignment of Covered Bonds

Covered bonds are debt securities issued by credit institutions and secured by a pool of mortgage loans or credit towards the public sector. The proceeds derived from the issuance of Covered Bonds are invested by the Issuer in conformity with the law and during the validity of such bonds the underlying of such bonds must be capable of covering the claims attached to such Bonds. These covered bonds qualify for a preferential treatment only if they qualify for the treatment based on the criteria for the underlying exposures. If they do not qualify for the preferential treatment, they will be treated based on the issuer asset class, as any other bond instrument.

The underlying assets must satisfy all the criteria with respect to eligible asset class ,outstanding amount and other operational criteria given in the accord to make the debt securities assigned Covered Bond status and eligible for preferential treatment. If operational criteria are not met they will not be eligible for preferential treatment.

This is handled in the sub process Covered Bonds Exposures Outstanding Nominal Amount Percentage Calculation, Covered Bond Underlying Assets Eligibility Assessment and Investment Exposure Eligible Preferential Treatment Flag Assignment in the process APRA Post Crisis Covered Bond Underlying Processing

If any of the criteria are not met, then they will not qualify for the preferential treatment.

For example, below is a criteria based on party of the underlying exposure.

The underlying of the covered bonds belonging to the below category are eligible for preferential treatment:

Exposures to Sovereign, Central Banks

Below is another criteria based on the product to which the underlying exposure has invested

The underlying of the covered bonds belonging to the below category are eligible for preferential treatment

Loans secured by Commercial Real Estate meeting the eligibility criteria and LTV (Loan to Value) of 60% or less.

All covered bond exposures for which Preferential Treatment criteria are met will get Asset Class Stamping of CB (Covered Bond).

Rated CB exposures will assign risk weight based on the rating while unrated CB Exposures will use the rating of the issuer of the financial instrument.

Covered Bonds related tasks related to assignment of ratings and risk weight are found in the process APRA Post Crisis Reforms Covered Bonds.

7.2   Counterparty Credit RWA

7.2.1   Derivatives Portfolio

Counterparty Credit RWA is the calculation of the Counterparty Credit Risk Exposures. This includes the Derivative Portfolio and the Securities and Financing Transaction Portfolio. This also includes the exposures in both Banking Book and Trading Book.

The Counterparty Credit Exposures also undergo additional RWA Calculation in the form of Credit Valuation Adjustment (CVA). The mark to Market Counterparty Credit Losses or the spread migration risk

is captured with CVA, which was not directly capitalized before. CVA is the difference between the Risk-free Portfolio Value and the true Portfolio Value that considers the possibility of the counterparty's default. In other words, CVA is the market value of Counterparty Credit Risk.

7.2.2   Derivatives Portfolio

7.2.2.1   Rating Population

The Data on ratings is captured in the following rating specific tables:

- Party Rating Table (**STG_PARTY_RATING_DETAILS**)

  - Credit ratings for all are captured in this table.

- Sovereign Rating Table (**STG_SOVEREIGN_RATING_DETAILS**)

  - Credit Rating for all countries is captured in this table.

  - Instrument Rating Table (STG_INSTRUMENT_RATING_DETAILS)

Ratings for all instruments are captured in this table. Even the posted collateral (Placed Collateral) and received collateral (Mitigants) related ratings are captured in this table and this is handled in the process DRV_INSTRUMENT_RATING_POPULATION.

7.2.2.2   Processing Steps

Banks obtain credit ratings from different sources and these are provided as an input in the application through the rating tables mentioned in the preceding list.

This is handled in the process **R**ATING_RECLASSIFICATION_POPULATION.

The application re-classifies the rating information to BIS Specific Standard Ratings. The out-of-box application supports the Fitch / Moodys / S&P and DBRS Credit Rating Reclassification for Long Term and Short-Term ratings.

This is handled in the process **C**redit Rating Reclassification.

The rating reclassification lookup table (**FSI_RATING_CLASSIFICATION**) is used to lookup reclassified standard ratings so that the reclassification rule is not repeated for each of the rating processing tables.

Ratings are populated from the stage tables (for example, **STG_PARTY_RATING_DETAILS**) to FSI tables (for example, **FSI_PARTY_RATING_DETAILS**) using the lookup table (**FSI_RATING_CLASSIFICATION**) to obtain a reclassified rating.

Ensure that all the relevant columns as indicated in the DL Specs are mandatorily populated with data. For example, in the Stage Party Rating Details (**STG_PARTY_RATING_DETAILS)** table: Rating source code (**V_RATING_SRC_CODE**), Party Code (**V_PARTY_CD**), Purpose (**V_PURPOSE**) are required to be populated. The purpose code is to indicate whether the rating is a domestic rating or a foreign rating. If any other rating is provided, then the exposure is considered unrated.

7.2.2.3   Data Population

Pre-processing Steps

Credit Risk Exposures are updated in the application for all the product types through their respective input tables known as Product Processors. Main categories of Counterparty Credit Risk Exposures, along with their respective table names that are used as an input, are as follows:

Table 15: Data Population for Credit Risk Exposures

Product	Source Product Processor
Swaps	STG_SWAPS_CONTRACTS
Futures	STG_FUTURES
Options	STG_OPTION_CONTRACTS
Credit Derivatives	STG_CREDIT_DERIVATIVES
Forwards	STG_FORWARDS

There is a Data Population about the placed collateral and central counterparty details, which are required for the cleared transaction and default fund contribution treatment.

Table 16: Data Population for Placed Collateral and Central Counterparty Details

Product	Source Product Processor
Placed Collateral	STG_PLACED_COLLATERAL
Default Fund Contribution	STG_CCP_DETAILS

There is a Data Population about the mitigants that adheres to the applicable mitigant type like collateral received for the derivatives

Table 17: Data Population for Mitigants

Product	Source Product Processor
Mitigants – Collateral received	STG_MITIGANTS

There is a Data Population about the mapping between the exposures and the mitigants. And one data population about the mapping between the exposures and the placed collateral

Table 18: Data Population for Mapping between Exposures and Mitigants

Product	Source Table
Mapping for Exposures and Mitigants	STG_ACCOUNT_MITIGANT_MAP
Mapping for Exposures and Placed Collateral	STG_ACCT_PLACED_COLL_MAP

Processing table details

All Counterparty Credit Risk related derivative exposures are loaded into the table, FSI Cap Derivative (FSI_CAP_DERIVATIVES) where further processing happens for this portfolio of exposures till they are moved to the Netting set granularity. This is handled in the process Derivative Data Population process, under sub-processes:

- DERIVATIVE_SWAPS_EXPOSURE_DATA_POPULATION

- DERIVATIVE_FUT_EXPOSURE_DATA_POPULATION

- DERIVATIVE_OPT_EXPOSURE_DATA_POPULATION

- DERIVATIVE_CREDIT_DERIVATIVES_DATA_POPULATION

All placed collateral that the bank has placed that are not specific to Securities Financing Transactions exposures are loaded into the table, FSI_ PLACED_COLLATERAL

All the collateral that the bank has received, as part of the Derivative transactions, are loaded into the table, FSI_CAP_MITIGANTS.

7.2.2.4 Shareholding Percent Multiplication

Shareholding Percent Multiplication for common entity-level data is a part of BIS Common Data Processing (PMFCOM020) Process. In this, the application updates the shareholding percentage against each entity. The Parent Entity is updated with the value of 1 as the Shareholding Percent and for each Child Entity, the percentage is based on the Parent's Holding Percentage as specified for each Child in fact entity shareholding percent table (FCT_ENTITY_SHR_HLD_PERCENT).

Shareholding Percent Multiplication for exposure level is part of each portfolio as well. In this process, the application multiplies the entity shareholding percentage for that entity for Parent Entity against exposure amount, undrawn amount, and provision amount for that exposure and update the same.

This is handled in the sub-process DRV_SHAREHOLDING_CALCULATION_STD of the Derivatives Data Processing.

7.2.2.5 Common Reclassification Rules

The application reclassifies the bank's product types and party types to standard product and party types. Based on the standard product and party type, the asset class for each exposure is arrived at. Similarly, the application does reclassification for mitigant based on its mitigant types and reclassifies it to standard mitigant types.

Ensure that all products and party type and mitigants which are bank-specific are reclassified, as part of the setup activity. If they are not reclassified, the treatment might not happen as expected by the regulator.

Product Type Reclassification

Product types used by the reporting bank as input data are reclassified to standard product types as recommended in the Accord. The product types after reclassification are stored as Basel product types. For Example, Interest Rate Futures is reclassified as Futures

This is handled in the Basel Product Type Reclassification which is part of the Derivatives Multiple Assessment Risk Weight Assignment.

Party Type Reclassification

Similar to the product type, the customer type (which are stored as counterparty type) are also reclassified as standard counterparty type. The customer information is expected in the Stage Party Master (STG_PARTY_MASTER), and this also includes the Party Type based on the Stage Party Type Master (STG_PARTY_TYPE_MASTER).

Party type Reclassification Rules handle reclassification for customer types. For Example, a Small business entity is reclassified as Corporate SME

This is handled in the Party Type Reclassification which is part COMMON_RECLASSIFICATION process.

Instrument Type Reclassification

Bank Instrument types used by the Reporting Bank as input data are reclassified to Instrument types. The instrument types after reclassification are stored as Instrument types. For Example, Interest Rate Future Contract is reclassified as Interest Rate Futures. This happens as part of the process COMMON_RECLASSIFICATION Process.

Mitigant Reclassification

For mitigants the application reclassifies the mitigant type to the standard mitigant type like the debt securities.

The reclassification tasks are present in the MITIGANT_TYPE_RECLASSIFICATION.

7.2.2.6 Pre-mitigation Calculations - Exposure at Default Amount Calculation

Pre-mitigation Exposure at Default can be calculated as per Standardized Approach of Calculations (SA CCR).

The Standardized Approach for Counterparty Credit Risk (SA-CCR) is an alternative for Standardized Method (SM) and Current Exposure Method (CEM) for Counterparty Credit Risk (CCR) in Credit Risk.

Banks can use the SA-CCR Approach while they follow Standardized or IRB Approaches for credit risk. The SA-CCR Approach is applicable for Over the Counter (OTC) Derivatives, Exchange Traded Derivatives, and Long Settlement Transactions.

7.2.2.6.1 SA-CCR Method of EAD Computation

The exposures under the SA-CCR consist of two components: Replacement Cost (RC) and Potential Future Exposure (PFE). The replacement cost is mostly related to the mark to market of the derivative contract, by considering the collateral and margin agreement as relevant. The potential future exposure consists of a multiplier that allows for the partial recognition of excess collateral and an aggregate add-on which is inside the sub-process: DERIVATIVES_SACCR_EAD_CALCULATION which is part of the Derivatives Multiple Assessment Risk Weight Assignment.

The following flowchart depicts the process flow of SA-CCR:

Figure 32: Process Flow of SA-CCR
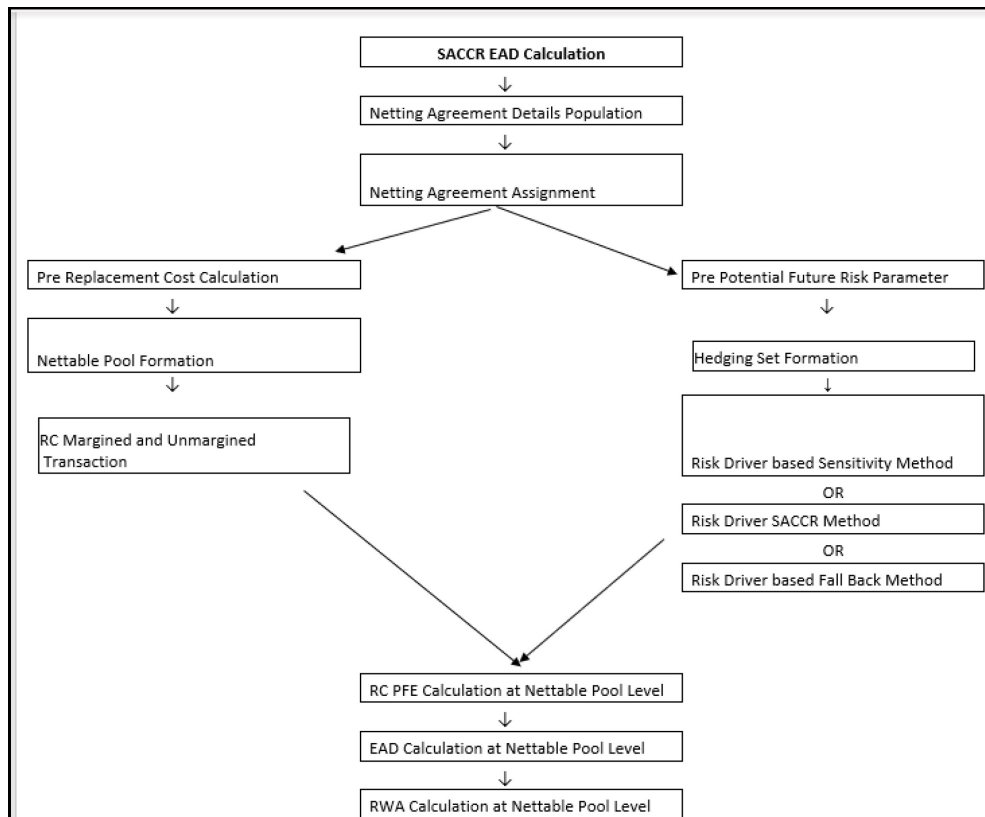
Netting Agreement

For instruments participating in netting set, the notability flag should be set as 'Y'. Instruments with the same agreement code are netted in the same netting set.

The application creates new records for the netting agreement and then populates them into the FSI Netting Agreement Details (FSI_NETTING_AGREEMENT_DETAILS) table. The netting agreements will be populated in the process NETTING_AGREEMENT_DETAILS_DATA_POP.

In the case of the contracts not being part of any netting agreement, the application considers them as part of their netting agreement or netting set, for the calculations of the different parameters.

Margin Agreement

For both RC and PFE, if one of the netting agreements has multiple Margin Agreements, then this Netting Agreement should be divided into Sub-Netting Agreements to align with the Margin Agreements. This is captured in RC_MARGINED_UNMARGINED_TRANSACTION process Placed Collateral & Mitigant – Eligibility Condition.

Placed Collateral & Mitigant - Eligiblity

The placed collateral is captured in FSI Cap Placed Collateral (FSI_CAP_PLACED_COLLATERAL) and this also moves to FSI Cap Mitigants (FSI_CAP_MITIGANTS), wherein the placed collateral and the mitigants

both undergo the same treatment. This is part of the process FSI_PLACED_COLLATERAL_DATA_POPULATION and FSI_CAP_MITIGANT_DATA_POPULATION.

The mitigant is identified as eligible are not based on the eligibility rules for CRM as mentioned in the Basel III accord. Credit rating of the collateral is considered for all mitigants types issued by all party types while deciding whether a mitigant is eligible for a particular exposure or not. Separate eligibility Rules exist for mitigants types like equity, mutual funds, or debt security, to perform these checks. For the remaining, a mitigant is marked as eligible only if its credit rating is better than the exposure to which it is providing protection and also if it is classified as senior in position. This is handled in the sub-process Mitigant Data Processing – STD Approach (FSI_CAP_MITIGANTS). Mitigant eligibility is also checked based on the original and residual maturity of the collateral. Collateral is classified as eligible only if its original maturity is more than a year and residual maturity is more than 3 months.

Placed Collateral & Mitigant – Haircut Assignment

The application assigns three kinds of mitigant haircuts, which are Volatility Haircut, FOREX Haircut, and Maturity Mismatch Haircut. Volatility Haircuts are assigned to the collateral to account for any future fluctuations in the market value of the financial collateral. Separate Rules exist in the application for various types of financial collaterals like debt securities, equity, mutual funds, and so on. When the exposure and collateral are in different currencies, the application adjusts by applying FOREX Haircut. If the residual maturity of CRM is less than the underlying credit exposure, then a maturity mismatch is applied. If there is a maturity mismatch and CRM has an original maturity of more than a year, the Maturity Mismatch Haircut is applied to adjust the value. The application assigns a Volatility Haircut using the Supervisory Haircut Method when the standardized approach is selected.

This is part of the process FSI_PLACED_COLLATERAL_DATA_POPULATION and FSI_CAP_MITIGANT_DATA_POPULATION.

Replacement Cost

The Replacement Cost (RC) is computed differently for Margined and Unmargined Netting Agreements.

All the required attributes for replacement cost are populated from the FSI Cap Derivative Exposures (FSI_CAP_DERIVATIVES) Cap Mitigants (FSI_CAP_MITIGANTS) and FSI Placed Collateral (FSI_PLACED_COLLATERAL) to the table FSI_CAP_NETTABLE_POOL wherein the replacement cost (N_REPLACEMENT_COST) calculation happens. Since there are different calculations required for the replacement cost, depending on whether it is a margined transaction or not, and depending on whether the netting set contains only a Single Margin Agreement or Multiple Margin Agreements, it happens in the table FSI_MARGINED_EAD_CALC. This is handled in the RC_MARGINED_UNMARGINED_TRANSACTION process.

In the case of contracts covered by Margin Agreement, the Initial Margin and the Variation Margin are expected at the Netting Agreement Level. The minimum transfer amount and threshold amount are also expected at the Netting Agreement Level and expected to be provided as an input in the Stage Net Exposures Tables (STG_NET_EXPOSURES).

Methods of identifying various Risk Categories and Risk Drivers

For each exposure, the banks must identify the Primary Risk Driver of the risk factors such as interest rate, foreign exchange, credit, equity, or commodity. This is crucial because the Add-on formula for each risk category is different and it depends on the nature of the risk factors. The risk categories can be identified by defining the primary risk factors of underlying exposures in the derivative contracts.

This is selected by the bank based on the Regulatory DefinitionSensitivities Based Method.

- SA-CCR Based Method

- All the Add-ons are computed for the instrument, concerning all material risk drivers are as per the SA CCR calculation. Using this, the material risk categories are identified, as the ones with the maximum absolute value of sensitivity multiplied by the risk weight. This gets handled in the process and the table.

- Fall Back Approach

  - All the Add-ons are computed for the instrument, concerning all risk drivers. Additionally, all the risk categories will be considered as the material risk driver. This gets handled in the process and the table.

Essentially, it will be one instrument that can be mapped to multiple risk categories, with one material risk driver identified for each risk category. And the resultant replacement cost will be a summation of the add-on across all the material risk categories.

The data for Risk Drivers and Categories are from the following tables

FSI Cap Risk Category Master (FSI_CAP_RISK_CATEGORY_MASTER)

FSI Cap Risk Driver Master (FSI_CAP_RISK_DRIVER_MASTER)

FSI Cap Risk Driver Map Master (FSI_CAP_RISK_DRIVER_MAP_MASTER)

Parameter Calculations for Potential Future Exposure

The parameters to be considered for the Calculation of Potential Future Exposure, which is treated under the process PRE_POTENTIAL_FUTURE_RISK_PARAMETERS,

Multiplier

The multiplier in the PFE Formula serves to reduce the add-on for over collateralization as in practice many banks hold excess collateral precisely to offset potential increases in exposure represented by the add-on.

Aggregate Add-on

The asset classes; interest rate, foreign exchange, credit, equity or commodity and a derivatives transaction is assigned to an asset class based on its primary risk driver. The add-ons for each asset class are simply aggregated.

Most derivative transactions have one primary risk driver, defined by its reference to underlying instrument.

Adjusted Notional

For interest-rate and credit derivatives, the trade-level adjusted notional is the product of the trade notional amount, converted to the domestic currency, and the supervisory duration (SD).

Supervisory Delta Adjustments

These parameters are also defined at the trade level and are applied to the adjusted notional amounts to reflect the direction of the transaction. For derivatives that are not options, the value of this parameter is +1 for long (MTM increases when the value of the primary risk factor increases) or -1 for short (MTM decreases when the value of the primary risk factor increases).

Supervisory Correlation Parameters

These parameters only apply to the PFE add-on calculation for equity, credit, and commodity derivatives. For these asset classes, the supervisory correlation parameters are derived from a single-factor model and specify the weight between systematic and idiosyncratic components.

Potential Future Exposure (PFE)

The Potential Future Exposure (PFE) is computed differently for each of the risk categories, and the final value is assigned to the netting set (stored at the FSI Cap Nettable Pool (FSI_CAP_NETTABLE_POOL).

PFE add-ons are calculated for each asset class within a netting set and then aggregated. Add-ons for an asset class require the use of hedging sets, which are transactions within a single netting set within which partial or full offsetting is recognized in the methodology.

For Interest rate derivatives hedging set consists of all derivatives, Hedging sets are further divided into maturity categories. Long and Short positions in the same hedging set are permitted to fully offset each other within maturity categories; across maturity categories, the partial offset is recognized.

For the calculation of PFE, it is required to adopt the unmargined methodology. This is because a single margin agreement applies to multiple netting agreements and collaterals are based on the netted MTM values of the derivative contracts.

This is handled in FSI_POTENTIAL_FUTURE_EXP_CALC.

Exposure at Default Calculations (EAD)

Through the CRM Process, the bank takes into account the mitigation effect and calculates the post-mitigation exposure at default amount. This signifies the maximum loss that the bank can suffer in case of default on this exposure, after considering all the mitigation effects. The application also computes pre-mitigation risk-weighted assets in the process DRV_PRE_CRM_RISK_WEIGHTED_ASSET_CALCULATION and post-mitigation risk-weighted assets in the process DRV_POST_CRM_RISK_WEIGHTED_ASSET_CALCULATION by multiplying the respective EAD by risk weight. In this scenario, the risk weight is arrived at by analyzing the credit rating of the exposures or mitigants.

The risk weight is arrived at by multiplying the pre-mitigation capital charge by 12.5. Through Credit Risk Mitigation, the Bank considers the effects of mitigation. The application checks mitigant eligibility based on the Basel Specifications and assigns a haircut to each mitigant based on their currency, residual maturity, and expected volatility in their market value.

7.2.2.7   Multiple Assessment

For exposures with multiple ratings, Risk Weight Assignment is based on multiple assessment processes. For each exposure, the final rating is the worst of the best two ratings assigned to the exposure.

The risk weight corresponding to this rating is then assigned to the exposure.

Exposures for multiple rating assessments are first moved into the table FSI Multiple Rating Processing (FSI_MULTIPLE_RATING_PROCESSING) wherein the ranking and final selection of which rating to use takes place.

This happens in the sub-process of DRV_MULTIPLE_ASSESSMENT_PROCESSING_DATA_POP Derivatives Data Processing, wherein the data for the multiple assessment processing gets populated into the FSI table. MULTIPLE_RATING_ASSESSMENT, wherein the identification of the multiple rating for the exposure happens, and the DRV_MULTIPLE_ASSESSMENT_BASED_RISK_WEIGHT_ASSIGNMENT for Derivatives Data Processing wherein the Actual Risk Weight and final rating assignment happens for the exposures.

7.2.2.8   Issue Issuer Assessment

For all the exposures which remain unrated after the multiple assessment processes, the issue issuer process is performed. This happens in the Issue Issuer Assessment sub-process

(DRV_ISSUE_ISSUER_ASSIGNMET). In this case, the unrated exposures are assigned a reference rating based on the reference issue available or the rating of the party, whichever is applicable. These unrated exposures are assigned a risk weight based on the reference rating.

For Derivatives, the application does an issue-issuer assessment to infer a rating of the unrated exposures, based on the rating of a similar instrument (referred to as reference issue hereafter) issued by the same issuer. The reference issue is used only when it is of the same currency as the exposure and the exposure is senior or equivalent to the same. For the unavailable reference issue, the party rating is used. In the case of the party also being unrated, the exposure remains unrated. Also, the application populates whether the exposure is LT rated or ST rated, based on the rating assigned to the exposure.

7.2.2.9   Risk Weight Assignment Rules

ECRA- SCRA Approach

The ECRA SCRA Approach options for risk-weighting are selected during Run definition to update the required calculations as allowed by the specific jurisdiction. Based on the run definition selected the Derivatives process passes through the Risk Weighting Approach. This is handled in Derivatives Post Crisis Risk Weight Assignment- ECRA and Banking Post Crisis Risk Weight Assignment- SCRA. For more details on the options, see the Run Management Section.

The Risk Weight Assignment Rules in Derivatives Post Crisis for Data Processing are divided into ECRA and SCRA which are selected through the run definition.

Risk Weight Assignment to all Exposures

Risk Weight is assigned based on asset class and the credit rating as per Basel Guidelines. The Risk Weight Rules operate on the Risk Weight Table (FSI_RW_MAP_MASTER). Highly rated exposures are allocated low-risk weight and poorly rated exposures are allocated high-risk weights. If exposure has more than one rating (rated by more than one agency), then the final rating is assigned based on multiple assessments. The application updates the risk weights against the exposures directly, when ratings are not considered.

Options for risk-weighting are selected during Run definition if the Run Management UI is used, to update the required calculations as allowed by the specific jurisdiction. For more details on the options, see Run Management.

Figure 33: Process Flow for SCRA Risk Weight Assignment
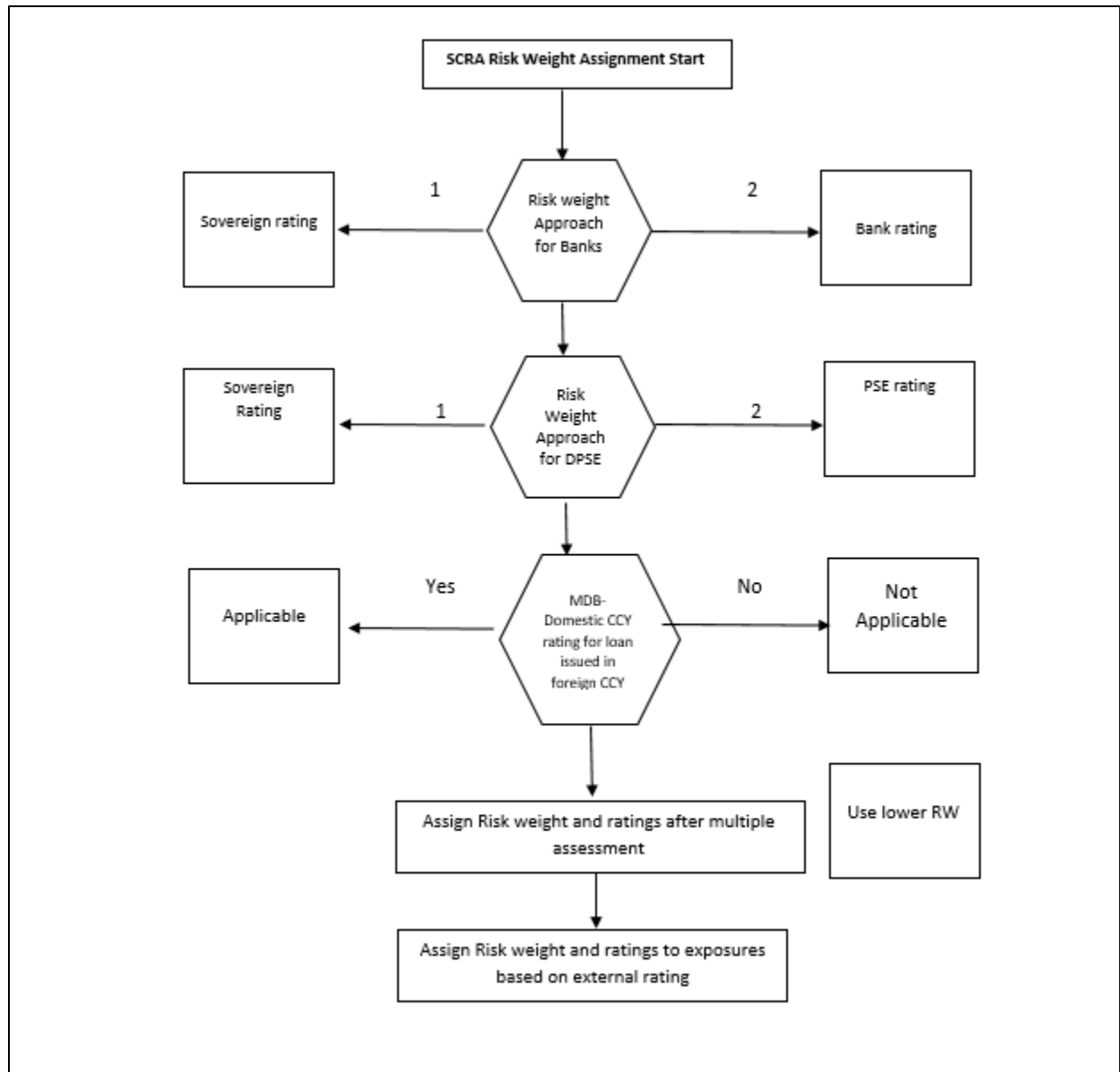
Risk weight assignment takes place in the sub-process **DRV_RISK_WEIGHT_ASSIGNMENT_STD**.

Risk Weight Assignment to Sold Credit Protection Exposures

The sold credit protection data is specific to sold credit derivatives. This data is available in the product processor table STG_CREDIT_DERIVATIVES. The sold credit protection data is processed under SOLID_PROTECTION_CREDIT_DATA_PROCESSING. The underlying data are required for all the sold credit protection.

The Risk Weight Assignment for the sold credit protection is based on the asset type of the underlying exposure captured in Non-Sec Pre-Mitigation RW Assignment for Rated SCP – STD.

- The risk weight for the underlying exposure is calculated and this is updated to the sold credit protection exposure under the sub process Derivative Pre-Mitigation RW UL for SCP based on Revised Sec Framework.

- The RWA is calculated as the Pre-mitigation EAD multiplied by the Pre-Mitigation Risk Weight.

- In the case of sold credit protection exposures, the Pre-Mitigation EAD and the Post Mitigation EAD are the same since there are no mitigants for these exposures.

> The underlying data for sold credit protection data is provided in the STG_UNDERLYING_EXPOSURES table. The underlying for the sold credit protection have V_UNDERLYING_DATA_IDENTIFIER where the underlying of the sold credit protection have the "V_UNDERLYING_DATA_IDENTIFIER" as "SCP", to recognize this for the Sold credit protection treatment captured in sub process Derivative_SCP_underlying.

5. Risk Weight Assignment to Cleared Transaction Exposures

Where a Bank acts as a clearing member of a CCP for its own purposes, a risk weight of 2% must be applied to the bank's trade exposure to the CCP in respect of OTC derivatives, exchange traded derivative transactions and SFTs.

Where the clearing member offers clearing services to clients, the 2% risk weight also applies to the clearing member's trade exposure to the CCP that arises when the clearing member is obligated to reimburse the client for any losses suffered due to changes in the value of its transactions in the event that the CCP defaults.

This captured in process DRV_RISK_WEIGHT_ASSIGNMENT in sub process Derivative Basel III - RW Assignment for Cleared Transactions - Exposures - Revised Approach.

6. Risk Weight Assignment to Specific Wrong Way Risk Exposures

Specific Wrong Way Risk: Wrong-way risk is defined as the risk that occurs when exposure to counterparty is adversely correlated with the credit quality of that counterparty. It arises when default risk and credit exposure increase together.

For all the transactions which are identified as Specific wrong way risk, Risk weight is assigned in process DRV_RISK_WEIGHT_ASSIGNMENT.

7.2.2.9.1 RWA Calculations

The RWA is calculated as the Pre-mitigation EAD multiplied by the Pre-Mitigation Risk Weight.

In the case of Sold Credit Protection Exposures, the Pre-Mitigation EAD and the Post-mitigation EAD is the same since there are no mitigants for these exposures.

7.2.2.9.2 Post CRM RWA Calculations

In the case of derivatives, there are no additional mitigants, and hence both pre-CRM RWA Calculations and post CRM RWA Calculations are one and the same which is stored in FSI_CAP_DERIVATIVES.N_EAD_POST_MITIGATION.

7.2.2.9.3 Allocation of RWA at Exposures

CCR RWA calculated at the netting set level is allocated to the exposures of the nettable pool using the following formula:

RWA at Exposure Level = Total CCR RWA at netting set level * Pre-Mitigation EAD for Exposure / Sum of Pre-Mitigation EAD for all Exposures part of CCR RWA at netting set level

7.2.3   Securities Financing Transactions Portfolio

Securities Financing Transactions (SFT) include Repo Style transactions, Margin Lending, Security Financing Borrowing, and so on.

Under Standardized Method we have two approaches –

Simple Approach

In this approach, the collateral is being substituted for the covered portion of the exposure, and the risk weights as applicable for the standard mitigant type and issuer type are assigned to the collateral.

Comprehensive Approach

This is the approach wherein the collateral undergoes haircut treatment and the exposure value gets reduced from this portion.

For all SFT Contracts which have a placed collateral or mitigant mapped to it, the application computes CRM based on the EAD Approach undertaken by the bank.

Process Flow for Credit Risk Securities Financing Transactions

Figure 34: Process Flow for Credit Risk Securities Financing Transactions
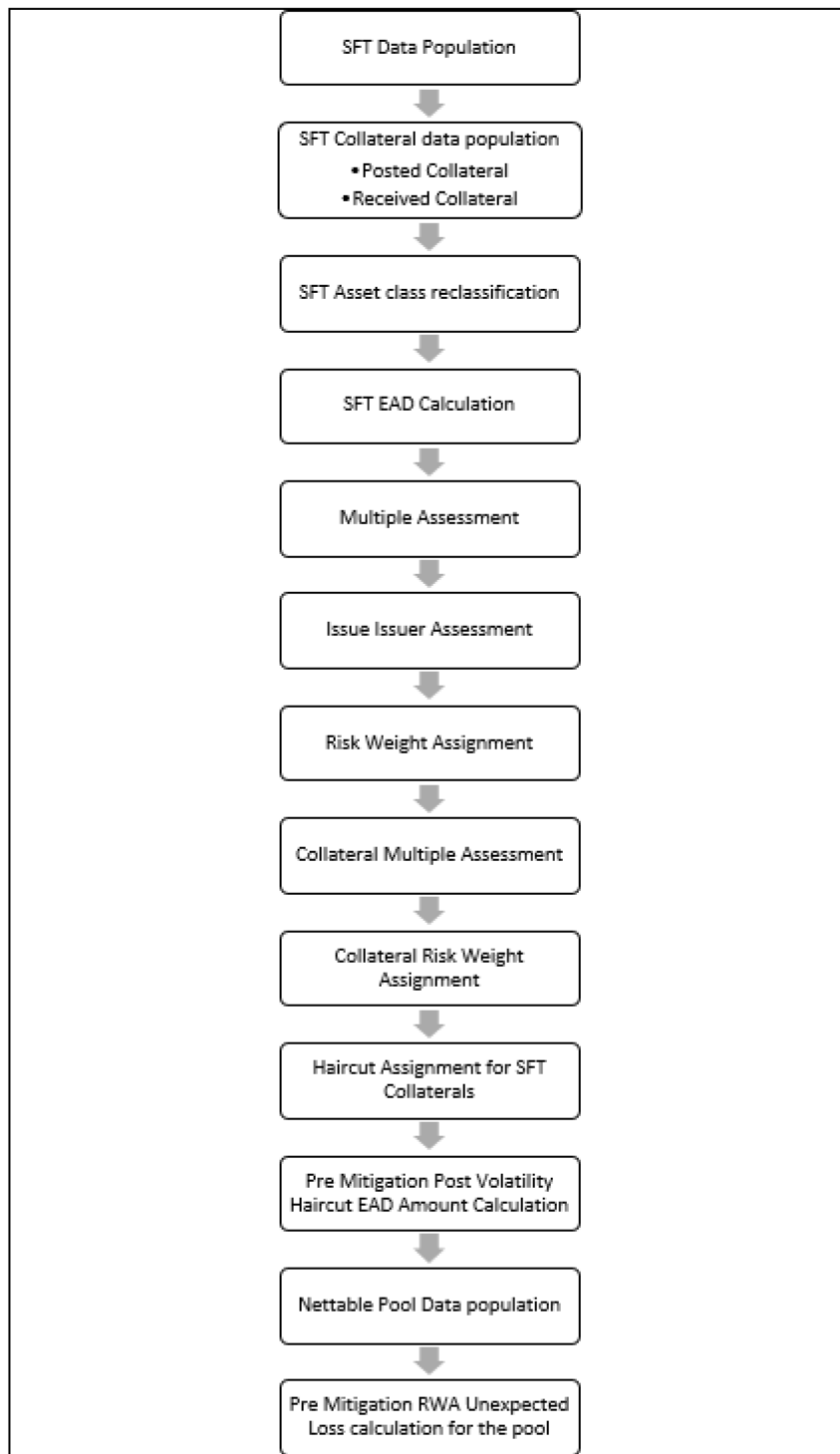
7.2.3.1   Rating Population

The data on ratings is captured in the following rating specific tables:

- Party Rating Table (**STG_PARTY_RATING_DETAILS**)

    - Credit Ratings for all customers and issuers are captured in this table.

- Instrument Rating Table (STG_INSTRUMENT_RATING_DETAILS)

    - Credit Ratings for all instruments which are in the form of collateral either placed or received are captured in this table.

- Sovereign Rating Table (**STG_SOVEREIGN_RATING_DETAILS**)

    - Credit Rating for all countries is captured in this table.

7.2.3.2   Processing Steps

Banks obtain credit ratings from different sources and these are provided as input in the application through the rating tables mentioned in the preceding list.

This is handled in the process RATING_RECLASSIFICATION_POPULATION.

The application re-classifies the rating information to BIS Specific standard ratings. The out-of-box application supports the Fitch / Moodys / S&P and DBRS credit rating reclassification for Long Term and Short-Term ratings.

This is handled in the process Credit Rating Reclassification.

The rating reclassification lookup table (**FSI_RATING_CLASSIFICATION**) is used to lookup reclassified standard ratings so that the reclassification rule is not repeated for each of the rating processing tables.

Ratings are populated from the stage tables (for example, **STG_PARTY_RATING_DETAILS**) to FSI tables (for example, **FSI_PARTY_RATING_DETAILS**) using the lookup table (**FSI_RATING_CLASSIFICATION**) to obtain a reclassified rating.

Ensure that all the relevant columns as indicated in the DL Specs are mandatorily populated with data. For example, in the Stage Party Rating Details (**STG_PARTY_RATING_DETAILS)** table: Rating source code (**V_RATING_SRC_CODE**), Party Code (**V_PARTY_CD**), Purpose (**V_PURPOSE**) are required to be populated. The purpose code is to indicate whether the rating is a domestic rating or a foreign rating. If any other rating is provided, then the exposure is considered unrated.

7.2.3.3 Data Population

Credit Risk exposures are updated in the application for all the product types through their respective input tables known as Product Processors. Main categories of Counterparty Credit Risk Exposures, along with their respective table names that are used as an input, are as follows:

Table 19: Data Population for Credit Risk Exposures

Product	Source Product Processor
Margin Lending Transactions	STG_LOAN_CONTRACTS
Re purchase contracts / Reverse Repurchase contracts / Security Lending & Borrowing	STG_REPO_CONTRACTS

There is a data population about the placed collateral that have been placed with respect to the SFT transaction.

Table 20: Data Population for Placed Collateral

Product	Source Product Processor
Placed Collateral	STG_PLACED_COLLATERAL

There is a data population about the mitigants, which cater to the mitigants that have been received for the SFT transaction.

Table 21: Data Population for Mitigants

Product	Source Product Processor
Mitigants – Collateral Received	STG_MITIGANTS

There is a data population about the mapping between the exposures and the mitigants. And one data population about the mapping between the exposures and the placed collateral.

Table 22: Data Population for Mapping between the Exposures and the Mitigants

Product	Source Table
Mapping for Exposures and Mitigants	STG_ACCOUNT_MITIGANT_MAP
Mapping for Exposures and Placed Collateral	STG_ACCT_PLACED_COLL_MAP

Processing table details

All Counterparty Credit Risk SFT exposures are loaded into the table, FSI Cap SFT Exposures (FSI_CAP_SFT_EXPOSURES) where further processing happens for this portfolio of exposures.

This is handled in the process SFT_Data_Population.

7.2.3.4 Shareholding Percent Multiplication

Shareholding percent multiplication for common entity level data is a part of BIS Common Data Processing (PMFCOM020) process. In this the application updates the shareholding percentage against each entity. The parent entity is updated with the value of 1 as the shareholding percent and for each child entity, the percentage is based on the parent's holding percentage as specified for each child in fact entity shareholding percent table (FCT_ENTITY_SHR_HLD_PCT).

Shareholding percent multiplication for exposure level is part of each portfolio as well. In this process, the application multiplies the entity shareholding percentage for that entity for parent entity against exposure amount, undrawn amount, and provision amount for that exposure and updates the same.

This process is handled in the sub-process SFT_SHAREHOLDING_CALCULATION_STD of the process SFT_DATA_PROCESSING_STD.

7.2.3.5 Common Reclassification Rules

The application reclassifies the bank's product types and party types to standard product and party types. Based on the standard product and party type, the asset class for each exposure is arrived at. Similarly, the application does reclassification for mitigant based on its mitigant types and reclassifies it to standard mitigant types.

Ensure that all products and party type and mitigants which are bank-specific are reclassified, as part of the setup activity. If they are not reclassified, the treatment might not happen as expected by the regulator.

Product Type Reclassification

Product types used by the reporting bank as input data are reclassified to standard product types as recommended in the Accord. The product types after reclassification are stored as Basel product types. For Example, any security lending product is reclassified as Security lending and borrowing product type.

This is handled in the Basel Product Type Reclassification which is part of the COMMON_RECLASSIFICATION process.

Party Type Reclassification

Similar to the product type, the customer type (which are stored as counterparty type) are also reclassified as standard counterparty type. The customer information is expected in the Stage Party Master (STG_PARTY_MASTER), and this also includes the Party Type based on the Stage Party Type Master (STG_PARTY_TYPE_MASTER).

Party type reclassification Rules handle reclassification for customer types. For Example, any central bank is reclassified as Sovereign.

This is handled in the Party Type Reclassification which is part of BIS Other Reclassification process.

Mitigant Reclassification

For mitigants, the application reclassifies the mitigant type to the standard mitigant type like the debt securities, cash, and so on.

The reclassification tasks are present in the MITIGANT_TYPE_RECLASSIFICATION.

Other Reclassification

As part of the reclassification rules, any other data which is being brought inside the application like seniority, transaction type, and so on also get reclassified into OFSAA specific values. This is also mandatory to be done, otherwise data is not available for processing as required by the regulator.

This happens as part of the process COMMON_RECLASSIFICATION.

7.2.3.6 Asset Reclassification Rules

Based on Basel product type and standard counterparty type, an asset class is formed by the application. This asset class is used for data processing. The asset class is the same as specified in the accord.

For example, Standard counterparty is Corporate non-SME and Corporate SME, the asset class is corporate.

The asset class for all mitigants is reclassified based on their standard mitigant types and standard issuer type.

This happens in the sub-process SFT_RECLASSIFICATION_STD and the process SFT_DATA_PROCESSING_STD.

7.2.3.7 Pre-mitigation Calculations

Based on the asset class, the application calculates the Pre-Credit Risk Mitigation (CRM) Exposure at Default (EAD) for each exposure. This value signifies the maximum loss that the bank can suffer, in case of default on this exposure, before considering any mitigation effects.

In the case of SFT Exposures, the exposures are hedged against credit risk through various collateral. These collaterals provide mitigation to credit risk and must be considered while computing Credit RWA, as per the Accord. Hence, the application calculates the pre-mitigation exposure amount and post-mitigation exposure amount.

The application also computes pre-mitigation risk-weighted assets (Pre CRM RWA) and post-mitigation risk-weighted assets (Post CRM RWA) by multiplying the respective EAD by risk weight. The risk weight is arrived at, by considering the credit rating of the exposures and mitigants as per the guidelines.

7.2.3.7.1 Exposure at Default Amount Calculation

Pre-mitigation Exposure at Default can be calculated using one of the two approaches of EAD – Simple Approach and Comprehensive Approach. This is based on regulatory definition selection.

Calculation of EAD – Comprehensive Approach

As per the Comprehensive Approach, the EAD is computed by considering the Exposure Amount Post Haircut, and the Collateral Amount Post Haircut.

Exposure Amount Calculations for the Exposures

The exposure amount from the product processor tables STG_REPO_CONTRACTS and STG_LOAN_CONTRACTS for the respective products are based on their EOP balance i.e nothing but the End of period balance, which will be populated into the processing table (FSI_CAP_SFT_EXPOSURES) for further calculations.

This is part of the process SFT DATA POPULATION.

a. **Placed Collateral & Mitigant – Eligibility**

The mitigant is identified as eligible are not based on the eligibility rules for CRM as mentioned in the Basel III accord. Credit rating of the collateral is considered for all mitigants types issued by all party types, while deciding whether a mitigant is eligible for a particular exposure or not. Separate eligibility Rules exist for mitigants types like equity, mutual funds, or debt security, to perform these checks. For the remaining, a mitigant is marked as eligible only if its credit rating is better than the exposure to which it is providing protection and also if it is classified as senior in position.

This is handled in the sub process - Mitigant Processing – STD Approach (FSI_CAP_MITIGANTS). Mitigant eligibility is also checked based on the original and residual maturity of the collateral. Collateral is classified as eligible only if its original maturity is more than a year and residual maturity is more than 3 months.

The placed collateral is captured in FSI Cap Placed Collateral (FSI_CAP_PLACED_COLLATERAL) and this also moves to FSI Cap Mitigants (FSI_CAP_MITIGANTS), wherein the placed collateral and the mitigants both undergo the same treatment.

This is part of the sub process Mitigant Processing – STD Approach – BIS in the process   SFT_PLACED_COLLATERAL_DATA_PROCESSING_STD.

b. Placed Collateral & Mitigant – Haircut Assignment

The application assigns three kinds of mitigant haircut, which are volatility haircut, FOREX Haircut, and Maturity Mismatch Haircut.

Volatility Haircuts are assigned to the collateral to account for any future fluctuations in the market value of the financial collateral. Separate Rules exist in the application for various types of financial collaterals like debt securities, equity, mutual funds, and so on. The application assigns a volatility haircut using Supervisory Haircut method when standardized approach is selected.

When the exposure and collateral are in different currencies, the application makes an adjustment by applying FOREX Haircut.

If the residual maturity of CRM is less than the underlying credit exposure, then a maturity mismatch is applied. If there is a maturity mismatch and CRM have an original maturity of more than a year, the maturity mismatch haircut is applied to adjust the value.

This is part of the sub process SFT_COMPREHENSIVE_APPROACH_HAIRCUT_in the process   SFT_PLACED_COLLATERAL_DATA_PROCESSING_STDEAD Calculation for Exposures that are not part of netting agreement

For SFT transaction, the application calculates EAD for the parent exposure, based on the underlying information. The underlying exposures (which are the mitigants received and the collateral placed) are moved to **FSI_SFT_UNDERLYING** table from **FSI_CAP_MITIGANTS. FOREX** haircut is applied if the underlying and the parent contract are in a different currency. Each SFT underlying exposure adjusted for a haircut (EAD + haircut value) is added as EAD to the parent contract.

This is part of the process SFT_EXP_AND_PLACED_COLLATERAL_PROCESSING_STD.

c. EAD Calculation for Exposures that are part of Netting Agreement

The application nets SFT contracts based on the same customer, common netting agreement identifier, the transaction of Repo, Re-Repo or Margin Lending, Trading or Banking book, and

so on. Margin lending transaction being SFT also follows the same EAD Calculation Methodology, however Repo or Reverse Repo and margin lending are not netted together.

The calculation happens in the table FSI Cap Nettable pool (FSI_CAP_NETTABLE_POOL). This is handled in the process SFT_NETTING_CALCULATION.

Calculation of EAD – Simple Approach

As per the Simple Approach, the EAD is computed by considering the Exposure Amount and the mitigants assigned being sent under Credit Risk Mitigation Process and assigning based on the Risk Weight of the Mitigants and the Exposures.

a. Exposure Amount Calculations for the Exposures

The exposure amount from the product processor tables STG_REPO_CONTRACTS and STG_LOAN_CONTRACTS for the respective products are based on their EOP balance i.e nothing but the End of period balance which will be populated in to the processing table (FSI_CAP_SFT_EXPOSURES) for further calculations. This is part of the process   SFT DATA POPULATION.

b. Placed Collateral & Mitigant – Eligibility

The mitigant is identified as eligible are not based on the eligibility rules for CRM as mentioned in Basel III Accord. Credit rating of the collateral is considered for all mitigants types issued by all party types, while deciding whether a mitigant is eligible for a particular exposure or not. Separate eligibility Rules exist for mitigants types like equity, mutual funds, or debt security, to perform these checks. For the remaining, a mitigant is marked as eligible only if its credit rating is better than the exposure to which it is providing protection and also if it is classified as senior in position.

This is handled in the sub process - Mitigant Processing – STD Approach (FSI_CAP_MITIGANTS). Mitigant eligibility is also checked based on the original and residual maturity of the collateral. Collateral is classified as eligible only if its original maturity is more than a year and residual maturity is more than three months.

The placed collateral is captured in FSI Cap Placed Collateral (FSI_CAP_PLACED_COLLATERAL) and this also moves to FSI Cap Mitigants (FSI_CAP_MITIGANTS), wherein the placed collateral and the mitigants both undergo the same treatment. This is part of the sub process Mitigant Processing – STD Approach – BIS in the process SFT_PLACED_COLLATERAL_DATA_PROCESSING_STD.

c. Placed Collateral & Mitigant – Risk Weight Assignment

For Simple Approach, the application assigns risk weight to mitigants on the basis of credit rating (CAP Mitigant Basel Rating and Risk Weight Assignment), and original maturity (CAP Mitigant RW Assignment based on Original Maturity). These fall under the process Mitigant RW Assignment – Simple –BIS.

This is part of the sub process Mitigant Processing – STD Approach – BIS in the process   SFT_PLACED_COLLATERAL_DATA_PROCESSING_STD

d. EAD Calculation for Exposures that are not part of netting agreement

For SFT Transaction, the application calculates EAD for the Parent Exposure, based on the underlying information.

The underlying exposures (which are the mitigants received and the collateral placed) are moved to FSI_SFT_UNDERLYING table from FSI_CAP_MITIGANTS.

This is part of the process SFT_EXP_AND_PLACED_COLLATERAL_PROCESSING_STD The SFT exposures EAD by considering the collateral placed and received are handled as part of the credit risk mitigation process. This is in the PMF Process CRM Data Processing.

e. EAD Calculation for Exposures that are part of netting agreement

The application nets SFT Contracts based on the same customer, common netting agreement identifier, the transaction of Repo, Re-Repo or Margin Lending, Trading or Banking book, and so on. Margin lending transaction being SFT also follows the same EAD calculation methodology, however, Repo or Reverse Repo and margin lending are not netted together.

The netted exposure of the SFT gets computed without the effects of the collateral received and placed in the FSI Cap Nettable Pool (FSI_CAP_NETTABLE_POOL). This gets handled in the process SFT_NETTING_CALCULATION.

The SFT Exposures EAD by considering the collateral placed and received are handled as part of the credit risk mitigation process. This is in the PMF Process CRM Data Processing.

7.2.3.7.2   Risk Weight Assignment

Multiple Assessment

For exposures with multiple ratings, Risk Weight Assignment is based on Multiple Assessment Processes. For each exposure, the final rating is the worst of the best two ratings assigned to the exposure.

The risk weight corresponding to this rating is then assigned to the exposure.

Exposures for Multiple Rating Assessments are first moved into the table FSI Multiple Rating Processing (FSI_MULTIPLE_RATING_PROCESSING) wherein the ranking and final selection of which rating to use takes place.

Below are the related sub-processes:

SFT_MULTIPLE_ASSESSMENT_PROCESSING_DATA_POP, wherein the data for the multiple assessment processing gets populated into the FSI table.

MULTIPLE_RATING_ASSESSMENT, wherein the identification of the multiple rating for the exposure happens, and the

SFT_MULTIPLE_ASSESSMENT_BASEL_RISK_WEIGHT_ASSIGNMENT, wherein the actual risk weight and final rating assignment happen for the exposures.

Issue Issuer Assessment

For all the exposures which remain unrated after the multiple assessment processes, the Issue Issuer Process is performed. This happens in the Issue Issuer Assessment sub-Process

(SFT_ISSUE_ISSUER_ASSESSMENT).

In this case, the Unrated Exposures are assigned a reference rating based on the reference issue available or the rating of the party, whichever is applicable. These Unrated Exposures are assigned a risk weight based on the reference rating.

For Unrated Exposures, the application does an Issue-Issuer Assessment to infer a rating of the Unrated Exposures, based on the rating of a similar instrument (referred to as reference issue hereafter) issued by the same issuer. The reference issue is used only when it is of the same currency as the exposure and the exposure is senior or equivalent to the same. For the unavailable reference issue, the party rating is used. In the case of the party also being unrated, the exposure remains unrated. Also, the application populates whether the exposure is LT rated or ST rated, based on the rating assigned to the exposure.

Risk Weight Assignment

Risk Weight is assigned based on asset class and the credit rating as per Basel Guidelines. The Risk Weight Rules operate on the Risk Weight Table (FSI_RW_MAP_MASTER). Highly rated exposures are allocated low-risk weight and poorly rated exposures are allocated high-risk weights. If exposure has more than one rating (rated by more than one agency), then the final rating is assigned based on multiple assessments. The application updates the risk weights against the exposures directly, when ratings are not considered.

Options for risk-weighting are selected during Run definition if the Run Management UI is used, to update the required calculations as allowed by the specific jurisdiction. For more details on the options, see Run Management.

Figure 35: Process Flow for ECRA Risk Weight Assignment
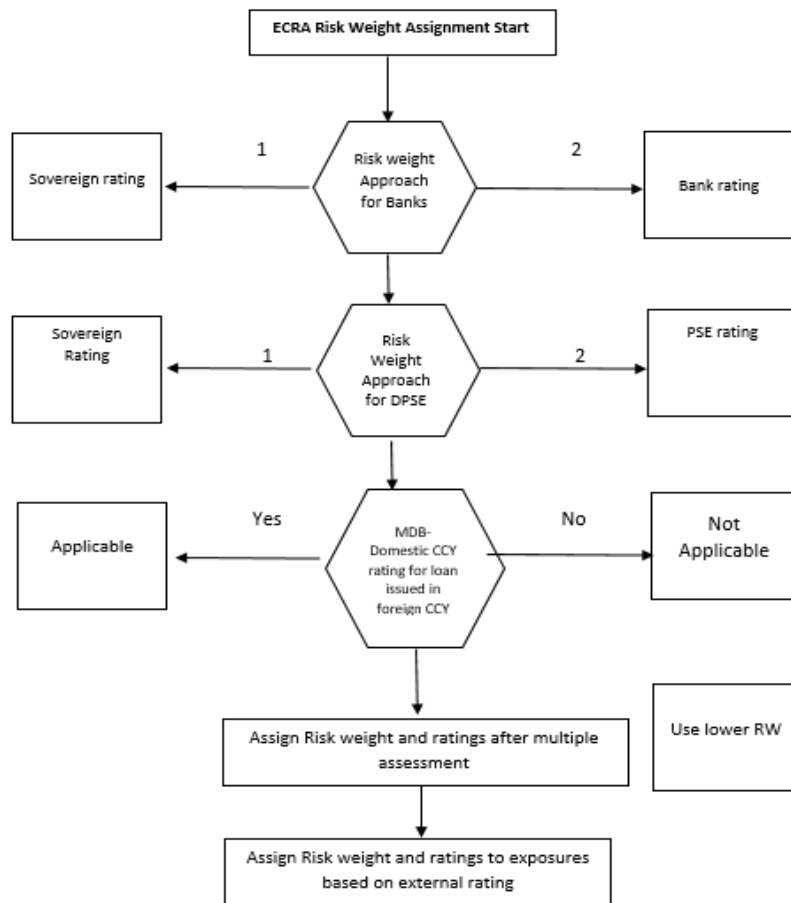
Figure 36: Process Flow for SCRA Risk Weight Assignment
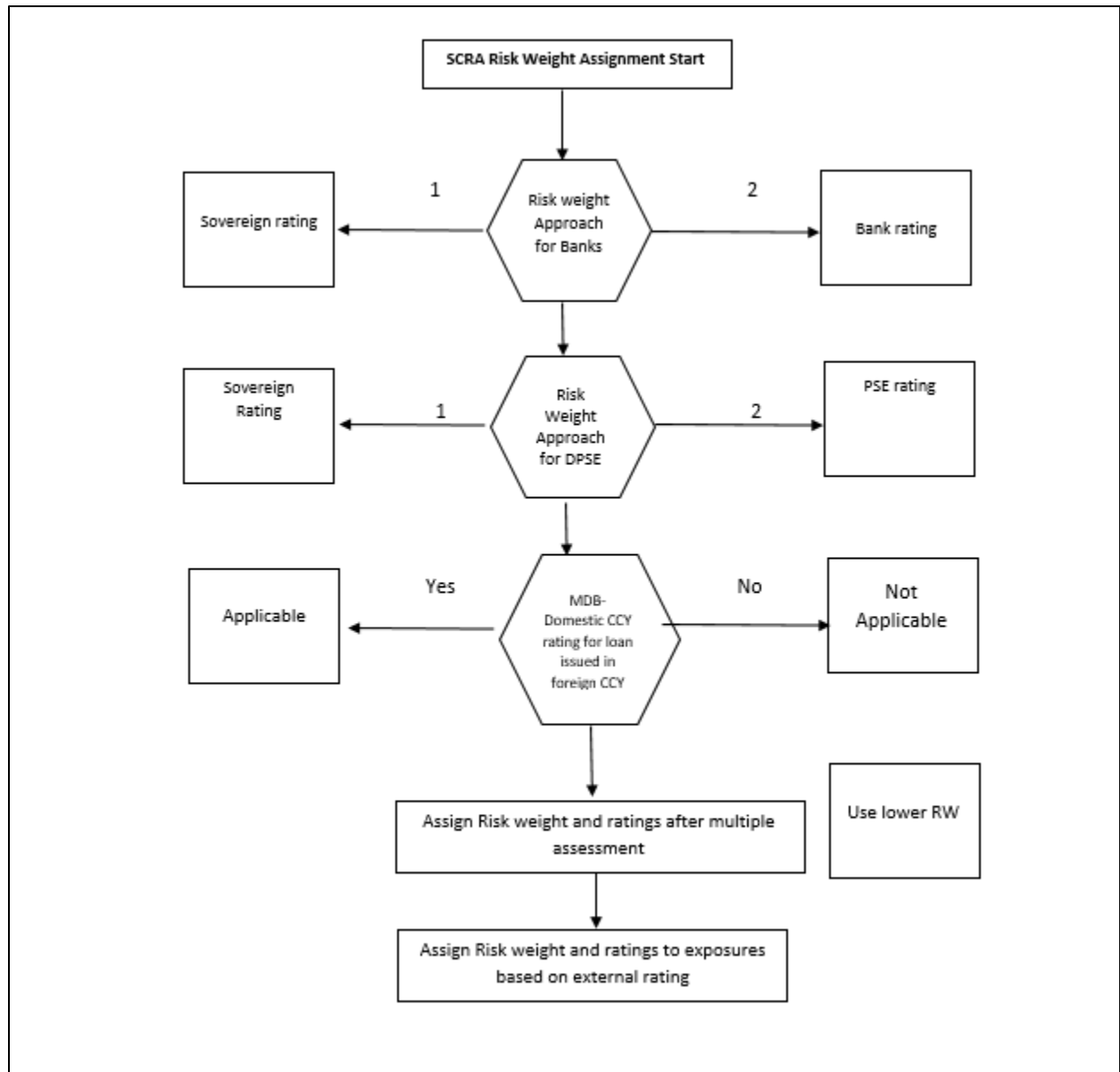
Risk Weight Assignment happens in the process "SFT_RISK_WEIGHT_ASSIGNMENT STD"" for the SFT Exposures.

7.2.3.7.3 RWA Calculations

The RWA is calculated as the Pre-mitigation EAD multiplied by the Pre-Mitigation Risk Weight.

7.2.3.7.4 Credit Risk Mitigation Process

In order to calculate the post CRM RWA, the application needs to account for mitigants which may be in the form of collaterals (for simple approach) or guarantees that are being provided by the Bank. All the mitigants which get populated into the system are being made ineligible, and then the regulatory approved mitigant types and the issuer type combination are made eligible.

7.2.4　Pooling and Optimizer

7.2.4.1　Pooling

Pooling is one of the prerequisites for the optimized allocation of the exposures.

Pooling pulls out an exposure, and identifies all the relevant mitigants mapped to it, and the corresponding exposures mapped to these mitigants, and again the corresponding newer mitigants mapped to these exposures. This pooling assigns the cardinality to the exposures based on the mitigant combination.

This happens in the FSI Cap Sub Exposures (FSI_CAP_SUB_EXPOSURES), and the pooling is part of the sub process.

The relevant cardinalities that get assigned to the exposures, as part of this pooling process are as follows:

- 1-0➔One exposure not mapped to any mitigant

- 1-1 ➔One exposure mapped to one mitigant

- 1-N➔One exposure mapped to multiple mitigants

- N-1 ➔Multiple exposures mapped to a single mitigant

- N-N ➔Multiple exposures mapped to Multiple mitigants

7.2.4.2　Optimizer

The Optimizer is the process of allocation of the mitigants to the exposures, based on the different logic applicable for the various granularity. The details of this is available in the Annexure.

Both Pooling and Optimizer is handled under the process CRM Sub Exposure Pooling and Optimizer Processing.

7.2.4.3　Post CRM RWA

The application computes the covered amount and the uncovered amount for the exposures. The covered amount is computed by multiplying the covered factor with the exposure amount. To this covered amount, the application assigns the mitigant risk weight. The product of the covered amount and the mitigant risk weight is the covered RWA. The uncovered amount is computed by multiplying the uncovered factor (which is 1 – the sum of all covered factors for that exposure) with the exposure amount. This uncovered amount is multiplied by the exposure risk weight to get the uncovered RWA. The sum of the covered RWA and the uncovered RWA is the Post CRM RWA of the Exposure.

> **Post-CRM RWA = Covered Amount * Risk Weight of the Mitigant**
> **+ Uncovered Amount * Risk Weight of the Exposure**

This is handled in the process Post CRM Expected and Unexpected Loss RWA Assignment.

7.3 Data Capture and Treatment of Underlying Exposures Related to Securitization, and Covered Bond

Underlying Exposures Treatment

Underlying Exposures Data Flow and Treatment Related to Covered Bond

The application also supports Underlying exposures that are received as input through the Stage Underlying Exposures Table (STG_UNDERLYING_EXPOSURES). This is relevant for the covered bond exposures.

Banking Underlying Exposures

For these exposures, the Parent Exposures are Covered Bond Exposures, mapped via the Parent Instrument Code, but the underlying is Banking Exposures.

In such cases, exposures will have a record type as INV_NON_SEC_ULY (Investment Underlying) and will be populated and processed in the Banking table FSI_CAP_BANKING_EXPOSURES. This is handled in the process APRA Post Crisis Banking Underlying Data Processing - STD.

Investment Underlying Exposures

For these exposures, the Parent Exposures, as well as the Underlying Exposures, are both Investment Exposures. Such exposures will have record type as INV_NON_SEC_ULY (Investment Underlying) and will be populated and processed in the Investments Table, FSI_CAP_INVESTMENT_EXPOSURES.

This is handled similarly as a Normal Investment Exposure in the process Investment Data Processing – STD.

Investment Underlying Exposures

For these exposures, the parent exposures, as well as the Underlying Exposures, are both Investment Exposures. Such exposures will have record type as INV_NON_SEC_ULY (Investment Underlying) and will be populated and processed in the Investments Table, FSI_CAP_INVESTMENT_EXPOSURES.

Derivatives Underlying Exposures

For these exposures, the parent exposures are investment exposures, but the underlying is Derivatives exposures. Such exposures will have record type as INV_NON_SEC_ULY (Investment Underlying) and will be populated and processed in the Derivatives table FSI_CAP_DERIVATIVES.

This is handled in the process **APRA Post Crisis Derivatives Underlying Data Processing - STD**.

7.4 Default Fund Contributions Related Capital Charge

A default fund contribution refers to the funds contributed, or commitments made by a clearing member to a Central Counterparty's (CCP) equalized loss-sharing agreement. The purpose of such default funds is to provide capital, in addition to the collateral posted by participants and in addition to capital provided by the clearinghouse, as a safeguard against extraordinary losses that might occur in connection with.

For example, a financial crisis in the market or the simultaneous defaults of several large members. The clearing members contribute to such default funds kept with the central counterparty (clearing house) in the proportion of their exposure to the central counterparty.

The default fund contributions by the clearing members contribute toward the Central Counterparty's Regulatory Capital along with CCP's contributions to the Default Fund. These contributions act as collaterals to mutually share in the losses incurred by the clearing members due to counterparty defaults.

For each clearing member, a contribution is made to the Central Counterparty's Default Fund.

This contribution acts as a reliefs against the defaults by any clearing member of the Central Counterparty.

APRA explains the methods that the banking organization playing the part of a clearing member of the CCP, must adopt and compute Risk-Weighted Assets (RWA) for a non-qualifying and a qualifying CCP.

The application handles the treatment of Default Fund Capital (DFC) Charge or RWE for Default Fund Capital deposited to QCCP or Non QCCP.

This qualified CCP flag (F_QUALIFIED_CCP_FLAG) is expected to be provided as a download in the Party Master (**STG_PARTY_MASTER**) Table.

Treatment:

The Default Fund Capital Charge will be calculated when:

- ADI which is Clearing Member to Qulaified CCP (QCCP).

- ADI is Clearing Member.

7.4.1   Capital Charge for Non-QCCP

If the CCP is not qualified (Non-QCCP), then the Risk-Weighted Asset Amount for the Banking Organization's default fund contribution is calculated using the Own fund's requirements for pre-funded contributions to the default fund of a non-qualifying CCP approach, as suggested in the accord.

When ADI is Clearing Member the RW for Default Fund RWE is given by 1250%* DF.

7.4.2   Capital Charge for QCCP

If the CCP is a qualified CCP (QCCP), then the RWA Amount is computed using one of the following two approaches stated below. Both are handled in the same Sub-Process - RWA For Default Fund Contribution With QCCP. This is based on the Run Management Option selected.

- Own funds requirements for pre-funded contributions to the default fund of a QCCP.

- An alternative calculation of own funds requirement for exposures to a QCCP.

  The approach to the use of either the own fund requirements for QCCP or the alternative approach of the own fund requirements for QCCP is based on the Run Management Option.

  Approach 1

  To compute the clearing member's capital requirement, which is the reporting bank's capital requirement for the contributions made to the CCP's Default Fund, the hypothetical capital requirement of the Central Counterparty for the default fund must be known. This must be computed by the Central Counterparty based on the exposures of all the clearing members to the Default Fund. After this figure is calculated by the CCP, it is shared with all the clearing members to enable them and to compute their respective capital requirements against the Default Fund.

When the Reporting Bank gets the hypothetical capital requirement from the QCCP, the next step is to compute the capital requirement of the Reporting Bank by finding out the proportion of the Reporting Bank's contribution in the total default fund contribution.

- The parameters considered for this purpose include the following QCCPs:

- Net potential exposure to the two largest clearing members.

- The total net potential exposure to all the clearing members.

- Total default fund contribution by all the clearing members.

- QCCP's contribution to the Default Fund.

- The total number of clearing members for the Default Fund.

    The last step is to compute the risk-weighted assets of the Reporting Bank corresponding to the default fund contribution to the QCCP by using the capital computed in the previous step.

    These steps and the calculation involved are the following:

    Step 1

    It requires the QCCP to calculate its Hypothetical Capital Requirement (KCCP) for the Default Fund. This is done by the QCCP and is published to the clearing members for them to use for their respective capital calculations.

    Step 2

    Compare KCCP with the funded portion of the default fund of a QCCP and calculate the capital requirement of the bank (KCM) by using the total of all the clearing members' capital requirements (K*CM). This capital requirement is considered on the contribution that the clearing members make to the default fund of the QCCP.

    Approach 2

    Capital Charge for the default fund contribution is calculated as follows:

    Capital charge (Ki) = 8% * minimum (2% of Trade exposures to the QCCP + 1250% * default fund contribution to the QCCP, 20% * Trade Exposure Amount to the QCCP).

    The application also supports the treatment of a CCP stopping to calculate its fund requirement to the CCP. The flag to indicate that the CCP has stopped calculating the own fund requirement is captured in the party table (**STG_PARTY_MASTER**). Based on the supervisory approval provided, in the run management option, the capital will be calculated using the Alternative approach. Otherwise, it is treated as a normal Credit Risk Exposure, part of the Corporate Asset Class.

    The flag to indicate that the CCP has stopped calculating the capital requirement is expected as part of the Party Master Table (**STG_PARTY_MASTER**). In the case of this flag being null, it is expected that the CCP is calculating the Total Capital and normal processing of QCCP or Non-QCCP happens.

    Key Data Elements

    Key data elements to be noted are listed in this section. To view the complete list of tables used, see the Download Specification Document in [MOS](#).

- Default Fund Contributions and related data are expected at the Default Fund – Central Counterparty level in the entity Stage Central Counterparty Details (STG_CCP_DETAILS).

- Hypothetical Capital Requirement of CCP, Maximum Net Potential Exposure of clearing member of CCP, 2nd Maximum Net Potential Exposure of clearing member of CCP, Total Net Potential Exposure of clearing member of CCP, Number of Clearing Members to the CCP, Total funded Default Fund Contribution of all clearing members to the CCP, Total unfunded Default Fund Contribution of all clearing members to the CCP and Default fund contribution of CCP from its funds for each Central Counterparty level required.

  The application supports only the capital requirement of the bank (KCM) based on Funded/Unfunded default contributions from all clearing members not by Initial Margin. But the Data Model supports placeholders to capture Total Initial Margin by all clearing members to CCP and Bank's initial margin posted to CCP.

7.5 Credit Valuation Adjustment

Basel committee has introduced a new Credit Valuation Adjustment (CVA) capital charge, which is added to Default Risk Capital Charge to arrive at the new Counterparty Credit Risk (CCR) Capital Charge. The mark to Market Counterparty Credit Losses or the Spread Migration Risk is captured with CVA, which were not directly capitalized before. CVA is the difference between the risk-free portfolio value and the true portfolio value that takes into account the possibility of the counterparty's default. In other words, CVA is the market value of Counterparty Credit Risk.

The application calculates CVA Charge for OTC Portfolio of a bank. When using the standardized approach, it is calculated at portfolio level and for advanced approach it is calculated at counterparty level. CVA Charge is not applicable for the trades with central counterparty and structured financial transactions. Structured financial transactions are applicable only if the supervisor specifically mentions the same.

You can include or exclude structured financial transactions in CVA Calculation from the Run Management Window. Portfolio level considers all the trades in different OTC Products with all counterparties. The charge is calculated for the entire exposure of OTC Products.

Counterparty Level Calculations consider all trades in different OTC Products with counterparty for calculation of CVA Charge. Charge is calculated for all counterparties with which banks have OTC Exposures. The CVA Charge for all the Counterparties is summed up to ascertain the Portfolio Level Charge. The manner of consolidation is dependent on the IMM Approval Status and Specific Interest Rate (SIR) Value at Risk (VaR) model approval status of the Bank. The following section describes two ways of consolidating Default Risk Charge and CVA Capital Charge:

- If the bank does not have IMM approval and Specified Interest Rate Risk as a part of approved VaR model for bonds,

  CCR Capital Charge = Default Risk Capital Charge (Current Exposure Method or Standardized Method based, whichever the bank is using for CCR) + Standardized CVA Capital Charge

  If the Bank has IMM Approval Specified Interest Rate Risk as a part of approved VaR Model for bonds:

  CCR Capital Charge = Default Risk Capital Charge + Advanced CVA Capital Charge

  All the OTC Derivatives products are part of CVA calculations. SFTs are included if you select the option from Run Management Window. Also, trades with Central Counterparty (CCP) are excluded from CVA Charge Calculations.

7.5.1 Assumption

CVA Hedge should be identified by the clients separately. Only single name CDS and Index Hedge are eligible for CVA. The Basel III Accord does not clearly mention whether index hedge position should be marked to the counterparty or not. The Basel Regulatory Capital Application handles the index position in the following manner:

1. Both index position marked to the level of counterparty or not marked to the level of counterparty is handled by the application.

2. Effective Index Hedge Amount is considered in the CVA Charge Calculation at portfolio level without considering whether it is marked to the counterparty or not.

3. If the index position is marked to the counterparty, then index hedge amount is considered while allocating total CVA Charge to the counterparty CVA Charge, while using Standardized Approach.

7.5.2 Process Flow for Credit Valuation Adjustments

This process flow is divided into two sections, for Simple Approach and Advanced Approach.

7.5.2.1 Simple Approach

The application calculates CVA Capital Charge at portfolio level using the following formulae as specified by Basel Guidelines:

$$K = 2.33 \cdot \sqrt{h} \cdot \sqrt{\left(\sum_i 0.5 \cdot w_i \cdot \left(M_i \cdot EAD_i^{total} - M_i^{hedge} B_i \right) - \sum_{ind} w_{ind} \cdot M_{ind} \cdot B_{ind} \right)^2 + \sum_i 0.75 \cdot w_i^2 \cdot \left(M_i \cdot EAD_i^{total} - M_i^{hedge} B_i \right)^2}$$

Figure 37: Process Flow for Credit Valuation Adjustments
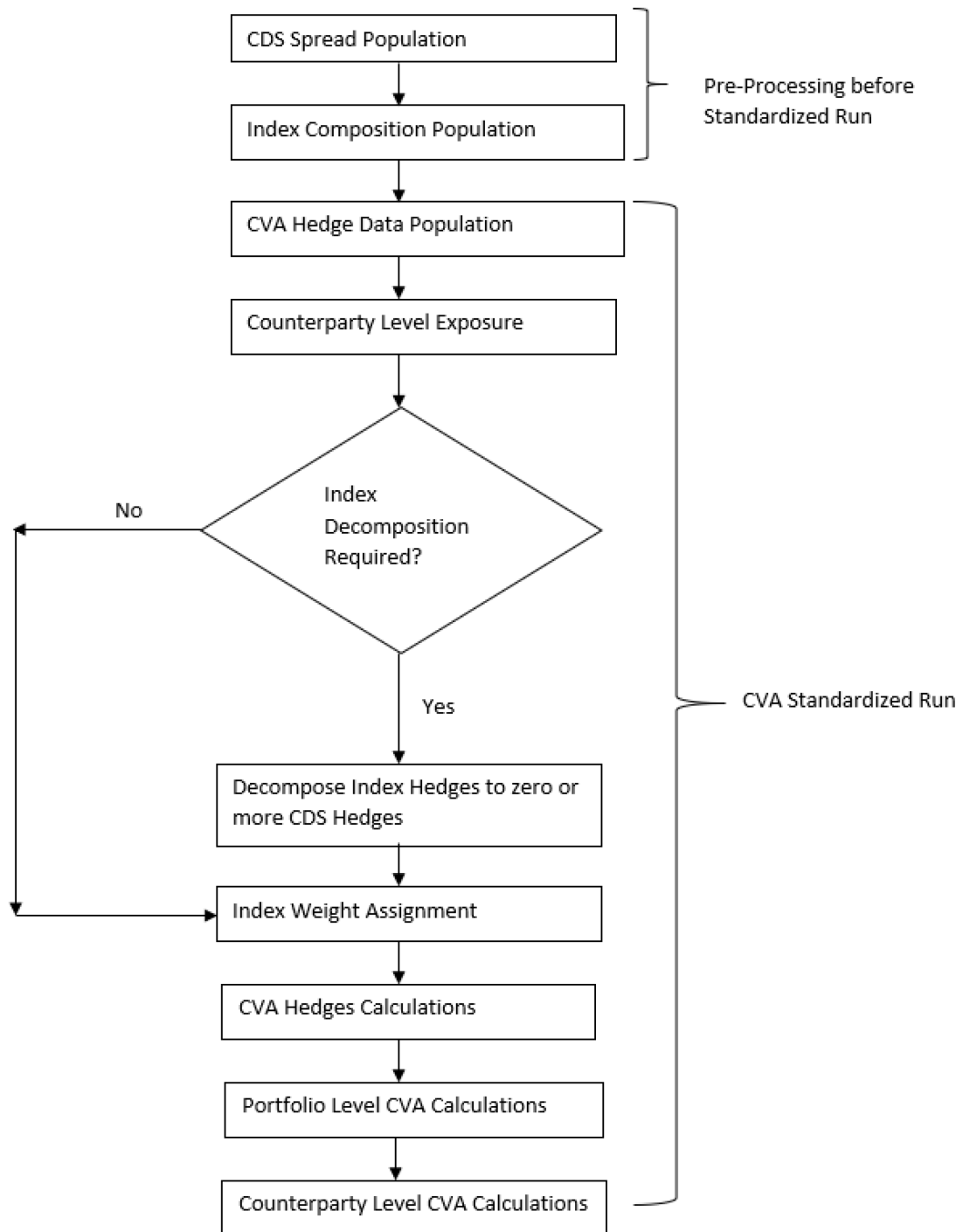
CDS Spread Population and Index Composition Population

Pre-processed Data for CVA is required to be populated only once for a particular execution date. The process CVA_DATA_POPULATION in the Run Staging Data Population - BIS Credit Value Adjustment is responsible for populating pre-processed data for CVA.

CVA Hedge Data Population

Mitigants Data marked as CVA Hedge is populated as a part of the CVA Hedge Data Population. The application loads all the single name CDS hedge and Index Hedge Data. The Hedge Data marked as CVA does not flow in the application during the CCR Process. New tables are not added for Hedge Records; however a few columns are added to the existing table to capture CVA specific data. CVA specific data is present in the following tables:

F_CVA_HEDGE: Identifier for CVA Hedge Records by which the application identifies it as CVA Hedge.

N_CDS_INDEX_AVG_SPREAD: Average traded CDS Index Spread which is required for assignment of weight to the index.

V_REF_ENTITY_PARTY_ID: This field captures the counterparty of the Hedge transaction.

Counterparty Level Exposure Population

The application expects the uncovered EAD at netting agreement level or at trade level. This is available as an output of Current Exposure Method (CEM). If more than one netting agreement is available, then the exposures are summed at counterparty level. These aggregated data is stored in FCT_REG_COUNTERPARTY_CVA table using COUNTERPARTY_EXPOSURE_POPULATIO T2T.

Maturity Adjustment Discount factor is computed at netting agreement level or for each netting agreement using the formula 1- exp(-0.05*Mi)/ (0.05*Mi).

Maturity is the notional weighted maturity at netting agreement level. The application sums the data for exposure at counterparty level. If more than one netting agreement is available, the exposures are discounted and then summed at counterparty level. Weight assignment is done based on the counterparty rating as specified in the following table. Data is aggregated at counterparty level and stored in separate counterparty table.

Table 23: Counterparty Level Exposure Population

Rating	Weight
AAA	0.7%
AA	0.7%
A	0.8%
BBB	1.0%
BB	2.0%
B	3.0%
Lower Than B	10.0%
Unrated	1.0%

Index Decomposition Required

You can select index decomposition which is executed in the Run Management Window. Index decomposition option, creates single name CDS hedge positions for the counterparties which are part of the CDS Index and also have exposures. Index Hedge Amount is adjusted by the same amount for which

single name CDS Hedge is created, so as to get maximum benefit from hedging. Maturity of the single name CDS Hedge is considered same as the maturity of index.

Index Weight Assignment

The application derives the weight for each index by assigning rating. Rating is assigned by comparing the Historical Average Spread of index with spread corresponding to the tenor, which is equal to the maturity of index. After acquiring the rating, assign the weights to the index as per the Reference Table (weights table). Average Index Spread and Credit Spread Data for different ratings are the inputs. Index Spread is populated as a part of mitigants data. Credit Spread Data for respective ratings and tenors are required as inputs.

CVA Hedge Calculations

After population of Hedge Data and creation of single name CDS Hedge from the index, the application sums the notional to counterparty level and populates in CVA Specific Table. Maturity Adjustment Discount factor is computed using the formula (1-exp (-0.05* Mihedge))/ (0.05* Mihedge). If more than one CDS Contract is available for the counterparty, the amount is summed at counterparty level. The Index Hedge Amount is calculated separately. Maturity Adjustment Discount factor for index position is computed using the formula (1-exp (-0.05* Mind)) / (0.05* Mind). If more than one index hedge is available then index hedge amount is summed. All the data required for CVA Calculation is populated from Mitigants Data to CVA specific table. The data is summed for every counterparty and stored.

Portfolio Level CVA Calculation

Portfolio Level CVA Charge is calculated as per the following formula:

$$K = 2.33 \cdot \sqrt{h} \cdot \sqrt{\left(\sum_i 0.5 \cdot w_i \cdot \left(M_i \cdot EAD_i^{total} - M_i^{hedge} B_i\right) - \sum_{ind} w_{ind} \cdot M_{ind} \cdot B_{ind}\right)^2 + \sum_i 0.75 \cdot w_i^2 \cdot \left(M_i \cdot EAD_i^{total} - M_i^{hedge} B_i\right)^2}$$

The CVA Charge calculated at portfolio level is populated in the FCT_REG_CVA_SUMMARY table. Single Name CDS Hedge Component for CVA at portfolio level is calculated and the Summary Table is populated using CVA_SUMMARY_POPULATION T2T.

Counterparty Level CVA Calculation

CVA Capital Charge at counterparty level is allocated using the following formula:

CVA at Counterparty = Total CVA at Portfolio *WCVAi

WCVAi = Absolute[0.5*Wi *(Mi * EADitotal - Mihedge * Bi) - Σindi(Wind ∗ Mind ∗ Bind)]/

ΣniAbsolute[0.5*Wi * (Mi * EADitotal - Mihedge * Bi) - Σ **indi** (**Wind** ∗ **Mind** ∗ **Bind**)]

7.5.2.2   Advanced Approach

Figure 38: Process Flow for Credit Valuation Adjustments
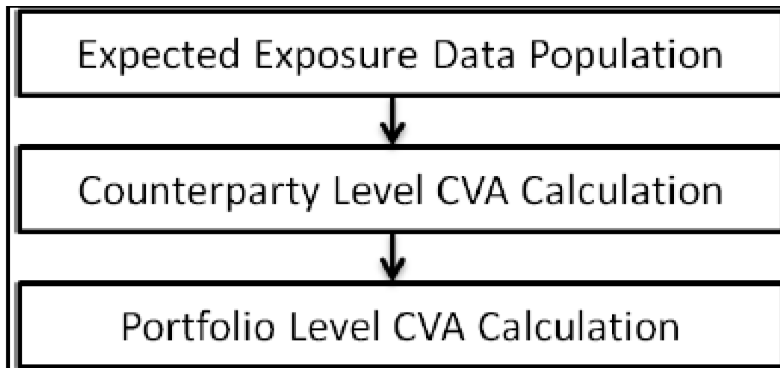
Expected Exposure Data Population

The data requirement which is required as input for calculation of CVA Charge using Advance Approach is as follows:

$$CVA = (LGD_{MKT}) \cdot \sum_{i-1}^{T} Max\left[0; exp\left(-\frac{s_{i-1} \cdot t_{i-1}}{LGD_{MKT}} \right) - exp\left(-\frac{s_i \cdot t_i}{LGD_{MKT}} \right) \right] \cdot \left(\frac{EE_{i-1} \cdot D_{i-1} + EE_i \cdot D_i}{2} \right)$$

LGDMKT: This is the LGD of the counterparty based on the spread of a market instrument of the counterparty. It should be based on market assessment and not an internal estimate. LGD Market should be an input for every counterparty.

Si: This is the credit spread of the counterparty at each tenor Ti, which is used to calculate CVA of the counterparty. Spread data is an input for each counterparty and tenor level.

Ti: This is the tenor at which the Expected Exposure (EE) and spread are provided. Tenor is an input for each EE and spread.

EEi: This is the expected exposure (EE) of the counterparty at revaluation time ti where exposures of different netting agreements of counterparties is added. Expected exposure is an input at each counterparty and tenor level.

Di: This is the default risk free discount factor for each revaluation time bucket. Default risk free rate is an input for each counterparty and tenor ti.

Counterparty Level CVA Calculation

CVA RWA Calculation at counterparty level is computed by the following formula:

CVARWA = 12.5*K

Where K= CVA Capital Charge calculated as per formula specified in Standardized or Advanced Method for each counterparty.

The application calculates the CVA Charge at counterparty level using the below formula for two different scenarios:

Expected Exposure calculated with Current Market Data.

Expected Exposure calculated with Stressed Market Data.

K = 3* (CVAUnstressed VAR + CVAStressed VAR)

The application calculates the CVA Charge at counterparty level using this formula, for every counterparty, and sums the CVA charge for all counterparties to compute Portfolio Level Capital Charge.

The CVA Charge calculated at portfolio level is populated in the FCT_REG_CVA_SUMMARY Table.

These aggregated data is stored in FCT_REG_COUNTERPARTY_CVA table using COUNTERPARTY_EXPOSURE_POPULATIO T2T.

Portfolio Level CVA Calculation

CVA RWA Calculation at portfolio level is computed using the following formula:

CVARWA = 12.5*K

Where K= CVA Capital Charge calculated as per formula specified in standardized or advanced method at portfolio level.

CVA RWA is added to Credit RWA and is not multiplied by the factor 1.06.

7.5.3 Key Data Elements

Key Data Elements are provided in this section for computation for Credit Valuation Adjustment. For a complete list of tables and columns to be updated, see the Download Specifications Document.

- CDS Index Composition Data Requirement.
- CDS Spread Data for Rating and Tenor.
- Average Index Spread for all the Index Hedge Position.
- Eligible CVA Hedge Data Requirement.
- Counterparty subjected to Hedge.
- Issuer code of CDS Index.

7.5.4 Out of scope

The following is not covered by the application in the computation of Credit Valuation Adjustment:

- Treatment of specific wrong way risk.
- Treatment of incurred CVA loss.

7.6 Operational Risk (OR) – The Standardized Approach

Operational Risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. As per the Prudential Standard APS 115 the authorized deposit taking institution (ADI) to hold sufficient regulatory capital against its Operational risk exposures.

As per APS 115 the ADI must compute their Operational Risk Capital based on Standardized Measurement Approach.

The Standardized Measurment Approach Methodology is based on the following components:

(i) the Business Indicator (BI) which is a financial-statement-based proxy for Operational Risk.

(ii)the Business Indicator Component (BIC), which is calculated by multiplying the BI by a set of regulatory determined marginal coefficients (αi)

ORC = BIC

7.6.1 Data Population

The Business Indicator Component information for any Bank will be available in their General Ledger. So the GL level information for these business components which is required to calculate the Business Indicator is sourced from the STG_GL_DATA Stage Table.

The respective GL information should be from the STG_GL_MASTER Stage GL Master Table.

This is handled in the process of FSI_OR_BUSINESS_INDICATOR_DTL_DATA_POP.

The information of the Financial Year is taken from the Stage Financial year master and the same is consumed in identifying the Jurisdictions Financial year. This financial year plays the important role in identifying the number years data considered for the Business Indicator Calculation.

7.6.1.1 The Business Indicator

The Business Indicator (BI) comprises three components:

1. The interest, leases and dividend component (ILDC).

2. The services component (SC).

3. The financial component (FC).

The BI is defined as   BI = ILDC + SC + FC

The information sourced from the Stage GL Data will be reclassified as the Business Indicator Values using the sub process OR – GL Account to Business Indicator Reclassification and they stored in the FSI_OR_BUSINESS_INDICATOR_DTL table. The reclassification helps the application in identifying and using in further calculation.

Figure 39: Business Indicator Components
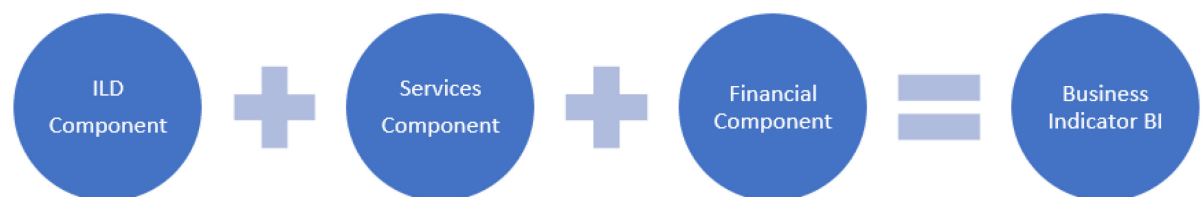
7.6.1.1.1 Calculation of Relevant Components

Interest, Leases and Dividend Component:

$$ILDC = Min\left[\overline{Abs\left(Interest\ Income - Interest\ Expense\right)};\ 2.25\%\cdot\overline{Interest\ Earning\ Assets}\right]+\overline{Dividend\ Income}$$

> **NOTE:**
>
> In the formula above, a bar above a term indicates that it is calculated as the average over three years : t, t-1 and t-2.

The absolute value of net items (eg, interest income – interest expense) should be calculated first year by year. Only after this year by year calculation should the average of the three years be calculated.

Services Component:

$$SC = Max\left[\overline{Other\ Operating\ Income}\ ;\ \overline{Other\ Operating\ Expense}\right]+Max\left[\overline{Fee\ Income};\overline{Fee\ Expense}\right]$$

> **NOTE:**
>
> In the formula above, a bar above a term indicates that it is calculated as the average over three years : t, t-1 and t-2.

Financial Component:

$$FC = \overline{Abs\left(Net\ P\ \&\ L\ Trading\ Book\right)}+\overline{Abs\left(Net\ P\ \&\ L\ Banking\ Book\right)}$$

> **NOTE:**
>
> In the formula above, a bar above a term indicates that it is calculated as the average over three years : t, t-1 and t-2.

The absolute value of net items (eg, interest income – interest expense) should be calculated first year by year. Only after this year by year calculation should the average of the three years be calculated.

The Business Indicator respective components like the Net Values for the 3 years are calculated and stored in the FSI_CAP_OR_NET_BI_COMPONENTS table. Banks would have obtained certain regulatory approvals as per the revised standardized approach to exclude some of the business components from the calculation of BI value. Business Values from their Divested Entities or the Business Values from the Mergers and Acquisitions. Based on the regulatory approval and the application allow the banks to exclude or include these Business Values from the calculation.

In the above table FSI_CAP_OR_NET_BI_COMPONENTS , the Net Values calculated are stored under Net Values along with the V_BI_COMPONENT_IDENTIFIER to identify them , similarly the divested values and the mergers and acquisitions values are identified under DIV and MA, respectively. Before calculating the business values the same are identified under the GROSS Business Identifier.

7.6.1.2 The Business Indicator Component

To calculate the BIC, the BI is multiplied by the marginal coefficients (αi). The marginal coefficients increase with the size of the BI as shown in below table.

For Banks in the first bucket (ie with a BI less than or equal to €1bn) the BIC is equal to BI x 12%. The marginal increase in the BIC resulting from a one unit increase in the BI is 12% in bucket 1, 15% in bucket 2 and 18% in bucket 3.

For example, given a BI = €35bn, the BIC = (1 x 12%) + (30-1) x 15% + (35-30) x 18% = €5.37bn.

BI Ranges and marginal coefficients of BIS as follows

Table 24: BI Ranges and Coefficients

Bucket	BI Range (in Euro Bn)	BI Marginal Coefficients (αi)
1	<= 1 Bn	12%
2	1 Bn < BI <= 30 Bn	15%
3	> 30 Bn	18%

For APRA, as per the APS 115 the first bucket BI Range is less than or equal to 1.5 Billion AUD , the second bucket BI Range is more than 1.5 Billion AUD and less than 45 Billion AUD for third bucket the BI Range is More than 45 Billion AUD.

These calculations are done in the FSI_CAP_OR_CAPITAL_SUMMARY table.

Risk Weighted Asset Calculation is done by multiplying the 12.5 times of the Minimum Operational Risk Capital.

The Flow chart for the Operational Risk based on the Standardized Measurement Approach Calculation handled in the application is as follows.

Figure 40: Flow chart for Operational Risk
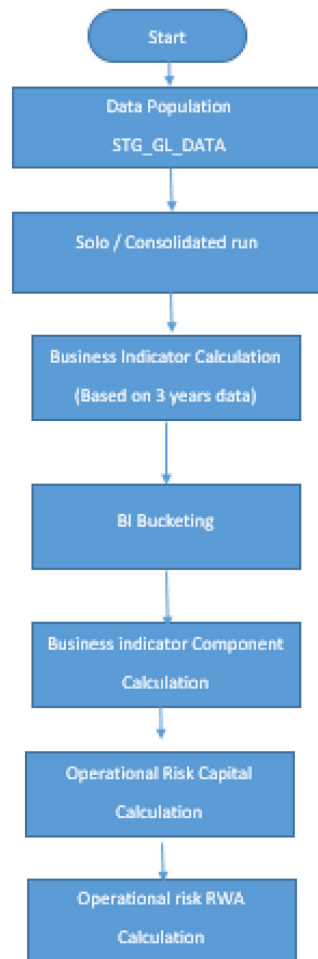
7.7   Capital Structure

During the economic crisis, the global banking system had an insufficient level of high level quality capital. During the crisis, it was identified that there was inconsistency in the definition of capital across jurisdictions and lack of disclosure. To address this issue of inconsistency, the Basel Committee has prescribed a new definition of capital to strengthen the Global Capital Framework under Basel III.

As per the new definition in the Basel III Accord, total capital consists of sum of the following elements:

1. Tier1 Capital, which comprises of the following components:

   - Common Equity Tier 1

   - Additional Tier 1

2. Tier 2 Capital

Each component of capital is subject to restrictions where CET1 must be at least 4.5% of total Risk-Weighted Asset. Tier 1 capital must be at least 6.0% of total risk-weighted asset. Total Capital must be 8.0% of total Risk-Weighted Asset. However, the Total Capital will increase after addition of the

Capital Conservation Buffer, Countercyclical Buffer and Systemic Buffers. Each component of capital undergoes minority interest and regulatory adjustments. The minority interest is applicable for a consolidated entity only, during the consolidation run. Most of the Regulatory Adjustment line items are to be deducted from CET1.

All the Regulatory Adjustment line items follow a phase-in arrangement from the beginning of 2014 till 2017.

While executing Solo Run the Parent Entity Data is processed. Investment into the Subsidiary Data is processed as per Credit Risk and Market Risk Rule. Capital Line Item pertaining to Parent Entity is only processed.

While executing Consolidation Run, the Parent Entity and the Subsidiary Data is considered.

7.7.1   Assumption

Investments in accounting entities (which are outside the scope of regulatory consolidation) by the Parent Bank are long-term investments and mostly equity related instruments, therefore these investments are not processed for Credit Risk Mitigation.

The GL Codes are expected to be unique across entities in Stage General Ledger Data (STG_GL_DATA) and Capital Accounting Head Dimension (DIM_CAPITAL_ACCT_HEAD).

7.7.2   Data Population

Exposure level input for capital structure will flow from different Stage Portfolio Tables.

Along with the portfolio level stage tables, application uses these below table:

Stage GL DATA (STG_GL_DATA),Stage Gl master(STG_GL_MASTER),Stage Party Share Holding Percentage (STG_PARTY_SHR_HLD_PERCENT),Stage Entity Share Holding Percentage (STG_ENTITY_SHR_HLD_PERCENT),Dim Organization Structure (DIM_ORG_STRUCTURE),Stage Standard Accounting Head (STG_STANDARD_ACCT_HEAD),Stage Legal Entity Details (STG_LEGAL_ENTITY_DETAILS), FSI_SETUP_CAPITAL_SOURCE (In this table application stores the CAPID details for example the capital component group or if it is eligible for transition),FSI_SETUP_CAPITAL_HEAD (In this table application stores all the seeded ratios as per regulatory guidelines).

7.7.3   Shareholding Percent Multiplication

Based on the Shareholding Percentage of the Parent Bank in the subsidiary and the consolidation approach to be followed for each of the entity, the Basel Approach is selected.

For example: if the share-holding for an entity is 35% and is part of the consolidation process, then the approach selected for this entity is pro-rata consolidation. The reclassification is performed in task – 'Basel III Capital Consolidation Basel Approach Type Reclassification for an Entity' in the process '**CAPITAL_CONSOLIDATION** AND PARAMETER ASSIGNMENT'.

The entity level population is part of APRA Common Data Processing (PMFCOM020) Process. The application updates the shareholding percentage against each Entity Common Data in the fact capital accounting head from the Fact Entity Shareholding Percent Table and update the Capital Accounting Head Amount multiplying with the shareholding percent of that particular entity. The Parent Data in the Processing Table of Fact Capital Accounting Head is updated with the value 1 and for each Child Entity, the

data is based on the parent's holding percentage specified for each Child in fact Entity Shareholding Percent Table.

7.7.4 Common Reclassification Rules

There is certain reclassification which are specific to the Capital Structure Process – Standard Accounting Head Reclassification, and Entity Type Reclassification.

- **Capital to Standard Accounting Head Reclassification:**
  1. This is the reclassification of the Capital Accounting Head to Standard Accounting Head. In this, all the Capital Accounting Heads of the Bank need to be reclassified into the Standard Accounting Head, as that is the one which is being consumed in the application. This happens in the COMMON_RECLASSIFICATION (PMFCOM005) sub-process process in Common Data Processing (PMFCOM006).

- **Entity Type Reclassification:**
  1. The Entity Type Reclassification is also handled as part of the Party Type Reclassification since there cannot be difference in the Party Type and Entity Type.
  2. This happens in the APRA Other Reclassification (PMFCOM010) Process.

- **Product to Capital Component Group Reclassification:**
  1. This reclassification of the product to the Capital Component Group is based on the Basel Product Type, and this is handled at the individual portfolio tables of Investments and Derivatives. For investments this happens in the process INV_CAPITAL_STRUCTURE_RECLASSIFICATION_STD (PMFINV005) and for derivatives this happens in the DRV_RECLASSIFICATION_STD (PMFDRV012) in the process.

7.7.5 Gross Capital Calculations

For Gross Capital Calculation all the components are classified into their respective tiers (CET1, AT1, and T2) based on the Standard Accounting Head, and the specifications as mentioned by the regulator. The total Gross Capital for each tier of capital (CET1, AT1, and T2) is calculated as per the definition of CET1, AT1, and T2 by adding the relevant financial instrument in each tier of capital. This is processed using sub processes in APRA Capital Structure Processing (PMFAPRCS003) Process.

The Gross Capital Calculation will depend on the Capital Component Group Reclassification. All the entries in the Standard Accounting Table will be reclassified into the various tiers of capital.

In the case of solo Run, only the particular Bank's details will be processed and all other information will not be taken up for further processing.

In the case of Consolidated Run, the Parent Bank and all its subsidiaries details will be processed for further processing.

7.7.5.1   Common Equity Tier 1 capital

Common Equity Tier 1 capital comprise of

1. Paid-up ordinary shares issued by an ADI

2. Paid-up mutual equity interests issued by a mutually owned ADI , upto maximum of 25% of Total CET1

    a. Mutual Equity Interests should be fully paid up. Anything partially paid will be part of AT1 Capital.

3. Mutual Equity Interests inclusion in CET1 capita is limited to 25 per cent of total CET1 capital. Anything above 25% threshold will be part of AT1 Capital.

4. Retained Earnings;

5. Undistributed Current Year Earnings

Current Year Earnings includes Upfront Fee Income contributing to Current Year's Earning

minus:

1. Negative goodwill;

2. The unwinding of any discount on credit loss provisions ;

3. Expected tax expenses; and

4. Dividends;

Above is expected as download by the bank, as consistent with existing CAP ID CAP705 (Eligible profits in current FY - CET1) used in other jurisdictions.

1. AOCI and other disclosed reserves.

2. Minority Interests arising from the issue of ordinary shares to third parties by a fully consolidated subsidiary.

7.7.6   Minority Interest Calculations

Surplus of Minority Interest

Minority Interests are calculated and the surplus amount in each tier of capital, which is attributed to third parties, are deducted from the gross capital of each tier of capital.

Minority Interest is the amount that is attributable to any other party, which is not part of the Bank's entities, and have shareholding in the entity. The surplus of minority interest is calculated as the third party's interest (shareholding percent) in the surplus capital (available capital – minimum required capital).

In the case of Solo Run, there will be no minority interest calculation processed.

In the case of Consolidated Run, the Parent Bank and all its subsidiaries details will be processed for further processing.

The subsidiaries, for which the minority interest will have to be calculated, have to Run the Solo Run first and compute the various tiers of capital and the total RWA. Then these will have to be used as the input for the Consolidated Run for those entities.

- All the values required for processing are populated into Minority Interest Capital (**FSI_MINORITY_INTEREST**) Table which is the Processing Table for minority interest calculations.

- The sub process – MINORITY_INTEREST_CALCULATIONS (PMFAPRACS001) in APRA Capital Structure Processing (PMFAPRCS003) Process covers this processing.

- The Minority Interest is deducted from the Gross Capital of each tier of the capital.

8   Account Clustering

For more information, refer to the Account Clustering section, in the Oracle Financial Services Basel Regulatory Compliance User Guide.

9 User Interface For Reclassification and Regulatory Predefined Values

For more information, refer to the User Interface for Reclassification section, in the [Oracle Financial Services Basel Regulatory Compliance User Guide](#).

10 Multiple data load for a particular date

For more information, refer to the Multiple data load for a particular date section, in the Oracle Financial Services Basel Regulatory Compliance User Guide.

11   Annexure A: Key Concepts

11.1   Slow Changing Dimensions

This component details how to load data from the stage tables into the Slowly Changing Dimension (SCD) tables. SCD Batches are run usually at fixed intervals, for example at the end of each month. There are certain SCDs that have to be run whenever any new data is required to be added for the bank.

When the SCD Batch is executed for the first time it loads all the data in the stage tables for that Extraction Date and it also inserts two records – Missing and Others.

When the batch is run for the next Extraction Date, then the new records are inserted. The End Dates of the modified records are updated with the Extraction Date and new records with the Start Date as the extraction records are inserted. The records that are the same for both Extraction Dates are left untouched.

The SCD Component is delivered through an executable.

Type 1 SCD Methodology

The Type 1 Methodology overwrites old data with new data, and therefore, does not track changes to the data across time. For Example, consider a Dimension table, DIM_PRODUCT.

Table 25: Values in the DIM_Product Table

N_Product_Skey	V_Product_Name	D_Start_Date	D_End_Date	F_Latest_Record_Indicator
1	PL	5/31/2010	12/31/9999	Y

The following is a description of the column names in this table:

- N_Product_Skey is the Surrogate Key Column which is a unique key for each record in the Dimension Table.

- V_Product_Name is the product name.

- D_Start_Date indicates the date from which this product record is valid.

- D_End_Date indicates the date to which this product record is valid.

- F_Latest_Record_Indicator: A value Y indicates this is the latest record in the Dimension table for this product and N indicates it is not.

If the V_Product_Name column is set as a Type 1 and if there is a change in the product name from PL to Personal Loan in the earlier example in the next Processing Period, then the SCD that executed the record in the earlier example is changed.

Table 26: Values in the DIM_Product Table

N_Product_Skey	V_Product_Name	D_Start_Date	D_End_Date	D_End_Date F_Latest_Record_Indicator
1	Personal Loan	6/30/2010	12/31/9999	Y

Type 2 SCD Methodology

The Type 2 method tracks Historical Data by creating multiple records for a given natural key in the Dimensional Tables with separate Surrogate Keys. With Type 2, the historical changes in Dimensional Data are preserved. In the earlier example, for the change in product name from 'PL' to 'Personal Loan' if history is preserved, then the V_Product_Name column is set as Type 2, that is, when SCD is processed for the processing period, it inserts a new record as shown in the following example.

Table 27: Values in the DIM_Product Table

N_Product_Skey	V_Product_Name	D_Start_Date	D_End_Date	F_Latest_Record_Indicator
1	PL	5/31/2010	12/31/9999	Y
1	Personal Loan	6/30/2010	12/31/9999	Y

A new record is inserted into the product Dimension Table with the new product name and the latest record indicator for this is set as 'Y' indicating this is the latest record for the Personal Loan Product and the same flag for the earlier record is set to 'N'.

Prerequisites

The setup tables accessed by the SCD component, including **SYS_TBL_MASTER**, **SYS_STG_JOIN_MASTER** have the required entries. The tables **SYS_TBL_MASTER** and **SYS_STG_JOIN_MASTER** are seeded. You must only add entries in these tables if you add user-defined dimensions.

Tables used by SCD Component

The **Stage Dimension Data Load** tab in the OFS Basel Regulatory Capital SAMA Standardized Approach Runchart excel sheet lists out the SCD Stage and Dimension that are used in the BASEL Application.

No changes are needed in this table if the Standard Key Dimensions are being used within the Basel Application. If any new dimensions are added, the related column details are to be inserted into this table manually.

STG_<dimensionname>_MASTER - is the database table that SCD uses as the source. This table comes as a part of the Data Model.

DIM_<dimensionname> – is the output table to which SCD writes the Dimension Data.

A sequence is added for every user-defined dimension.

For Example,

create sequence SEQ_DIM_<DIM> minvalue 1

max value 999999999999999999999999999

increment by 1

Executing SCD Components

For information on the configuration and execution of SCD Components, see the Operations Section in the Oracle Financial Services Analytical Applications Infrastructure 8.1.2 User Guide.

The Basel Batch created for SCDs is the <infodom>_SCD. Infodom refers to the Information Domain Name.

When the file is being executed you have the choice to either wait till the execution is complete or proceed with the next task. Click the list box of the field provided for Wait in the Value field and select Yes or No. Clicking Yes confirms that you wish to wait for the execution to be completed. Clicking No indicates that you wish to proceed.

Stage Data

In this section, the Stage Data can be populated in either the Product Processors or Other Stage Tables:

- **Product Processor**: An entity in the Basel Regulatory Capital Application that stores data from the Operational Systems of the Bank. This entity is created based on the various financial products that the bank caters to. Stage Tables for Product Processors are categorized as exposure data of Product Processors. The Product Processors of all the jurisdictions are the same, except for the Islamic Banking Jurisdiction.

- Others: Data can be populated into Stage tables, besides using Product Processors, as per the respective jurisdiction.

  For more information on the list of columns to be populated within each table, see the Download Specifications Document.

  The set of sample data to be to be populated for the following tables are listed in the worksheet available in the following location: Sample Data.

- STG_PRODUCT_MASTER

- STG_LOB_MASTER

- STG_MITIGANT_TYPE_MASTER

- STG_PARTY_TYPE_MASTER

  Seeded Data

  The tables are seeded in the installation as per the worksheet available in the following files:

- Seeded_Tables_Data_1

- Seeded_Tables_Data_2

11.2 Exhibit 3: Currency Conversion

SETUP_MASTER table is a setup table, used to provide the setup information of a Run. It can be used to set the default values of Rate Data Source Code or Standard Currency Code. For currency conversion, the rate data source and standard currency are important values. If the rate data source value is missing, then BLOOMBERG is by default considered to determine the Rate Data Source Code from the **DIM_ORG_STRUCTURE** table during currency conversion. If the Standard Currency Code Values are not provided or are missing, then USD is used as the destination currency code from the **DIM_ORG_STRUCTURE** table during currency conversion. This is column under the **DIM_ORG_STRUCTURE** table mapped to these default values are as follows:

Table 28: Column Values for DIM_ORG_STRUCTURE

V_COMPONENT_CODE	V_COMPONENT_DESC	V_COMPONENT_VALUE
DEFAULT_FX_RATE_SRC	Default Rate Data Source Code	BLOOMBERG
STD_CCY_CD	Standard Currency Code	USD

Rule Reporting Currency Code Assignment is set to 'USD' out of the box but can be modified to any other currency. The reporting currency selection can be done in the Run Execution Windows if the Run is executed from the Run Execution Window.

Currency conversion is performed on multiple tables to convert the values from its natural currency to Reporting Currency. The steps which are performed for the currency conversion are as follows:

- The table Stage Forward Exchange Rates **STG_FORWARD_EXCHG_RATES** stores the details about the pair of currencies and the corresponding exchange rate to perform the same with the extraction date for which the forward exchange rate is provided. This table also contains the information about the data source from which the exchange rates are quoted and the tenor which is used to identify the period for which the forward exchange rate is applicable for.

- The data from this table is populated to the **Exchange Rates** fact table through the common batch which is executed in the beginning. The initial data populated hereby contains the default Run Skey which is set to minus 1. Only the records with tenor 0 are used for currency conversion for which the spot exchange rate is required.

- After populating the data in the table, in each Run, all the exchange rates are updated based on the conditions at the time of execution to account for the increase or decrease in the exchange rates. A Rule is used which updates the exchange rates and populates the corresponding Run Skey which is then used for currency conversion in that particular Run. The exchange rates are then moved into the table wherever currency conversion is required. This is performed in the Product Processor data population step.

- Different legal entities can use the Exchange Rates quoted by different data sources. Therefore, the column which contains the information about the data source in the table Exchange Rates is compared with the required data source for a legal entity stored in the Org Structure Dimension (DIM_ORG_STRUCTURE) table.

- After the exchange rate population into the required fact tables, the currency conversion rules are executed which take the values stored in amount columns in natural currency, multiply them with the exchange rate and populate to the Reporting Currency Amount Columns.

  For mitigants table, the Exchange Rate that is used for currency conversion is the exchange rate for the entity of the exposure which the mitigant belongs to. The list of tables and corresponding columns where currency conversion is carried out is available in the following OTN Documentation Library location:

  Currency Conversion Tables and Columns

11.3 Exhibit 4: FSI_CAPITAL_STANDARD_MAPPING Table Mapping

As a part of Basel Capital Structure, information stored in Capital Standard Mapping (FSI_CAPITAL_STANDARD_MAPPING) table is a mapping of GL Capital Line items with seeded data in

Standard Accounting Head Dimension Table (DIM_STD_ACCT_HEAD). This is also required for all the computed fields, so that the computation happens in the application for those standard accounting heads.

For all jurisdictions this mapping must be present which is elaborated in the following worksheet, available in the following OTN Documentation Library location:

FSI CAPITAL STANDARD MAPPING

11.4 Exhibit 5: Data Expectations for few of the Basel Products

11.4.1 Equity Exposures Data Expectations

The Equity Exposures and any other exposures which were expected to be treated under Equity Asset Class of the particular jurisdiction were expected in Stage Equity Exposures (STG_EQUITY_EXPOSURES) till 8.0.3 release of Basel application.

Starting from 8.0.4 release, any exposure which must be treated under Equity Asset Class is expected to be provided in Stage Investments (STG_INVESTMENTS).

For mandate-based approach in Equity Investment in funds when there are no entries in STG_FUND_UNDERLYING_COMPOSITION, application assigns Fall Back Approach to the remaining exposures.

All the required attributes pertaining to Equity Exposures are expected to be provided in Stage Investments (STG_INVESTMENTS) and any Instrument Specific attributes in Instrument Contract Dimension Table (DIM_INSTRUMENT_CONTRACT).

11.4.2 Securities Financing Transaction Related Exposures Data Expectations

The Securities Financing Transaction (SFT) related exposures were expected in Stage Repo Contracts (STG_REPO_CONTRACTS), and all their related collateral were expected in Stage Underlying Exposures (STG_UNDERLYING_EXPOSURES) till 8.0.3 release of Basel Application.

Starting from the 8.0.4 release, there are changes to the capture of the collateral related to the SFT.

- The collateral which the bank has received concerning the SFT Transactions is captured in the Stage Mitigants **STG_MITIGANTS** table, with the SFT Exposure mapped to the collateral received using the Stage Account Mitigant Map **STG_ACCOUNT_MITIGANT_MAP** table.

- The collateral which the bank has placed concerning the SFT Transactions are captured in the Stage Placed Collateral **STG_PLACED_COLLATERAL** with the SFT Exposure mapped to the collateral placed using the Stage Account Placed Collateral Map **STG_ACCT_PLACED_COLL_MAP** table.

  Any Instrument Specific Attributes are expected in the Instrument Contract Dimension Table **DIM_INSTRUMENT_CONTRACT**.

11.4.3 Account Mitigant Mapping Data Expectations

Any account in the product processors, mapped to the various mitigants received were captured in the Stage Exposure Mitigant Mapping **STG_EXP_MITIGANT_MAPPINGS** till 8.0.4 release of Basel Application.

Starting from the 8.0.5.0.0 release of the application, this is expected to be provided in the Stage Account Mitigant Map (STG_ACCOUNT_MITIGANT_MAP) table.

11.4.4 Commitment Contract Data Expectations

Any commitment contracts issued by the Bank were initially expected in Stage LC Contracts (STG_LC_CONTRACTS) till 8.0.4 release of Basel Application.

Starting from the 8.0.5 release of the application, any exposure which a commitment contract is issued by the bank is expected to be provided in the Stage Commitment Contracts **STG_COMMITMENT_CONTRACTS**.

In the case of the commitment contracts issued under a Credit Line Facility, then, the linkage of the Credit Line to the contract is required to be provided. The Credit Line is expected to be populated into the Dimension Credit Line **DIM_CREDIT_LINE table**.

11.4.5 Credit Line Issued Data Expectations

Any Credit Line, issued by the Bank was initially expected in Stage LC Contracts (STG_LC_CONTRACTS) till 8.0.4 release of Basel Application.

Starting from the 8.0.5 release of the application, any exposure which is a line of credit issued by the Bank is expected to be provided in the Stage Credit Line Details (STG_CREDIT_LINE_DETAILS) along with entries in the Dimension Credit Line (DIM_CREDIT_LINE) table.

The Credit Line Table will hold information concerning all the lines of credit issued by the bank. The lines of credit can be drawn for various products like Credit Card (Corporate Credit Cards issued to various employees under a credit line for that corporate), Loan commitments (loan issued to the customer as part of a credit line issued to that customer) and so on. This table will hold all the information related to the credit line, and any undrawn portion related to that credit line.

The drawn portion of the Credit Line, or the portion which has been earmarked for a specific product like credit card, will be part of the corresponding product processor (STG_CARDS, in this example), with the credit line code populated. And under that particular product, there can be both the drawn and undrawn portion, which will be captured in the same product processor (STG_CARDS, in this example).

The undrawn portion of the credit line is the one that is treated as a line of credit, and receives the corresponding Basel guideline specific treatment.

11.4.6 Forward Contract Data Expectations

Any forward agreement or contract was initially expected in Stage Futures (STG_FUTURES) till the 8.0.4 release of the Basel Application.

Starting from the 8.0.5.0.0 release of the application, any exposure that is a forward agreement is expected to be provided in the Stage Forwards **STG_FORWARDS**.

11.4.7   Asset Sold Data Expectations

Any assets sold with recourse were initially expected in Stage Loan Contracts (STG_LOAN_CONTRACTS) till 8.0.4 release of Basel Application.

Starting from the 8.0.5.0.0 release of the application, any exposure which is an asset sold is expected to be provided in the Stage Assets sold (STG_ASSETS_SOLD). This will include all the assets sold by the bank. And the assets sold, for which the bank is retaining recourse will be part of the regulatory capital calculations, and that will be taken up for the Basel-related processing.

11.4.8   Spot Forex Data Expectations

Any Forex Transaction, which is a spot were initially expected in Stage Investments (STG_INVESTMENTS) till the 8.0.4 release of the Basel Application.

Starting from the 8.0.5 release, any Forex Transaction which is a spot contract is expected to be provided in the Stage Forex Contracts (STG_FX_CONTRACTS).

Note: All other forex transactions are expected to be populated in their respective derivative tables (Currency Swap in STG_SWAPS_CONTRACTS and so on).

11.4.9   Underlying Exposures for Derivatives

The underlying exposures for derivatives are now being captured through STG_UNDERLYING_MASTER.

The Data expectation for the underlying relationship for the derivatives is as follows:

- Case 1 – Both Parent derivative contract and underlying of the derivative are instruments:
    - This will involve usage of the two tables for capture of the underlying information – STG_UNDERLYING_MASTER/ DIM_UNDERLYING and STG_UNDERLYING_DTL.
    - The parent account will be in one of the derivative contract, and the relationship between the parent and the underlying will be captured in the derivative tables as Underlying Instrument Code or the Underlying Code.
    - DIM_UNDERLYING will be used to store the static information about the underlying instruments, and STG_UNDERLYING_DTL will be used to store any variable information about the underlying instruments.
    - Data for STG_UNDERLYING_DTL
        - The STG_UNDERLYING_DTL can support the relationship reference of 1 parent to 1 underlying or multiple underlying instruments.
        - In this, the underlying instrument code will be provided as v_instrument_code and the parent's Instrument Code will be provided as v_contract_instrument_code.
        - Both these Instrument Codes will have reference in dim_instrument_contract.
- Case 2 – If Parent Derivative Contract or underlying of the derivative are not instruments but instead are accounts or exposure:
    - This will involve usage of a single table for capture of the underlying information – STG_UNDERLYING_EXPOSURES.

- The Parent Account will be in one of the derivative contract, and the relationship between the Parent and the underlying will be captured in the underlying table as the Parent Exposure ID.

- Data for STG_UNDERLYING_EXPOSURES.

  o The STG_UNDERLYING_EXPOSURES can support the relationship reference of 1 parent to 1 underlying or multiple underlying instruments.

  o In this, the underlying exposure will be provided as v_exposure_id and Parent's Exposure ID in v_parent_exposure_ID.

  o Both these exposure ID's will have reference in dim_exposure.

-

11.5   Exhibit 6: Design Changes

11.5.1   Design Changes for Handling Organization Structure

From Release 8.1.0.0 onwards, for a selected Org Entity and the mode of execution either Solo or Consolidation, the application flattens the Org entries from DIM_ORG_STRUCTURE into a structure as follows:

Example for Dim Org Structure Data

Table 29: Sample Values for DIM_ORG_STRCUCTURE Table

Dim Org Account	Dim Org Parent
A1	A2
A2	A3
A3	A4

If you select, A3 as the Entity and Consolidation as execution type, the following data is populated in the flattened table:

Table 30: List of Data Populated in the Flattened Table

Entity	Parent Entity	Consolidation Parent	Heir Level
A3	A3	A3	0
A3	A2	A3	1
A2	A1	A3	2

All the entities from the Entity column from Consolidation Parent = A3 are picked up and populated into the **FCT_ENTITY_INFO** table.

This step is done to avoid the population of all unnecessary org structure data into FCT_ENTITY_INFO and later it is deleted once they are unused.

11.5.2   Design Changes for Standardization of Asset Class and Rating

It has been seen that across jurisdictions, functionally the treatment of Asset Class mapped to a specific rating are the same, but the regulatory requirement to keep up with the reporting needs is more granular. Though the functionally same, the way both the data are expected by each of the regulators are slightly different, and the nomenclature used is different. Due to this, there was a need for standardization of the Basel Credit Rating and the Basel Asset Class.

The base premise of this standardization is to have the intermediate mapping of the standard values (as referred to by BIS) to the actual values referred to by the regulator.

Asset Class Standardization:

Jurisdiction-specific asset classes are converted into standardized asset class categories which are in turn used for all computation purposes in the application. These asset classes are mapped to the asset class categories based on the specific treatment expected by the jurisdiction.

- DIM_BASEL_ASSET_CLASS_CATEGORY table holds the list of all standardized asset class categories used across jurisdictions.

- FSI_BASEL_ASSET_CAT_MAP_MASTER table is the mapping master table that holds all the asset classes being mapped to their respective asset categories per jurisdiction.

- FSI_BASEL_ASSET_CATEGRY_MAP table holds the run based snapshot per jurisdiction requirement.

    For example, a regulator can expect a treatment for all Corporate Exposures, whereas another regulator can indicate that the treatment is the same, but reporting has to be differentiated into Corporate and Corporate SME Exposures. Both will be mapped to the same category of Corporate.

    Rating Standardization:

    The standardized ratings are converted into the jurisdiction-specific rating requirement, in the form of any band or the actual rating. The standardized ratings are used for the calculation, whereas these rating bands are used for the reporting as per jurisdictional requirements.

    DIM_CAP_REG_RATING holds all the standardized bands that are applicable across jurisdictions.

    FSI_BASEL_RATING_MAP_MASTER is a master table that stores the standardized bands for a process type of SEC, NON-SEC, Market Risk Non Sec, Market Risk Sec, and Sold Credit protection.

    FSI_BASEL_RATING_BAND_MAP table is a Run-based snapshot of FSI_BASEL_RATING_MAP_MASTER loaded for a jurisdiction.

    For example, a regulator can expect a treatment for all AAA to AA- of Corporate Exposures to be risk-weighted at 20%. Another regulator can expect the same treatment but they might be calling it as Credit Quality Step 1, and all exposures of corporate with Credit quality step 1 rating to be risk-weighted at 20%. In this scenario, AAA to AA- and Credit Quality Step 1 are both signifying the same. The rating band will indicate it to be AAA to AA-, and the regulatory rating will be Credit Quality Step 1 as stored in the table FSI_BASEL_RATING_BAND_MAP.

12 Annexure B

12.1 Download Specifications

For information, see Download Specifications.

12.2 Using Process Modelling Framework

12.2.1 Basel CAP PACK Process Modelling Framework Filters and Decision Rules

PMF provides an option to apply Filter Hierarchies at the Run or Business Pipeline level. These filters are similar to the regular filter hierarchies used in rules. They get appended to each task in that business pipeline or Basel Run at Run-time based on the applicability of the filter to that task.

In 8.1.2, CAP PACK makes use of two filter hierarchies, which apply through PMF. The filter hierarchies used are as follows:

Figure 41: Filter Hierarchies

12.2.1.1 Exposure Approach Type

This hierarchy is based on the underlying seeded table FSI_CAP_APPROACH_TYPE_MASTER.

Used mainly to filter data in processing based on the approach selected by the user in the Advanced Run. Approach types are Standardized, Foundation IRB, and Advanced IRB. Further, the approach is broken into the following matrix:

Table 31: Exposure Approach Type

V_APPROACH_TYPE	V_APPROACH_TYPE_DESC
OTH	Others
NSSTD	Non Securitisation Standardized
NSFIRB	Non Securitisation FIRB
NSAIRB	Non Securitisation AIRB
SECSTD	Securitisation Standardized

V_APPROACH_TYPE	V_APPROACH_TYPE_DESC
SECIRB	Securitisation - Internal Rating Based Approach
MRSA	Market Risk Standardised Approach
MRIMM	Internal Models Approach
ORBIA	Basic Indicator Approach (BIA)
ORSA	Standardised Approach (SA)
ORASA	Alternative Standardised Approach (ASA)

For a task, if this table is part of the used tables list, then the filter chosen in the calling business pipeline or run pipeline applies to it. Used tables can be either part of the Dataset (for Rules) or Mapped or NonMapped Column (for T2Ts).

12.2.1.2 Exposure Record Type

This hierarchy is based on the underlying seeded table FSI_CAP_RECORD_TYPE_MASTER. Used mainly to filter data of each portfolio for processing within or across portfolios. Depending upon the portfolio(s) the user picks as part of the Run, the record type decides the type of data to be processed by each task in each portfolio. Record types currently supported are as follows:

Table 32: Type of Exposure Records

V_RECORD_TYPE	V_RECORD_TYPE_DESC
INV_NON_SEC_EXP	Investment Non Sec Exposure
INV_NON_SEC_ULY	Investment Non Sec Underlying
INV_SEC_ULY	Investment Sec Underlying
BNK_NON_SEC_EXP	Banking Non Sec Exposure
BNK_NON_SEC_ULY	Banking Non Sec Underlying
BNK_SEC_ULY	Banking Sec Underlying
DRV_NON_SEC_EXP	Derivatives Non Sec Exposure
DRV_NON_SEC_ULY	Derivatives Non Sec Underlying
DRV_SEC_ULY	Derivatives Sec Underlying
SFT_NON_SEC_EXP	SFT Non Sec Exposure
SFT_NON_SEC_ULY	SFT Non Sec Underlying
SFT_SEC_ULY	SFT Sec Underlying
OTH_PLACED_COLL_EXP	Other Placed Collateral Exposure
SFT_PLACED_COLL_EXP	SFT Placed Collateral Exposure
MITIGANT	Mitigant

V_RECORD_TYPE	V_RECORD_TYPE_DESC
SFT_MITIGANT	SFT Mitigant
OTH	Others

A simplified example of such a case can be Investment Portfolio and Banking Portfolio for which data sources, besides other sources, are as follows:

- Securitization:

    - Product Processor Tables [main exposures]

    - From PP tables to FSI_CAP_INVESTMENT_EXPOSURES.

    - STG_UNDERLYING_EXPOSURES [Investment underlying exposures which are banking products and investment products]

    - From STG_UNDERLYING_EXPOSURES to FSI_CAP_BANKING_EXPOSURES.

- Banking Portfolio:

    - Product Processor Tables [main exposures]

    - From PP Tables to FSI_CAP_BANKING_EXPOSURES.

If the user chooses banking and investment portfolios together in a run, the data movement is as follows:

Table 33: Data Movement for Banking in a Run

Banking				
MAIN EXPOSURE TYPE	SOURCE	ULY EXPSOURE TYPE	TARGET	V_RECORD_TYPE
BANKING	PP TABLES		FSI_CAP_BANKING_EXPOSURES	BNK_NON_SEC_EXP

Table 34: Data Movement for Investment Portfolios in a Run

Investments				
MAIN EXPOSURE TYPE	SOURCE	ULY EXPSOURE TYPE	TARGET	V_RECORD_TYPE
INVESTMENT	PP TABLES		FSI_CAP_INVESTMENT_EXPOSURES	INV_NON_SEC_EXP
INVESTMENT	STG_UNDERLYING_EXPOSURES	BANKING	FSI_CAP_BANKING_EXPOSURES	INV_NON_SEC_ULY
INVESTMENT	STG_UNDERLYING_EXPOSURES	INVESTMENT	FSI_CAP_INVESTMENT_EXPOSURES	INV_NON_SEC_ULY

When banking and investments both execute, the record type filter helps to process exposures as follows:

1. Banking Portfolio:

2. Only those exposures, which have record type as BNK_NON_SEC_EXP in FSI_CAP_BANKING_EXPOSURES.

3. Investment Portfolio:

   a. Exposures, which have record types as INV_NON_SEC_EXP and INV_NON_SEC_ULY in FSI_CAP_INVESTMENT_EXPOSURES.

   b. Exposures, which have record type as INV_NON_SEC_ULY in FSI_CAP_BANKING_EXPOSURES.

The steps to apply filters at Run and Business Pipeline levels are detailed in the OFS Analytical Applications Infrastructure User Guide.

12.2.1.3 Execution and Decision Rules

PMF allows the flow of execution to follow a certain path while running a batch. The decision to include or exclude components in a User-defined Run is based upon the Run Management Options. This allows the user to manage and report data for only those components, which the user has opted through the **Basel Configuration > Run Management** Screen.

Based upon the selections made in the Configuration Screen, a table **FSI_CAP_RUN_EXE_PAREMETERS** is updated with the answers to the questionnaire.

A simple example can be of which portfolios the user has opted. If the user wishes to execute banking and investments only, then a Basel Configuration is created through Run management with this questionnaire. This configuration is selected during Run Execution.

12.2.1.4 Evaluation of Execution Rule

The questionnaire data is captured and pushed into the table **FSI_CAP_RUN_EXE_PAREMETERS**.

The execution rule 'Basel Execution Approach Assignment' reads the data from this table and assigns the values to respective PMF variables.

Figure 42: Execution Rule - Basel Execution Approach Assignment
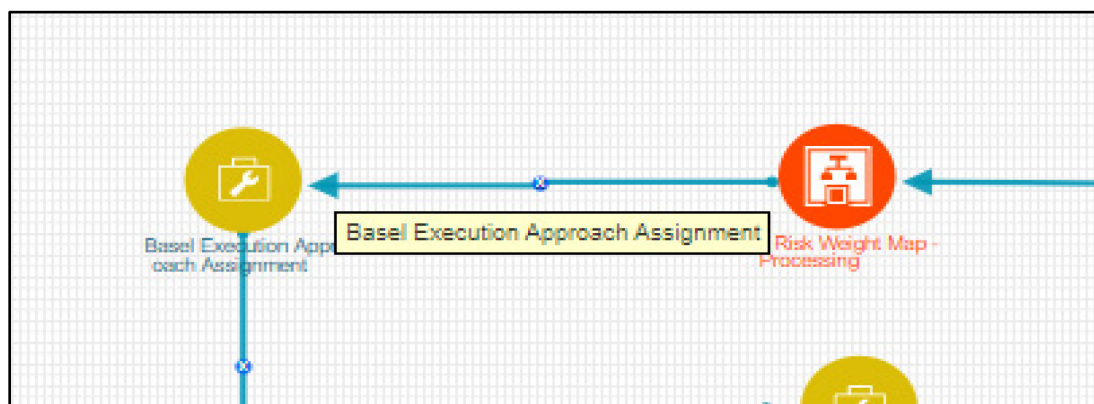
Figure 43: Edit API Details Window

12.2.1.5 Evaluation of Decision Rule

The variables, values for which are assigned in the execution rule, are evaluated in the respective transition lines for each applicable component. If the value matches the expected value in the transition line, then that path is taken.

Figure 44: Evaluation of Decision Rule
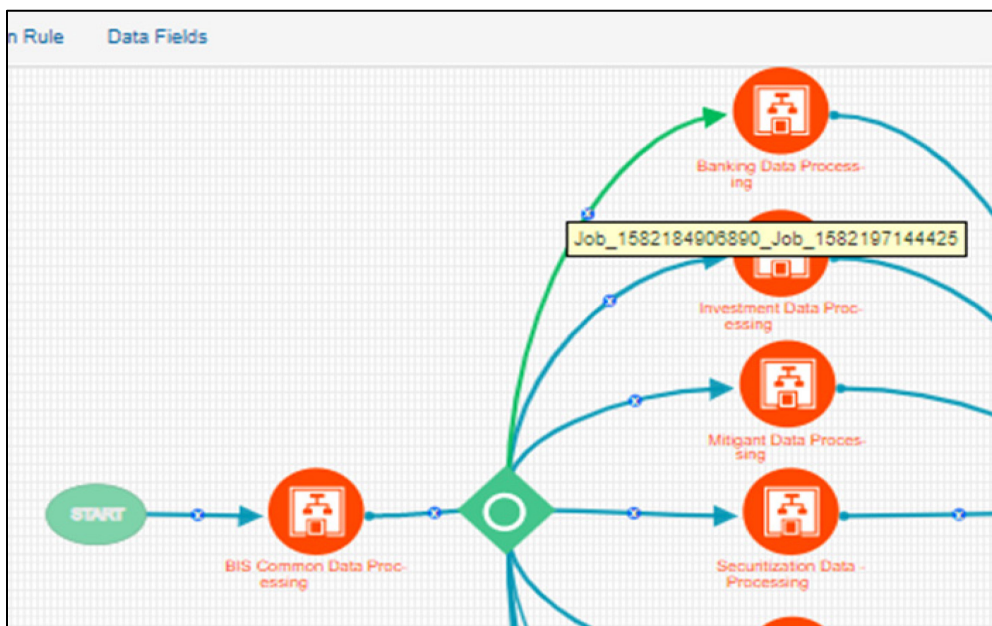
Figure 45: Edit Transition

Figure 46: Edit Decision Rule

12.2.1.6 Deprecation of Uncovered Record Creation DT and New Logic

The DT, Pop_Uncovered_Mitigant, that creates uncovered exposure records in the **FCT_SUB_EXPOSURE** table is deprecated and is replaced with three T2Ts as mentioned as follows:

For the effective optimization of the mitigants, the application used to create a replica of the exposures, with the standard mitigant type as Uncovered. This used to happen with the **DT POP_UNCOVERED_MITIGANT**.

To handle the revised data flow of processing, this is replaced by three T2Ts as follows:

- **T2T_FSI_CAP_NET_POOL_UNCOV_SUB_EXPOSURES**

This T2T creates and inserts one uncovered exposure in FSI_CAP_SUB_EXPOSURES for each nettable pool account from FSI_CAP_NETTABLE_POOL.

- **SUB_EXPOSURES_BANKING_UNCOV_DATA_POP**

    This T2T creates and inserts one uncovered exposure in FSI_CAP_SUB_EXPOSURES for each exposure from FSI_CAP_BANKING_EXPOSURES.

- **SUB_EXPOSURES_INVESTMENT_UNCOV_DATA_POP**

    This T2T creates and inserts one uncovered exposure in FSI_CAP_SUB_EXPOSURES for each exposure from FSI_CAP_INVESTMENT_EXPOSURES.

12.2.1.7 Reuse of PMF Process for Underlying or Placed Collateral Data Processing

An investment portfolio requires banking and derivative underlying for its processing and calculations apart from investment exposures.

The banking and derivative underlying exposures must get the respective portfolio treatment (Risk weighting, AD and so on) while being processed under the investment portfolio.

To achieve the above, the investment portfolio pipeline calls the banking portfolio and derivative portfolio pipeline to process the respective underlying and then use the processed or calculated attributes of these underlying to complete investment processing.

Hence investment portfolio reuses the complete Banking and Derivative Pipeline (PMF process).

These pipelines are called only for the respective underlying by applying proper process filter on record type for underlying. The record type values can be found in FSI_CAP_RECORD_TYPE_MASTER. The process filter will allow only underlying records to be processed when called from the investment pipeline.

The record type process filters that are used are the following:

- BNK_NON_SEC_ULY in Banking Pipeline.

- DRV_NON_SEC_ULY in Derivative Pipeline.

    Securitization Portfolio calls Banking Portfolio Pipeline from within to process non securitized banking underlying exposures which are part of the securitized pool and are required for the overall processing of the securitization portfolio. The Banking Pipeline is called with appropriate record type process filter to process only banking underlying exposures.

    The record type process filter used is BNK_SEC_ULY in the Banking Pipeline.

    Derivative Portfolio and SFT Portfolio pipelines call Mitigant Pipeline from within to provide mitigant treatment (eligibility, mitigant risk weight, and haircut) to their placed collaterals. The Mitigant Pipeline is called with appropriate record type process filter to process only placed collaterals.

    The record type process filters used are the following:

- OTH_PLACED_COLL_EXP in Mitigant Pipeline called in Derivative Portfolio Pipeline.

- SFT_PLACED_COLL_EXP in Mitigant Pipeline called in SFT Portfolio Pipeline.

12.3 Run Parameters Setup for Creating a Run

If the Run Definition has not been created through the Run Management UI, then the USER_DEFINED_RUN_PARAMETERS table must be set up manually for the selected options/approaches

for particular regulation and segment. This table contains the setup codes for different options. However, if you want to add more options, then you can add a record (new setup codes with options) by using information from that are updated for the selected option are given in the following tables:

Regulation: Basel III Post Crisis Reforms

Jurisdiction: APRA

The values for BASEL III Post Crisis Reforms with jurisdiction as APRA and Credit Risk Non-Securitization Approaches

Item Description	Available Options	Applicable Column Name	Applicable Approaches	Default Option
Credit Risk Mitigation Approach	Comprehensive Approach for Collateral Recognition	Crm Method	Standardized Approach	Simple Approach for Collateral Recognition
	Simple Approach for Collateral Recognition			
CDS Index - Data provided has to be decomposed to individual components?	No	Cds Hedge Decomposition For Cva	Standardized Approach	Yes
	Yes			
Supervisory Approval to use Domestic Currency Rating for Loans issued in foreign currency?	Yes	Non Sec Std - Borrower Dom Ccy	Standardized Approach	Yes
Supervisory Approval to use ECA Scores for Risk Weighting?	Not applicable for risk weighting	Non Sec Std - Eca Scores For Rw Of Soverign	Standardized Approach	Not applicable for risk weighting
Risk Weighting Approach	Based on Sovereign Rating	Non Sec Std - Option For Rw Of Banks	Standardized Approach	Based on Sovereign Rating
Risk Weighting Approach	Based on Domestic PSE Rating	Non Sec Std - Option For Rw Of Domsetic Pses	Standardized Approach	Based on Domestic PSE Rating
Volatility and Forex Haircut Estimates	Supervisory Parameters	Non Sec - Haircut Method	Standardized Approach	Supervisory Parameters

Optimization allocation based on	Exposure Amount Post CCF	Optimizer Allocation Basis	Standardized Approach	Exposure Amount Post CCF
	Exposure Amount Without CCF			
Does the Regulator Allow Exposures funded and denominated in same currency to be Risk Weighted at 0%	Yes	Risk Weight Based on National Discretion	Standardized Approach	Yes
Does Regulator Allow Usage of External Ratings for Risk Weighting?	Yes	Risk Weight Option External Rating	Standardized Approach	Yes

The values for BASEL III Post Crisis Reforms with jurisdiction as APRA and Counterparty Credit Risk

Item Description	Available Options	Applicable Column Name	Applicable Approaches	Default Option
Recognition of Offset across Maturity Buckets for Interest Rate Risk Category	No	IR Bucket Offset Option	Counterparty Credit Risk	Yes
	Yes			
Supervisory Approval to include SFTs for CVA calculation?	No	Include Sft For Cva	Counterparty Credit Risk	Yes
	Yes			
Credit Valuation Adjustment - Capital Calculation Approach	Standardized Approach	Cva Method	Counterparty Credit Risk	Standardized Approach
Derivative Transactions - EAD Calculation Approach	Current Exposure Method	Non Sec - Otc Approach	Counterparty Credit Risk	Standardized Approach - CCR
	Standardized Approach - CCR			
Securities Financing Transactions - EAD Calculation Approach	Comprehensive Approach for Collateral Recognition	Non Sec - Sft Approach	Counterparty Credit Risk	Simple Approach
	Simple Approach			
Derivatives Exposure At Default	Computed by System		Counterparty Credit Risk	Computed by System

	Provided by Bank	Derivatives EAD Calculation Option		
Risk Category Identification Approach Selection for Instruments belonging to multiple risk categories	Fall-Back Approach	SACCR Multiple Risk Approach	Counterparty Credit Risk	Sensitivity-based Method and Fall-Back Approach
	SA-CCR Method and Fall-Back Approach			
	Sensitivity-based Method and Fall-Back Approach			

The values for BASEL III Post Crisis Reforms with jurisdiction as APRA and Rating Assessment

Item Description	Available Options	Applicable Column Name	Applicable Approaches	Default Option
Basis for eligible rating in multiple assessment	Rating Rank	Multiple Assessment Rating Eligibility Basis	Rating Assessment	Risk Weight Rank
	Risk Weight Rank			

The values for BASEL III Post Crisis Reforms with jurisdiction as APRA and Operational Risk Approach

Item Description	Available Options	Applicable Column Name	Applicable Approaches	Default Option
Basel Operational Risk Capital Charge Computation Level	Entity Level	Basel Operational Risk Capital Charge Level Option	Standardized Approach	Entity Level
	LOB Level			
Exclusion of Divested Activities In BI Calculation	No	Supervisory Approval For Excluding Divested Activities	Standardized Approach	No
	Yes			
Exclusion of Mergers And Acquisitions In BI Calculation	No	Supervisory Approval For Excluding Mergers And Acquisition Activities	Standardized Approach	No
ILM Value To Be Considered For Calculation	Supervisory Defined ILM Value	Supervisory Approval For Internal Loss Multiplier Override	Standardized Approach	Supervisory Defined ILM Value

The values for BASEL III Post Crisis Reforms with jurisdiction as APRA and Capital Structure and Capital Buffers

Item Description	Available Options	Applicable Column Name	Applicable Approaches	Default Option
Buffer Allocation Priority	Capital Conservation > Countercyclical > Systemic Risk	Buffer Allocation Priority Option	Capital Structure and Capital Buffers	Capital Conservation > Systemic Risk > Countercyclical
	Capital Conservation > Systemic Risk > Countercyclical			

Column details from the Fsi Run Parameter table for the physical column name and the physical code used for the RMO options are available in this sheet.

12.3.1 Selecting Run Definition for Execution

The Run Definition can be selected by searching or scrolling in the "Regulatory Definition" field while triggering a Run Execution.

Figure 47: Select Run Parameters

12.3.2 Importing Run Definitions

To import the DMP file, perform the following steps:

1. Rename or delete the existing OOB Definitions in the setup.

2. Navigate to the directory path `$FIC_HOME/utility/Migration/conf/`.

3. Create a copy of the file `OBJECTMIGRATION_template.xml` as `OBJECTMIGRATION.xml` and provide appropriate values for the parameters as per the following table:

Table 35: Parameters for the File OBJECTMIGRATION.xml

Parameter	Value
$USERID$	Application User ID
$LOCALE$	Locale Information
$INFODOM$	Information Domain
$FOLDER$	Folder or Segment where you wish to import the definition
MODE	IMPORT
$FILE_NAME$	BASEL_RUN_DEFINITIONS_EU
MIGRATION_CODE$	11

4. Place the required codes of the definitions that you want to import within the OBJECTS tag.

   Example: `<OBJECT Code="1000" Type="4003" />`

   To find the object codes, you must perform the following steps:

   i. Execute the following query in the atomic schema to check the existing **N_RUN_PARAM_DEFN_I**D that are in use.

   SELECT * FROM FSI_RUN_PARAM_DEFINITION_TL;

   ii. Use the Object Code in OBJECTMIGRATION.xml which does not exist in the **N_RUN_PARAM_DEFN_ID** column.

   > **NOTE:**
   >
   > The type must have the value 4003 which represents Regulatory Calculation Definitions.

5. Create the following folder structure in the path `$FIC_HOME/utility/Migration`:

   `metadata/restore`

6. Copy the dump file from the installer and place it in the directory path `$FIC_HOME/utility/Migration/metadata/restore`

7. Execute the following script located in the directory path `$FIC_HOME/utility/Migration/bin/`:

   `./ObjectMigration.sh`

Check the availability of definitions in the UI. Migration logs are available in the directory path `$FIC_HOME/utility/Migration/logs/migration.log`.

12.3.3   Exporting Optimizer, Portfolio and Run Definitions

1. Navigate to the directory path `$FIC_HOME/utility/Migration/conf/`.

2. Create a copy of the file `OBJECTMIGRATION_template.xml` as `OBJECTMIGRATION.xml` and provide appropriate values for the parameters as per the following table:

   Table 36: Parameters for the File OBJECTMIGRATION.xml

Parameter	Value
$USERID$	Application User ID
$LOCALE$	Locale Information
$INFODOM$	Information Domain
$FOLDER$	Folder or Segment of the existing definition
MODE	EXPORT
$FILE_NAME$	Name of the file to be exported without the .dmp extension
MIGRATION_CODE$	11

3. Place the required codes of the definitions that you want to export within the OBJECTS tag.

For example, `<OBJECT Code="1000" Type="4003" />`

To find the object codes, perform the following steps:

1. Execute the following query in the Atomic Schema for run definitions:

   ```
   SELECT * FROM FSI_RUN_PARAM_DEFINITION_TL;
   ```

   N_RUN_PARAM_DEFN_ID is the object code and value of Type is 4003.

2. Execute the following query in the Atomic Schema for portfolio definitions:

   ```
   SELECT * FROM FSI_PORTFOLIO_MASTER;
   ```

   N_PPORTFOLIO_ID is the object code and value of Type is 4002.

3. Execute the following query in the atomic schema for Optimizer definitions:

   ```
   SELECT * FROM FSI_BASEL_OPTIMIZER_MODEL_TL;
   ```

4. N_MODEL_ID is the object code and the value of Type is 4001.

5. Execute the following script in the directory path `$FIC_HOME/utility/Migration/bin`:

   ```
   ./ObjectMigration.sh
   ```

   The Dump is available in the directory path `$FIC_HOME/utility/Migration/metadata/archive`.

   The migration logs are available in file `migration.log` in the directory path `$FIC_HOME/utility/Migration/logs`.

12.4 Data Transformation Details for Portfolio or Module

This section lists the Data Transformation (DT) details for each Portfolio or Module.

See Oracle Financial Services Basel Data Transformation Details Document for more details.

12.4.1 DT Details - Banking

Table 37: List of Data Transformations for Banking

DT TASK NAME	PROCESS CODE	PROCESS NAME
Bnk_Map_Ret_Exp	PMFAPRBNK012	APRA Bank Regulatory Retail Portfolio
Bnk_Issue_Issuer_Assessment	PMFAPRBNK011	APRA Bank Issue Issuer Assessment

12.4.2 DT Details - Investment

Table 38: List of Data Transformations for Investments

DT TASK NAME	PROCESS CODE	PROCESS NAME
Inv_Ind_Mat_Chk_CE_CR_STD	PMFAPRINV008	APRA Investment Pre CRM EAD Computation - STD
Inv_Issue_Issuer_Assessment	PMFAPRINV007	APRA Investment Issue Issuer Assessment

12.4.3 DT Details - Derivative

Table 39: Data Transformation Details for Derivatives

DT TASK NAME	PROCESS CODE	PROCESS NAME
Drv_Issue_Issuer_Assessment	PMFAPRDRV007	APRA Derivatives Issue Issuer Assessment

12.4.4 DT Details - Secured Financial Transactions (SFT)

Table 40: Data Transformation Details for SFT

DT TASK NAME	PROCESS CODE	PROCESS NAME
Sft_Issue_Issuer_Assessment	PMFAPRSFT008	APRA SFT Issue Issuer Assessment

12.5 Implementing Basel

12.5.1 Rules List for Configuration

The list of rules which customer needs to reconfigure at their site are the following:

Table 41: Rules List for Configuration

Functionality	Reclassification Rule Name
Common	Basel III Capital Consolidation Approach Type Reclassification for an Entity
Common-8.1.2.0.0 only	Credit Rating Reclassification
Common-8.1.2.0.0 only	Party Type Reclassification - STD

Functionality	Reclassification Rule Name
Common-8.1.2.0.0 only	Seniority Reclassification
Counterparty Credit Risk	Netting Agreement Mitigant Type Reclassification - SA - CCR
Counterparty Credit Risk, Market Risk--8.1.2.0.0 only	Basel III Instrument Type Reclassification
Capital Structure	Cap Consl Basel Entity Type Reclassification
Market Risk	MR PC Instrument Type Reclassification - Convertible Bond
Market Risk	MR PC Instrument Type Reclassification - Credit Derivatives
Market Risk	MR PC Instrument Type Reclassification - Exotic Instruments
Market Risk	MR PC Instrument Type Reclassification - Forwards and Futures
Market Risk	MR PC Instrument Type Reclassification - Hybrid Instruments
Market Risk	MR PC Instrument Type Reclassification - Options
Market Risk	MR PC Instrument Type Reclassification - Swaps
Operational Risk	OR Internal LoB to Standard LoB Reclassification
Large Exposures	Party Relationship Type Reclassification

12.5.2   Custom Reclassification Rules

See Configure Rule with Target Members for more information on Custom Reclassification Rules.

12.5.3   Seeded Values Used

To view the seeded values for the following Seeded tables, see Seeded_Tables_Data.

12.6   Basel Analytics Table Population - Reporting T2T

This section provides information on the target and the granularity of tables. See Oracle Financial Services Basel Analytics User Guide for more information.

13   Glossary

BCBS	Basel Committee on Banking Supervision
Bankruptcy Remote	In case of liquidation of the company, if the collateral is bankruptcy remote then the legal proceeding does not have the right to liquidate the collateral.
BIS	Bank of International Settlements
CAR	Capital Adequacy Ratio
Central Counterparty (CCP)	Central Counterparty (CCP) is a clearinghouse that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the future performance of open contracts.
CCB	Capital Conservation Buffer
CCF	Credit Conversion Factor
CCR	Counterparty Credit Risk
CET1 Ratio	Common Equity Tier 1 Ratio
Clearing Member (CM)	Clearing Member (CM) is a member of, or a direct participant in, a CCP that is entitled to enter into a transaction with the CCP, regardless of whether it enters into trades with a CCP for its own hedging, investment or Capitalization of exposures to central counterparties.
Clearing Member Client (CMC)	Clearing Member Client (CMC) is the client of the Clearing Member and trades are done through clearing member for the client.
CRE	Commercial Real Estate
CRM	Credit Risk Mitigants
CVA	Credit Valuation Adjustment
EAD	Exposure At Default

GL	General Ledger
IRB	Internal Rating Based
LGD	Loss Given Default
OFSAA	Oracle Financial Services Analytical Application
OFSAAI	Oracle Financial Services Analytical Application Infrastructure
OTC	Over the Counter
Non-Securitization Exposure	The exposures that are not securitized by the bank which include, loans, investments, Bonds, Facilities Purchase Receivables and so on are known as Non-Securitized Exposures.
PD	Probability of Default
Private Sector Credit Exposure	A private sector credit exposure is defined as an exposure to a company or an individual that is included in credit risk-weighted assets (excluding an exposure to a sovereign, the Bank for International Settlements, the European Central Bank, the European Commission, the International Monetary Fund, a multilateral development bank (MDB), a public sector entity (PSE), or a government sponsored entity (GSE). The geographic location of a private sector credit exposure is the national jurisdiction of the place the borrower is located in.
Qualifying Central Counterparty (QCCP)	A qualifying central counterparty (QCCP) is an entity that is licensed to operate as a CCP (including a license granted by way of confirming an exemption), and is permitted by the appropriate regulator/overseer to operate as such with respect to the products offered. This is subject to the provision that the CCP is based and prudentially supervised in a jurisdiction where the relevant regulator/overseer has established, and publicly indicated that it applies to the CCP

	on an ongoing basis, domestic rules and regulations that are consistent with the CPSS-IOSCO Principles for Financial Market Infrastructures.
RRE	Residential Real Estate
RWA	Risk-weighted Assets
SCD	Slowly Changing Dimension
SFT	Securities Financing Transactions
T2T	Table to Table

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