Oracle Financial Services Liquidity Risk Management

User Guide

Release 2.0

September 2013

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Document Control

Version Number	Revision Date	Changes Done
Version 2.0	April 2012	Details the process flow and methodologies used in the computation and management of Liquidity Risk.
Version 2.0.1.0.0	June 2013	Setup Role Management was newly introduced as a type of data to be configured in the application.
Version 2.0.1.1.0	September 2013	The following sections have been added: Annexure F: Multiple Segments Annexure G: Time Bucket Annexure H: Configuring limit Management

About the Guide

This section provides a brief description of the scope, the audience, the references, the organization of the User Guide and conventions incorporated into the User Guide. The topics in this section are organized as follows:

- Scope of the Guide
- Audience
- Where to Find Information
- How to Use this User Guide
- Document Conventions

Scope of the Guide

The objective of this User Guide is to provide a comprehensive working knowledge on Oracle Financial Services Liquidity Risk Management, Release 2.0. This User Guide is intended to help you understand the key features and functionalities of Oracle Financial Services Liquidity Risk Management (LRM) Release 2.0 and details the process flow and methodologies used in the computation and management of Liquidity Risk.

However, this User Guide is not meant to give details on the installation and handling of Oracle Financial Services Analytical Application Infrastructure (OFSAAI). This User Guide is also not meant to provide details on the installation of Oracle Financial Services Liquidity Risk Management, Release 2.0.

Audience

This manual is intended for the following audience:

- Business User: This user reviews the functional requirements and information sources, like reports.
- Strategists: This user identifies strategies to maintain an ideal Liquidity ratio and Liquidity gap based on the estimated inflow and outflow of cash.
- Data Analyst: This user would be involved with cleaning, validation and importing of data into the OFSAA Download Specification Format.

Where to Find Information

For additional information on Oracle Financial Services Liquidity Risk Management, Release 2.0, refer to the following documents:

- Business Metadata Documents: These documents are grouped into two sets as follows:
  - Oracle Financial Services Liquidity Risk Management V2.0 Business Metadata.xls: This document contains the definitions of the Business Metadata like Measures, Business Processors, Hierarchies, Hierarchy Attributes, Aliases, Derived Entities and Datasets in the LRM Application.
  - Oracle Financial Services Liquidity Risk Management V2.0 Rule Metadata.xls: This document contains the definitions of Rules, Pooling, Optimizer and Processes.
- Download Specifications: The format and structure of the RDBMS tables is specified in the Download Specifications (DL Specs) Document. Download Specifications document contains details of the attributes required for processing the LRM Application.
- *OFSAAI* Infrastructure documents: The set of OFSAAI documents packaged in the installer, to help you understand the functions of the various components of the Oracle Financial Services Analytical Application Infrastructure (OFSAAI).

- Oracle Financial Services Liquidity Risk Management, Release 2.0, Installation Manual.

How to use this User Guide

The information in this User Guide is divided into the following chapters

- Chapter 1 "Introduction": The main objective of this chapter is to introduce you to Oracle Financial Services Liquidity Risk Management, Release 2.0 and explain the scope of the LRM Application.
- Chapter 2 "Understanding the LRM Application": The main objective of this chapter is to provide a detailed explanation of the various functionalities of Oracle Financial Services Liquidity Risk Management, Release 2.0.
- Chapter 3 "Preparing for Execution": The main objective of this chapter is to provide a detailed explanation on the activities to be performed before execution of Runs such as data configuration and defining business assumptions.
- Chapter 4 "Execution": The main objective of this chapter is to provide a step by step understanding on the procedure to execute a run and thereafter apply counterbalancing strategies.

Document Conventions

Certain practices have been incorporated into this document, to help you easily navigate through the document. The table given below lists some of the document conventions incorporated into this User Guide:

Conventions	Description
Bold	User Interface Terms
Italics	• Cross References • Emphasis • Glossary Terms

Table 1: Document Conventions

The other document conventions incorporated into this User Guide are as follows:

- Oracle Financial Services Liquidity Risk Management, Release 2.0 has been referred to as LRM Application in this User Guide.
- In this document, a Note is represented as follows:

Important or useful information has been represented as a Note.

1. Introduction

Liquidity Risk Management (LRM) has emerged as a critical risk management function for banking institutions, as regulators increasingly require banks to have a robust liquidity management framework in place. As per the Basel Committee on Banking Supervision (*BCBS*), "*liquidity is the ability of a bank to fund increases in assets and meet obligations as they come due, without occurring unacceptable losses*".[1] Oracle Financial Services Liquidity Risk Management, Release 2.0, is designed to address liquidity risk of banking institutions across the world. It allows institutions to comply with the Individual Liquidity Adequacy Standards (*ILAS*) or similar standards issued by other regulators. The objective of the LRM Application is to provide a control system to financial institutions to help them identify, measure, monitor, and manage liquidity risk.

1.1. Scope of the Application

Oracle Financial Services Liquidity Risk Management, Release 2.0 supports the following functionalities:

- Supports storage and reporting of cash flows (*BAU*, Stress) across natural, local and reporting currencies.
- **Liquidity Gap Calculation**

  Calculate liquidity gaps under the following scenarios:

  - Contractual: where cash inflows and outflows are considered to take place on contractual terms. *For more information on Contractual Execution, see "Contractual Run Definition and Execution" on page 13.*
  - Business as Usual (BAU): In a BAU scenario, various business assumptions are applied to the contractual cash flows and gaps are re-calculated. *For more information on BAU Execution, see "BAU Run Definition and Execution" on page 32.*
  - Stress Scenario: In a Stress Scenario, certain stressed business assumptions are applied to the BAU cash flows and gaps are re-calculated. *For more information on Stress Scenario, see "Stress Scenario Definition" on page 33.*

  There are 24 pre-configured business assumptions packaged as part of the LRM Application which are used for BAU as well as Stress Scenarios. *For more information on the business assumptions, see "Business Assumption Definition" on page 13.*
- Define stress scenarios and create a library of rule shocks: Multiple stress scenarios can be configured using the above mentioned Business Assumption types and parameters.
- Ability to execute Business As Usual (BAU) and Stress Runs across multiple legal entities and support Solo and Consolidated Runs.
- **Liquidity Coverage and Funding Concentration Calculation**

  Calculate the following as per Basel III Guidelines:

  - Liquidity coverage ratio
  - Net stable funding ratio
  - Funding concentration is calculated on the basis of following dimensions:
    - Currency
    - Product

[1] As defined by BCBS in Principles of Sound Liquidity Risk Management and Supervision published in September 2008

- Customer

- **Defining Counterbalancing Strategies**

  Ability to define counterbalancing strategies to minimize the gaps identified as part of a BAU or a Stress Run. The following types of counterbalancing positions are supported in order to define counterbalancing strategies:

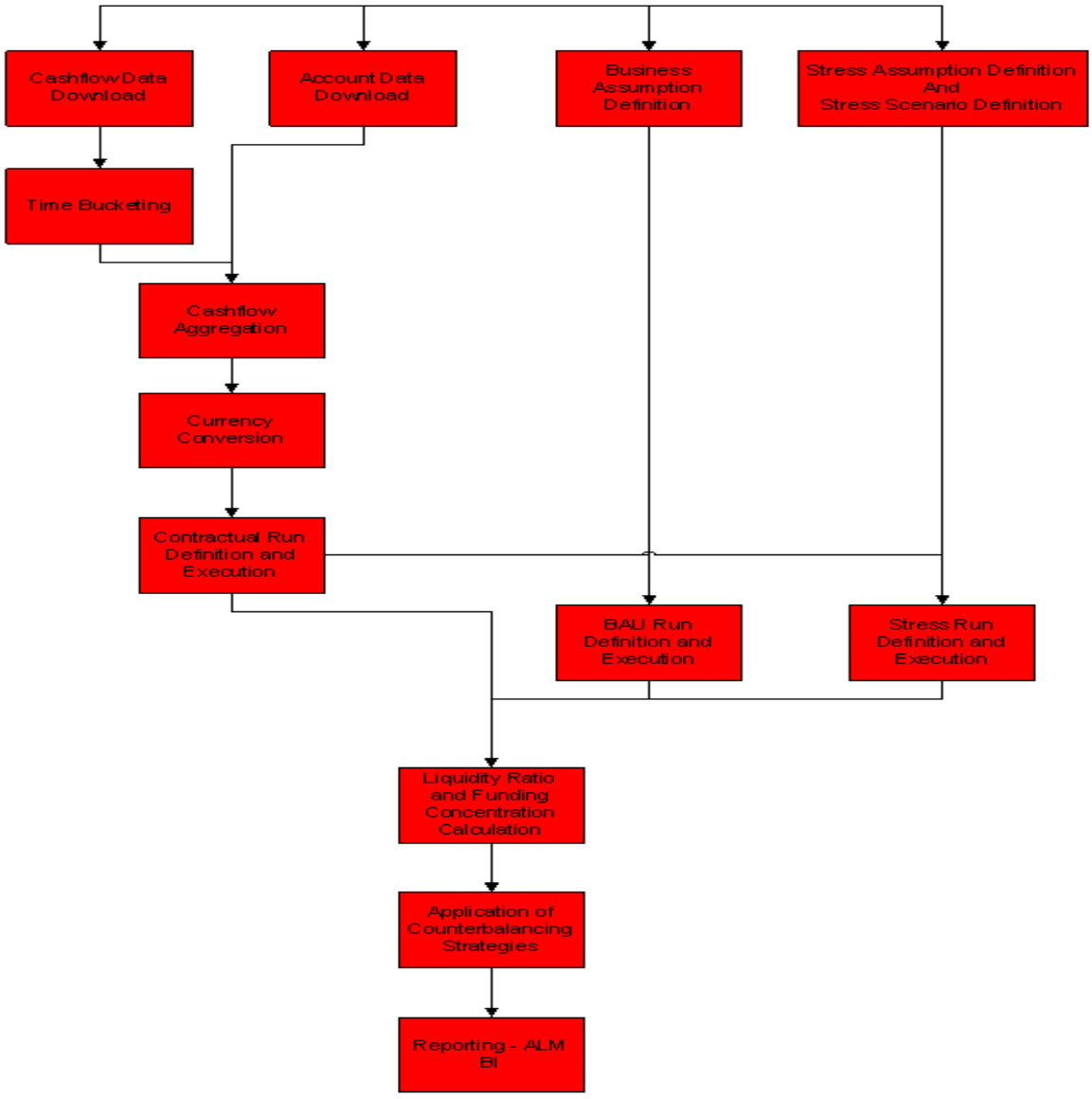
  - Sale of Marketable Assets
  - Sale of Other Assets
  - Roll Over of existing Repos
  - Create a New Repo Deal
  - New Funding like Deposits, Primary Issuances, Borrowing and so on.

2. Understanding the LRM Application

The main objective of this chapter is to familiarize you with the various functionalities of Oracle Financial Services Liquidity Risk Management, Release 2.0, through the process flow. The logical order, in which the LRM Application functionalities are executed, will help you understand, execute, and maintain data in the LRM Application.

2.1. Process Flow

Oracle Financial Services Liquidity Risk Management, Release 2.0, allows you to identify and monitor liquidity risk, through the Liquidity Risk Gap Report. Liquidity Risk is managed by the LRM Application through the following functionalities as represented in the given diagram:



LRM Process Flow

2.2. Cash Flow Data Download

The cash flow data is to be provided as a download by the bank. This data is transformed and loaded to **FCT_PROCESS_CASHFLOW** from **STG_ACCOUNT_CASH_FLOWS**.
FCT_PROCESS_CASHFLOW contains the cash flow amount and cash flow date of all the accounts. The

cash flows are further bucketed and moved to **FCT_ACCOUNT_CASH_FLOWS** table based on the defined Liquidity Risk time buckets.
For more information on the Data Flow, see "Annexure B: Understanding the LRM Data Flow" on page 115.

2.3. Time Bucketing

Time Bucketing is the process of allocating cash flows to defined time intervals to identify, measure, and manage liquidity risk. The purpose of time bucketing is to increase operational efficiency as it helps save time in measuring liquidity risk on cash flows on a daily basis.

2.3.1. Input

Inputs required for Time Bucketing are as follows:

- Defining time buckets.
- Cash flows and cash flow dates.
- Legal entity details of the account to which the cash flow relates to.
- Country specific holiday list.

2.3.2. Time Bucketing Process Flow

Time bucket definitions are uploaded in the **DIM_RESULT_BUCKET** table.
For more information on the setup processing tables, see "Data Requirements*" on page 40.*
Once time buckets are uploaded it can be viewed in the Time Buckets screen. *To view the Time Buckets Screen and the relevant descriptions of each field, see "Annexure A: Screen Format" on page 56*. The process flow for Time Bucketing is as follows:

1. Calculate the number of holidays between the execution date and cash flow date
2. Calculate number of business days for a cash flow on the basis of cash flow date and holidays
3. Assign the cash flow to the time buckets on the basis of the business days

Calculate the number of holidays between the execution date and cash flow date: Oracle Financial Services Liquidity Risk Management, Release 2.0, supports multiple holiday calendars to enable multi-jurisdictional estimation of liquidity gaps in each time bucket based on business days. Each legal entity is mapped to a country and each country has a corresponding holiday calendar. The number of holidays between the execution date and cash flow date is determined by looking up the calendar corresponding to the legal entity of the cash flow. The LRM Application stores the list of holidays in two tables **FSI_HOLIDAY_MASTER** and **FSI_HOLIDAY_DETAIL** corresponding to the relevant country. **FSI_HOLIDAY_MASTER** stores the calendar ID of each country and **FSI_HOLIDAY_DETAIL** stores the list of holidays against the given IDs.

The time bucketing module supports multiple calendars. The holiday calendar for each cash flow is selected based on the calendar corresponding to the country to which the cash flow belongs to. The country of origin is determined based on the legal entity mapped to it which is an attribute of each cash flow.

Calculate number of business days for a cash flow on the basis of cash flow date and holidays: Once the number of holidays between the execution date and cash flow date is known using the holiday list, the days of the cash flow is computed and subsequently assigned to the corresponding time bucket. The business day convention used for cash flows falling on holidays will be as per the selection made by you while executing the Run. *For more information on selection of business day convention while executing a Run, see "Executing a Run" on page 48.*
The business day conventions supported by the LRM Application are as follows:

- No Adjustment: No holiday adjustments are made to the cash flows and the cash flow is assigned to the time bucket accordingly.
- Prior: All the cash flows which occur on a holiday are shifted to the previous business day and allocated to a time bucket accordingly.
- Following: All the cash flows which occur on a holiday are shifted to the next business day and allocated to a time bucket accordingly.
- Conditional Prior: All the cash flows which occur on a holiday are shifted to the previous business day only if the cash flow date and previous business day falls within the same time bucket or else the cash flow is shifted to the next business day and allocated to a time bucket accordingly.
- Conditional Following: All the cash flows which occur on a holiday is shifted to the next business day only if the cash flow date and next business day falls within the same time bucket or else the cash flow is shifted to the previous business day and assigned to a time bucket accordingly.

○You also have the flexibility of selecting three levels of time buckets (Level 0, Level 1 and Level 2). These levels can be used for defining business assumptions. Although data in FACT tables are stored in Level 0, business assumptions can be applied to Level 0, Level 1 as well as Level 2. Level 0 time buckets refer to time buckets that are defined at the highest level of granularity. These are subsequently grouped together to form lower levels of granularity of time buckets.

○The LRM Application applies the business assumptions at a time bucket level and not on an individual cash flow.

Assign cash flow to the time buckets on the basis of the business days: As mentioned earlier, in the LRM Application time buckets are defined on the basis of business days (ignoring holidays which is available in the holiday calendar). Each cash flow is assigned to its respective time bucket based on the cash flow date, the holiday calendar and the business day convention. For example: if the first time bucket is over night, second time bucket is business days 1 to 7 and third time bucket is business days 8 to 14, then the process of assigning cash flows is as follows:

- If the business day of the cash flow is 0 then it is assigned to the first time bucket.
- If the business day of the cash flow is 4 then it is assigned to the second time bucket.
- If the business day of the cash flow is 9 then it is assigned to the third time bucket.

The method used to calculate the business days of the cash flow are as follows:

Business days for cash flow = Execution Date – Cash Flow Date – (Number of Holidays between Execution Date and Cash Flow Date)

2.4. Cash Flow Aggregation

Once the cash flow is assigned to a time bucket, then all the cash flows are aggregated on the basis of 48 dimensions that are the attributes of the cash flow and are loaded into **FCT_AGG_CASH_FLOWS**. The LRM Application applies specific business assumptions at the aggregated cash flow level and not at the individual cash flow level.

For more information on the Data Flow, see "Annexure B: Understanding the LRM Data Flow" on page 115.

2.5. Currency Conversion

Currency conversion is the next step in the process flow. All the input data is captured in its natural currency, that is, all cash flows are generated in the natural currency. Currency conversion, converts the cash flow from its natural currency to the local or reporting currency based on the prevailing spot rates or forward rates, as specified by you.

The features of currency conversion in the LRM Application are as follows:

- Option to select forward exchange rate or spot rate for currency conversion.
- Forward exchange rate is interpolated to the cash flow date using linear or log linear interpolation method, as specified by you.
- If a direct quote between currencies is not available then an indirect quote is used. For currency pairs that do not have a quotation against each other, either direct or indirect, the cross exchange rate is calculated using the direct quotes available against US Dollar (USD) for each currency, as USD is considered as the base currency in each quote. The base currency can be configured in the **SETUP MASTER** table.

2.5.1. Input

Inputs required for currency conversion are as follows:

- Interpolation method to be used.
- Cash flows in natural currency
- Specification of local and reporting currency
- Spot rates between all the natural, local, and reporting currencies
- Forward exchange rates between the natural, local, and reporting currencies
- Selection of rate to be applied on each currency, that is, spot rate or forward exchange rate

2.5.2. Currency Conversion Process Flow

The process flow for currency conversion is as follows:

1. **For currency conversion the direct quote or the indirect quote (as per availability) is derived**
2. **For each currency, the rate to be used, that is, spot rate or forward exchange rate is to be specified**

   For currency conversion the direct quote or the indirect quote is derived: For Example: To derive the conversion rate between GBP to JPY, the LRM Application first checks for a direct quote. If a direct quote is unavailable then the LRM Application checks for an indirect quote, that is, a JPY to GBP Rate. If an indirect quote is also not available, a cross currency rate with USD as the base currency is considered (base currency can be configured in the **SETUP_MASTER** table) that is, the rate between GBP and USD and the rate between JPY and USD is derived to arrive at the conversion rate between GBP and JPY.

   For each currency, the rate to be used, that is, spot rate or forward exchange rate is to be specified: On the basis of the input, the exchange rate between currencies is obtained for conversion. For forward exchange rate the mid points of all the defined time buckets are calculated. Forward exchange rates are interpolated for all the currency combinations provided by the bank at the midpoint of all the time buckets. For example: Forward rate for GBP and JPY is available at Spot, 30 days, 60 days and 90 days. If the time bucket is defined as 8 - 14 days then the midpoint of the time bucket will be 11 days. Therefore, for the 11^{th} day time bucket, the forward exchange rate will be calculated by interpolating the spot rate and the 30 days forward exchange rate using the Linear and Log Linear Interpolation method based on your selection. If interpolation is to be done on the 95^{th} day (which does not have any upper forward exchange rate available) then the 95^{th} day forward exchange rate will be calculated by extrapolating 60 and 90 forward exchange rates.

○Assigning a cash flow to a particular time bucket is important for computing forward exchange

rate. If a cash flow is not assigned to a particular time bucket then forward exchange rate for that cash flow will not be computed.

○For each currency, you can select the spot rate or forward exchange rate to be used for currency conversion, however the interpolation method is selected while defining the parameters of a Run.

○For interpolation of a day, the two forward exchange rates obtained are the ones which is closest to the lower tenor forward exchange rate available or higher tenor forward exchange rate available. If higher tenor forward exchange rate is not available, then using the two nearest lower tenor forward exchange rates available an extrapolation is done.

2.5.3. Calculation

The steps to obtain the exchange rate of currencies are as follows:
For rate between INR to JPY:

- **Check 1: If (INR to JPY) is available then**
  - Rate required = Rate between INR to JPY
- **Check 2: If (JPY to INR) is available then**
  - Rate required = 1/ Rate between JPY to INR
- **Check 3: If (INR to USD) and (USD to JPY) is available then**
  - Rate required = Rate between INR to USD * Rate between USD to JPY
- **Check 4: If (USD to INR) and (USD to JPY) is available then**
  - Rate required = (1/ Rate between USD to INR) * Rate between USD to JPY
- **Check 5: If (INR to USD) and (JPY to USD) is available then**
  - Rate required = Rate between INR to USD * (1/ Rate between JPY to USD)
- **Check 6: If (USD to INR) and (JPY to USD) is available then**
  - Rate required = (1/ Rate between USD to INR) * (1/ Rate between JPY to USD)
- **Else fail (no data available)**

For spot, the rate is obtained on a combination of currencies and for forward the rate is obtained on a combination of currencies and time bucket.

2.6. Contractual Run Definition and Execution

A contractual run allows you to estimate liquidity gaps based on the contractual cash flows received as a download from the bank. All inflows and outflows of cash are assumed to be generated based on the terms of the contract. The liquidity gaps are estimated on a standalone (Solo) basis for each selected legal entity or on a consolidated basis at the level of the selected legal entity. The gap report enables the analysis of the current liquidity gaps in each time bucket purely based on contractual terms. Contractual Execution caters to the *as of date* liquidity status of the organization without the application of any business assumption.
A Contractual Run is defined using the Run Framework of the Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) and executed using the Run Management User Interface (UI) of the LRM Application.
For more information on defining Contractual Run , see "OFSAAI Rule, Process and Run Framework User Guide".
For more information on Execution of a Contractual Run, see "Executing a Run" on page 48.

2.7. Business Assumption Definition

After defining and executing a contractual run, business assumptions are to be defined and applied to the contractual cash flows, through BAU execution (under normal conditions) or stress execution (under stressed conditions). The Liquidity Gap report provides the liquidity status of the organization based on the impact of these business assumptions on the cash flows. A Rule forms the basis of any business assumption. Each rule pre-configured in the LRM Application is associated with one business assumption.

For more information on defining Rules, see "OFSAAI Run Rule Framework User Guide"
For more information on defining the parameters of a business assumption, see "Defining Parameters of Business Assumptions – Screen Inputs" on page 43.
The types of business assumptions that are supported by the LRM Application are as follows:

- Deposit Balance Growth
- Haircut
- Additional Collateral - Rating Downgrade Increase In Cash flow
- Additional Collateral - Valuation Changes-Increase In Cash flow
- Additional Collateral - Rating Downgrade Asset Value Decrease
- Additional Collateral - Valuation Changes – Decrease in value of Asset
- Rollover of Assets
- Rollover of Liabilities
- Run-off
- Prepayment
- Emerging Delinquency -Large Customers
- Emerging Delinquency –Non Large Customers
- Recovery from Delinquent Accounts
- EOP Balance Run-off
- Asset Book Growth
- Liability Book Growth
- Drawdown of Unutilized Credit
- EOP Asset Balance Growth
- EOP Liability Balance Growth
- Drawdown of Funding Line of Credit
- Change in Value Of Asset
- Liquidity Haircut
- Available Stable Funding Factors
- Required Stable Funding Factors

○All business assumptions can be defined based on any of the hierarchies supported by the LRM application. Time bucket hierarchy is a mandatory selection to define business assumptions for all cases except **Emerging Delinquency -Large Customers**.

○All business assumptions except **Emerging Delinquency -Large Customers**, **Available Stable Funding Factors**, **Liquidity Haircut**, and **Required Stable Funding** allow you to specify the amount in percentage as well as value. If percentage has been selected then the specified percentage amount is that of the corresponding cash flow amount on the specified combination. If value has been selected as input, then the currency of the amount specified in the assumption has to be selected.

○You have the option to select two types of currencies namely; natural currency or equivalent currency. If you have opted for natural currency then the currency hierarchy becomes a mandatory hierarchy for the assumption and the amount specified is in the corresponding natural currency displayed in the hierarchy. Similarly, for equivalent currency, a particular currency is selected and all amounts specified by you in such scenarios are considered in the selected currency.

For more information on maintaining business assumptions metadata, see "Annexure C: Business Assumptions Data Maintenance" on page 118.

The detailed descriptions of all the business assumptions supported in the LRM Application are as follows:

2.7.1. Deposits Balance Growth

Deposits balance refers to the cash in hand and the deposits maintained by the bank with other institutions including the central bank. Increase in deposit balance results in an increased cash inflow in the maturing time bucket. Old cash inflow is replaced with the new cash inflow in the specified time bucket.

NOTE

Deposits Balance Growth can either be positive or negative.

Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = (Cash\ Inflow\ Amount * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

An example of the assumption applied to product type (Deposits), legal entity (LE 1) and currency (USD) is as follows:

Assumption					Cash Flow Assignment	
Product Type	**Legal Entity**	**Currency**	**Time Bucket**	**Deposit Growth**	**Contractual Flow**	**Revised Cash Flow**
Deposits	LE1	USD	1-15Days	10%	10000	11000 *(= 10000 + (0.1 * 10000))*

Table 2: Deposit Balance Growth

2.7.2. Haircut

Haircut is applied only to *unencumbered* marketable assets to determine the value of the repo. The haircut percentage is a measure, which is a part of the contractual cash flow. Haircut would lead to a reduced cash outflow in the selected time bucket. This assumption is applied to the marked to market value of unencumbered marketable assets.

Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = (Mark\ to\ Market\ Value * Percentage\ Specified)$$

An example of the assumption applied to product type (Repo), legal entity (LE 1) and currency (USD) is as follows:

Assumption					Cash Flow Assignment	
Product Type	**Legal Entity**	**Currency**	**Time Bucket**	**Haircut**	**Mark to Market Value**	**Revised Cash Flow**
Repo	LE1	USD	1-15Days	10%	10000	11000 *(= 10000 + (0.1 * 10000))*

Table 3: Haircut

2.7.3. Additional Collateral - Rating Downgrade -Increase in Cash Flow

For some financing transactions or derivatives with embedded triggers for downgrade, a downgrade in the bank's rating by a recognized credit rating institution requires the bank to post additional collateral which will result in an increase of cash outflow of unencumbered liquid assets as specified by the bank. The downgrade trigger and collateral value is available as part of the account information.

Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = (Collateral\ Amount_{for\ the\ specified\ notch} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

The following example illustrates the effect of this business assumption on the cash outflows when the downgrade trigger is selected as 3-Notches.

Assumption				Cash Flow Assignment			
Product Type	**Asset Status**	**Time Bucket**	**Additional Collateral**	**Contractual Cash Outflow**	**Downgrade Trigger**	**Collateral Value**	**Revised Cash Outflow**
Derivative 1	Level 2 Asset	1-7 Day	80%	70000	1 Notch	11000	78800 [= 70000 + (11000*80%)]
Derivative 2	Other Asset	1-7 Day	100%	50000	2 Notches	9000	59000 [= 50000 + (9000*100%)]
Financing Transaction 1	Level 2 Asset	1-7 Day	80%	200000	3 Notches	80000	2064000 [= 200000 + (80000*80%)]

Table 4: Additional Collateral - Rating Downgrade - Increase in Cash flow

2.7.4. Additional Collateral - Valuation Changes-Increase in Cash flow

Some derivatives are secured by collateral to cover losses arising from changes in marked to market valuations. For changes in the value of the derivative, additional collateral is posted resulting in a cash outflow. This additional collateral posted is encumbered and is not available for the purpose of counterbalancing or for estimating the cash inflows for Liquidity Coverage Ratio (*LCR*). This assumption is defined and cash flows are assigned in a manner similar to that under the assumption Additional Collateral – Rating Downgrade as per the increase in cash outflow option. Under this assumption only net cash outflows are affected. In this case, the additional collateral to be posted is deemed to be purchased which involves a cash outflow. This collateral is marked as encumbered.

2.7.5. Additional Collateral - Rating Downgrade -Asset Value Decrease

For some financing transactions or derivatives with embedded downgrade triggers, downgrade in a bank's rating by a recognized credit rating institution will require the bank to post additional collateral which will result in deducting the relevant amount from the stock of high quality liquid assets.
This assumption also allows you to select the downgrade.
New Stock of *HQLA* assignment is done in the following manner:

$$Stock\ of\ High\ Quality\ Liquid\ Asset\ to\ be\ reduced = (Collateral\ Amount_{for\ the\ specified\ notch} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Assuming a downgrade trigger of 3-Notches, this assumption is specified as follows:

Assumption	Assignment

Asset Level	Additional Collateral	Collateral Value	Downgrade Trigger	Decrease in HQLA
Level 2 Asset	80%	11000	1 Notch	8800 [= (11000*80%)]
Level 1 Asset	100%	9000	2 Notches	9000 [= (9000*100%)]
Level 1 Asset	80%	80000	3 Notches	64000 [= (80000*80%)]

Table 5: Additional Collateral - Rating Downgrade - Asset Value Decrease

2.7.6. Additional Collateral – Valuation Changes – Asset Value Decrease

In this assumption, the additional collateral posted will result in the selected assets being marked as encumbered. The relevant amount is deducted from the stock of high quality liquid assets where applicable. These assets will not be available for the purpose of counterbalancing or for estimating the cash inflows for LCR. This assumption is specified and cash flows are assigned in the same manner as that for the assumption Additional Collateral – Rating Downgrade under the decrease in value of level 1 assets option.

2.7.7. Rollover of Assets

Rollover of Assets refers to the rescheduling of a certain percentage of cash flows to a future time bucket. This occurs when an asset is renewed for an additional term. The amount of cash flow rolled over is thus reduced from the original time bucket and assigned to the new time bucket. The effect of this assumption would be an altered final cash flow in the affected time buckets. Rollover of assets impacts the inflow amount.

Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Original\ Bucket} = -1 * (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

$$Cash\ Flow_{for\ Revised\ Bucket} = (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

An example of the assumption applied to product type (Loan), legal entity (LE 1) and currency (USD) is as follows:

Assumption						Cash flow Assignment		
Product Type	Legal Entity	Currency	Original Maturity Bucket	Revised Time Bucket	Percentage to be moved	Contractual Cash flow	Time Bucket	Revised Cash flow amount
						10000	15-30 Days	3000 (= 10000 – (0.1 * 10000) – (0.6 * 10000))

Assumption						Cash flow Assignment		
Product Type	**Legal Entity**	**Currency**	**Original Maturity Bucket**	**Revised Time Bucket**	**Percentage to be moved**	**Contractual Cash flow**	**Time Bucket**	**Revised Cash flow amount**
Loan	LE 1	USD	15-30 Days	60-90 Days	10%	5000	60-90 Days	6000 (= 5000 + (0.1 * 10000))
				180-360 Days	60%	7000	180-360 Days	13000 (= 7000 + (0.6 * 10000))

Table 6: Rollover of Assets

2.7.8. Rollover of Liabilities

Rollover of liabilities refers to the rescheduling of a certain percentage of cash flows to a future time bucket. It occurs when the liabilities are renewed for an additional term. The amount of cash flow rolled over is thus increased in the original maturity time bucket and assigned to the new maturity time bucket. The effect of the business assumption would be an altered final cash flow in the various time buckets. Rollover of liabilities impacts the cash outflow amount.
Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Original\ Bucket} = -1 * (Cash\ Flow_{Original\ Bucket}\ Percentage\ Specified)\ OR\ (Amount\ Specified)$$

$$Cash\ Flow_{for\ Revisied\ Bucket} = (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Cash flow assignment for Rollover of Liabilities is similar to the business assumption - Rollover of Assets.

2.7.9. Run-off

In a Run-off assumption the bank assumes that a certain percentage of deposits will be withdrawn by their customers before the scheduled maturity of the deposit. This business assumption would result in an additional outflow in an earlier time bucket and a reduction in the contractual cash outflow in the original time bucket.
Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Original\ Bucket} = -1 * (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

$$Cash\ Flow_{for\ Revisied\ Bucket} = (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Cash flow assignment for this business assumption is similar to the business assumption – Rollover of Assets.

2.7.10. Prepayment

Prepayment is a situation where the customer repays the loan in part or full, at any time before the maturity of the loan. Prepayment would lead the bank lose out on the interest component that it would have received if the loan was not pre-paid. Prepayment results in a cash inflow in a time bucket prior to the original time bucket and reduced cash inflow in the original time bucket. The percentage of prepayment is to be specified by you and the balance is payable only when it is due.
Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Original\ Bucket} = -1 * (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

$$Cash\ Flow_{for\ Revisied\ Bucket} = (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Cash flow assignment for this business assumption is similar to the business assumption – Rollover of Assets.

2.7.11. Emerging Delinquency -Large Customers

Emerging Delinquency -Large Customers is a business assumption where the bank anticipates an emerging loss due to the delinquency of certain large customers and applies the business assumption on the future cash flows due from that customer. To define this, based on the data selected in the dimensions, the customers who are expected to be delinquent are to be specified by you. Hence, all the cash flows of the customer marked as delinquent would be summed up across time buckets and would be placed in the overnight time bucket as contractually the entire dues are to be paid by the customer immediately.
Since, contractually the entire dues are to be paid by the customer immediately providing an amount or percentage is irrelevant, hence all the options will be disabled under this assumption.
Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Original\ Bucket} = -1 * (Cash\ Flow_{Original\ Bucket})$$

$$Cash\ Flow_{for\ Overnight\ Bucket} = (Cash\ Flow_{Overnight\ Bucket}) + (Cash\ Flow_{Original\ Bucket})$$

An example of the assumption applied to product type (product 01), legal entity (LE 1) and currency (USD) is as follows:

Assumption				Cash flow Assignment		
Product Type	**Legal Entity**	**Currency**	**Loan Status**	**Time Bucket**	**Contractual Cash Flow**	**Adjusted Cash Flow**
Product 01	LE 1	USD	Doubtful	Overnight	100	500
				1 – 30 days	100	0
				30 – 60 days	100	0
				60 – 180 days	100	0

Assumption				Cash flow Assignment		
Product Type	**Legal Entity**	**Currency**	**Loan Status**	**Time Bucket**	**Contractual Cash Flow**	**Adjusted Cash Flow**
				Last Bucket : 180 -	100	0

Table 7: Emerging Delinquency -Large Customers

2.7.12. Emerging Delinquency –Non Large Customers

Emerging Delinquency –Non Large Customers is a business assumption where the bank anticipates an emerging loss due to delinquency of its customers and applies the business assumption on the future cash flows. In order to define this, based on the data selected in the dimensions, the customers that are expected to be delinquent are to be specified by you. Percentage of the cash flows of the customer marked as delinquent would be placed in the time bucket selected by you.
Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Original\ Bucket} = -1 * (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

$$Cash\ Flow_{for\ Overnight\ Bucket} = (Cash\ Flow_{Overnight\ Bucket}) + (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

An example of the assumption applied to product type (loan), legal entity (LE 1) and currency (USD) is as follows:

Assumption						Cash flow Assignment		
Product Type	**Legal Entity**	**Currency**	**Loan Status**	**Time Bucket**	**Business Assumption**	**Time Bucket**	**Contractual Cash Flow**	**Adjusted Cash Flow**
Loan	LE 1	USD	Doubtful	1 – 30 days	0.1	Overnight	100	110
						1 – 30 days	100	90
						30 – 60 days	100	100
						60 – 180 days	100	100
						Last Bucket : 180 -	100	100

Table 8: Emerging Delinquency –Non Large Customers

2.7.13. Recovery from Delinquent Accounts

In this assumption, the contractual cash flows assigned to the overnight time bucket is considered. Even though contractually it is due immediately, the actual recovery takes place only over a period of time. Hence, based on past experiences you are allowed to specify the percentage of recovery in each time bucket. The balance percentage which is not specified by you is placed in the last time bucket. Hence, the contractual cash flow is first deducted from the overnight time bucket and assigned to various other time buckets based on the defined percentages.
Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Overnight\ Bucket} = -1 * (Cash\ Flow_{Overnight\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

$$Cash\ Flow_{for\ Selected\ Bucket} = (Cash\ Flow_{Original\ Bucket} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

$$Cash\ Flow_{for\ Last\ Bucket} = (Remaining\ Cash\ Flow_{Overnight\ Bucket})$$

An example of the assumption applied to product type (loan), legal entity (LE 1) and currency (USD) is as follows:

Assumption						Cash flow Assignment			
Product Type	**Legal Entity**	**Currency**	**Loan Status**	**Time Bucket**	**Business Assumption**	**Time Bucket**	**Contractual Cash Flow**	**Business Assumption**	**Adjusted Cash flow**
						Overnight	10000		-10000
Product 01	LE 1	USD	Doubtful	1 – 30 days	10%	1 – 30 days		10%	1000
				30 – 60 days	15%	30 – 60 days		15%	1500
				60 – 180 days	25%	60 – 180 days		25%	2500
						Last Bucket i.e. 180 -			5000 (=10000-1000-1500-2500)

Table 9: Recovery from Delinquent Accounts

2.7.14. EOP Balance Run-off

EOP Balance Run-off is applied to the End of Period (EOP) liability balances indicating the amount of liabilities that are withdrawn prior to their scheduled maturity. Run-offs are also applicable to debt instruments issued by the bank. Run-off is applied to the EOP balances and assigned to the time buckets in multiple ways.

This assumption also allows you to select the method for cash flow assignment. The various options supported for cash flow assignment are as follows:

- Decreasing – In decreasing order to all time buckets up to and including the selected time bucket.
- Equal – Equal to all time buckets up to and including the selected time bucket.
- Proportional – In proportion to the time bucket size.
- Selected – Selected time bucket only

Run-off calculations for demand deposits and time deposits differ to some extent. For demand deposits, there is no contractual cash flow assigned to time buckets, hence the run-off is applied to the EOP balance and the value is assigned to the respective time bucket. For time deposits, the contractual cash flow is assigned to time buckets based on the maturity of the deposit. The run-off is applied to the EOP balance

and the value is added to the cash outflows available in the respective time buckets.
The following section detail the assignment of cash flows to time buckets under each methodology when the EOP balances for demand and time deposits is 200000 and 500000 respectively. The standard time buckets are Overnight, 1-7 Days, 8-15 Days, 16-30 Days, 1-3 Months, 3-6 Months, 6-12 Months, 1-5 years and > 5 Years.

2.7.14.1. Cash Flow Assignment in Decreasing Order to all Time Buckets up to and including the Selected Bucket

Cash flow assignment for this methodology is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = \text{EOP}\ amount * Percentage\ Specified * (1 - Percentage\ Specified)^{(n-1)}$$

$$where\ n = number\ of\ time\ buckets$$

If a run-off is specified for more than one time bucket, then the cash flow value is calculated based on the first run-off percentage ,assigned in decreasing order to all time buckets up to the first selected time bucket. For all subsequent time buckets, cash flow values are calculated based on the respective run-off percentages and assigned in decreasing order to the time buckets immediately succeeding the time bucket selected previously, up to the selected time bucket as follows:

Business Assumption			Cash Flow Assignment		
Product	**Time Bucket**	**Run-off**	**Contractual Cash Flow**	**Time Bucket**	**Revised Cash Outflows**
Demand Deposits	16-30 Days	10%	Nil	Overnight	–20000 [= (–200000*10%)*(1-10%)$^{(1-1)}$]
			Nil	1-7 Days	–18000 [= (–200000*10%)*(1-10%)$^{(2-1)}$]
			Nil	8-15 Days	–16200 [= (–200000*10%)*(1-10%)$^{(3-1)}$]
			Nil	16-30 Days	–14580 [= (–200000*10%)*(1-10%)$^{(4-1)}$]
Time Deposits	16-30 Days	5%	-3000	Overnight	–28000 [= –3000 – {(500000*5%)*(1-5%)$^{(1-1)}$}]
			-8000	1-7 Days	–31750 [= –8000 – {(500000*5%)*(1-5%)$^{(2-1)}$}]
			-5000	8-15 Days	–27562.5 [= –5000 – {(500000*5%)*(1-5%)$^{(3-1)}$}]
			-10000	16-30 Days	–31434.375 [= –10000 – {(500000*5%)*(1-

Business Assumption			Cash Flow Assignment		
Product	**Time Bucket**	**Run-off**	**Contractual Cash Flow**	**Time Bucket**	**Revised Cash Outflows**
					5%)$^{(4-1)}$}]
Time Deposits	3-6 Months	10%	-15000	1-3 Months	–65000 [= –15000 – {(500000*10%)*(1-10%)$^{(1-1)}$}]
			-25000	3-6 Months	–70000 [= –25000 – {(500000*10%)*(1-10%)$^{(2-1)}$}]

Table 10: Decreasing assignment of cash flows

2.7.14.2. Equal Assignment of Cash Flows to all Buckets

Equal cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = \frac{(\mathbf{EOP}\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)}{Total\ number\ of\ Time\ Buckets}$$

If a run-off is specified for more than one time bucket, then the cash flow value is calculated based on the first run-off percentage assigned equally to all time buckets up to the first selected time bucket. For all subsequent time buckets, cash flow values are calculated based on the respective run-off percentages and assigned equally to the time buckets immediately succeeding the time bucket selected previously up to the selected time bucket as follows:

Business Assumption			Cash Flow Assignment		
Product	**Time Bucket**	**Run-off**	**Contractual Cash Flow**	**Time Bucket**	**Revised Cash Outflows**
Demand Deposits	16-30 Days	10%	Nil	Overnight	–5000 [= (–200000*10%)/4]
			Nil	1-7 Days	–5000 [= (–200000*10%)/4]
			Nil	8-15 Days	–5000 [= (–200000*10%)/4]
			Nil	16-30 Days	–5000 [= (–200000*10%)/4]
Time Deposits	16-30 Days	5%	-3000	Overnight	–9250 [= –3000 – {(500000*5%)/4}]
			-8000	1-7 Days	–14250 [= –8000 – {(500000*5%)/4}]
			-5000	8-15 Days	–11250 [= –5000 – {(500000*5%)/4}]

Business Assumption			Cash Flow Assignment		
Product	**Time Bucket**	**Run-off**	**Contractual Cash Flow**	**Time Bucket**	**Revised Cash Outflows**
			-10000	16-30 Days	–16250 [= –10000 – {(500000*5%)/4}]
Time Deposits	3-6 Months	10%	-15000	1-3 Months	–40000 [= –15000 – {(500000*10%)/2}]
			-25000	3-6 Months	–50000 [= –25000 – {(500000*10%)/2}]

Table 11: Equal Assignment of Cash flows

2.7.14.3. Cash Flow Assignment in Proportion to the Bucket Size

Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = (\text{EOP}\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified) * \frac{Number\ of\ days\ in\ Time\ bucket\ n}{Total\ number\ of\ days\ in\ all\ the\ considered\ Time\ buckets}$$

For proportionate assignment, the cash outflow is assigned to all time buckets up to the first selected time bucket, in proportion to the number of days in each time bucket divided by the total number of days up to the selected time bucket. For all subsequent time buckets, the number of days in each subsequent set of time buckets is divided by the difference between the total number of days up to the selected time bucket and the total number of days up to the time bucket immediately preceding the selected time bucket as follows:

Business Assumption			Cash Flow Assignment		
Product	**Time Bucket**	**Run-off**	**Contractual Cash Flow**	**Time Bucket**	**Revised Cash Flow**
Time Deposits	16-30 Days	5%	-3000	Overnight	–3000 [= –3000 – {(500000*5%)*0/30}]
			-8000	1-7 Days	–13833 [= –8000 – {(500000*5%)*7/30}]
			-5000	8-15 Days	–11667 [= –5000 – {(500000*5%)*8/30}]
			-10000	16-30 Days	–22500 [= –10000 – {(500000*5%)*15/30}]
Time Deposits	3-6 Months	10%	-15000	1-3 Months	–35000 [= –15000 – {(500000*10%)*60/150}]
			-25000	3-6 Months	–55000 [= –25000 –

Business Assumption			Cash Flow Assignment		
Product	**Time Bucket**	**Run-off**	**Contractual Cash Flow**	**Time Bucket**	**Revised Cash Flow**
					{(500000*10%)*90/150}]

Table 12: Proportional assignment of cash flows

2.7.14.4. Cash Flow Assignment to Selected Time Bucket Only

Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = (\text{EOP}\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

For selected assignment, the cash outflow is assigned to all selected time buckets as follows:

Business Assumption			Cash Flow Assignment			
Product	**Time Bucket**	**Run-off**	**Product**	**Contractual Cash Flow**	**Time Bucket**	**Revised Cash Flow**
Demand Deposits	16-30 Days	10%	Demand Deposits	Nil	16-30 Day	–20000 [= –200000*10%]
Demand Deposits	1-3 Months	12%	Demand Deposits	Nil	1-3 Months	–24000 [= (–200000*12%)]
Time Deposits	16-30 Days	5%	Time Deposits	-10000	16-30 Day	–35000 [= –10000 – (500000*5%)]
Time Deposits	3-6 Months	10%	Time Deposits	-25000	3-6 Months	–75000 [= –25000 – (500000*10%)]

Table 13: Selected cash flow assignment

2.7.15. Asset Book Growth

Asset book refers to the balances of loans and advances given by the bank. Increase in the asset balance results in an increased cash outflow in the selected time bucket and corresponding inflows in future time buckets. Old inflows will be replaced by new inflows in the selected time bucket. This assumption also accounts for both the initial outflows as well as corresponding inflows occurring due to growth in the business represented by Leg 1 and Leg 2.

Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = (\text{Cash flow Amount} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

An example of the assumption applied to product type (auto loan), legal entity (LE 1) and currency (USD) is as follows:

Assumption						Cash Flow Assignment		
Product Type	**Legal Entity**	**Growth %**	**Outflow Bucket**	**Inflow Bucket**	**Inflow %**	**Time Bucket**	**Original Cash Flow**	**Revised Cash Flow**

Assumption						Cash Flow Assignment		
Product Type	**Legal Entity**	**Growth %**	**Outflow Bucket**	**Inflow Bucket**	**Inflow %**	**Time Bucket**	**Original Cash Flow**	**Revised Cash Flow**
Auto Loan	LE 1	5%	1-7 Days	1-3 Months	27%	1-7 Days	125000	118750 [=125000 – (125000*5 %)]
						8-15 Days	175000	141320 [=175000 – (421000*8 %)]
				3-6 Months	32%	1-3 Months	223000	224687.5 [=223000 + {(125000* 5%)*27%}]
						3-6 Months	198000	200000 [=198000 + {(1250000 *5%)*32% }]
				6-12 Months	47%	6-12 Months	346000	348937.5 [=346000 + {(1250000 *5%)*47% }]
		8%	8-15 Days	1-3 Years	112%	1-3 Years	421000	458721.6 [=421000 + {(421000* 8%)*112% }]

Table 14: Asset Book Growth

2.7.16. Liability Book Growth

Liability Book Growth refers to the growth in the value of deposits which are maintained by the bank's customers or borrowings that have been taken by the bank. The growth in the value of deposits results in an additional cash outflow in the maturing time bucket. Old outflow will be replaced by new outflows. This assumption also accounts for both the outflows and corresponding inflows occurring due to the growth in business represented by Leg 1 and Leg 2.
Cash flow assignment is done in the following manner:

$$Cash\ Flow_{for\ Bucket\ n} = (\text{Cash flow Amount} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

An example of the assumption applied to product type (fixed deposit), legal entity (LE 1) and currency (USD) is as follows:

Assumption						Cash Flow Assignment		
Product Type	Legal Entity	Growth %	Outflow Bucket	Inflow Bucket	Inflow %	Time Bucket	Original Cash Flow	Revised Cash Flow
						1-7 Days	125000	118750 [=125000 – (125000*5%)]
				1-3 Months	27%	8-15 Days	175000	141320 [=175000 – (421000*8%)]
						1-3 Months	223000	224687.5 [=223000 + {(125000*5%)*27%}]
				3-6 Months	32%	3-6 Months	198000	200000 [=198000 + {(1250000*5%)*32%}]
	LE 1	5%	1-7 Days	6-12 Months	47%	6-12 Months	346000	348937.5 [=346000 + {(1250000*5%)*47%}]
Fixed Deposit		8%	8-15 Days	1-3 Years	112%	1-3 Years	421000	458721.6 [=421000 + {(421000*8%)*112%}]

Table 15: Liability Book Growth

2.7.17. Drawdown of Unutilized Credit

Banks generally allow its customers to withdraw a certain amount which is a percentage of the value specified as the limit. This business assumption is applied to the undrawn portion, the assumption being that certain portion of the undrawn amount is drawn by the customer at the specified time bucket thus leading to additional cash out flows. This assumption also allows you to specify the corresponding cash in flow for the specified cash out flow.

This business assumption also allows you to select the method for cash flow assignment. Various options for cash flow assignment available are as follows:

- Decreasing – In decreasing order to all time buckets up to and including the selected time bucket.
- Equal – Equally to all time buckets up to and including the selected time bucket.
- Proportional – In proportion to the time bucket size.
- Selected – Selected time bucket only.

Decreasing Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = Undrawn\ amount * Percentage\ Specified * (1 - Percentage\ Specified)^{(n-1)}$$

$$where\ n = number\ of\ time\ bucket$$

Decreasing cash flow assignment methodology is similar to the decreasing cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.

Equal Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = \frac{(Undrawn\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)}{Total\ number\ of\ Time\ Buckets}$$

Equal cash flow assignment methodology is similar to the equal cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Proportional Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (Undrawn\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified) * \frac{Number\ of\ days\ in\ Time\ bucket\ n}{Total\ number\ of\ days\ in\ all\ the\ considered\ Time\ buckets}$$

Proportional cash flow assignment methodology is similar to the proportional cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Selected Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (Undrawn\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Selected cash flow assignment methodology is similar to the selected cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.

2.7.18. EOP Asset Balance Growth

EOP Asset Balance of Growth assumption estimates new businesses based on the EOP balance of assets and liabilities. It accounts for both legs of the transactions, that is, inflows as well as outflows. Growth is applied to the EOP balance and assigned to time buckets in multiple ways.
This business assumption also allows you to select the method for cash flow assignment. Various options for cash flow assignment available are as follows:

- Decreasing – In decreasing order to all time buckets up to and including the selected time bucket.
- Equal – Equally to all time buckets up to and including the selected time bucket
- Proportional – In proportion to the time bucket size
- Selected – Selected time bucket only.

Decreasing Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = EOP\ amount * Percentage\ Specified * (1 - Percentage\ Specified)^{(n-1)}$$

$$where\ n = number\ of\ time\ buckets$$

Decreasing cash flow assignment methodology is similar to the decreasing cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Equal cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = \frac{(EOP\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)}{Total\ number\ of\ Time\ Buckets}$$

Equal cash flow assignment methodology is similar to the equal cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Proportional Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (EOP\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified) * \frac{Number\ of\ days\ in\ Time\ bucket\ n}{Total\ number\ of\ days\ in\ all\ the\ considered\ Time\ buckets}$$

Proportional cash flow assignment methodology is similar to the proportional cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Selected Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (EOP\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Selected cash flow assignment methodology is similar to the selected cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.

2.7.19. EOP Liability Balance Growth

EOP Liability Balance Growth assumption estimates new businesses based on the EOP balance of assets and liabilities. It accounts for both legs of the transactions, that is, inflows as well as outflows. Growth is applied to the EOP balance and assigned to time buckets in multiple ways.
Various options for cash flows assignment available are as follows:

- Decreasing – In decreasing order to all time buckets up to and including the selected time bucket.
- Equal – Equally to all time buckets up to and including the selected time bucket.
- Proportional – In proportion to the time bucket size
- Selected – Selected time bucket only.

Decreasing Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = EOP\ amount * Percentage\ Specified * (1 - Percentage\ Specified)^{(n-1)}$$

$$where\ n = number\ of\ time\ bucket$$

Decreasing cash flow assignment methodology is similar to the decreasing cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Equal Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = \frac{(EOP\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)}{Total\ number\ of\ time\ buckets}$$

Equal cash flow assignment methodology is similar to the equal cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Proportional Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (EOP\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified) * \frac{Number\ of\ days\ in\ Time\ bucket\ n}{Total\ number\ of\ days\ in\ all\ the\ considered\ Time\ buckets}$$

Proportional cash flow assignment methodology is similar to the proportional cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Selected Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (EOP\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Selected cash flow assignment methodology is similar to the selected cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.

2.7.20. Drawdown of Funding Line of Credit

Banks receive lines of credit from other banks and financial institutions. The bank can drawdown these lines as per its requirement at anytime during the tenure of the facility. A percentage of the total undrawn amount is assumed to be drawn down over each time bucket. Drawdown of funding line of credit results in cash inflow first and outflow at a later date. This assumption also allows you to specify the corresponding cash outflow for the specified cash inflow.
Various options for cash flows assignment available for this assumption are as follows:

- Decreasing – In decreasing order to all time buckets up to and including the selected time bucket.
- Equal – Equally to all time buckets up to and including the selected time bucket
- Proportional – In proportion to the time bucket size
- Selected – Selected time bucket only.

Decreasing Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = Undrawn\ amount * Percentage\ Specified * (1 - Percentage\ Specified)^{(n-1)}$$

$$where\ n = number\ of\ time\ bucket$$

Decreasing cash flow assignment methodology is similar to the decreasing cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.

Equal Cash flow assignment is done using following formula:

$$Cash\ Flow_{for\ Bucket\ n} = \frac{(Undrawn\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)}{Total\ number\ of\ Time\ Buckets}$$

Equal cash flow assignment methodology is similar to the equal cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Proportional Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (Undrawn\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified) * \frac{Number\ of\ days\ in\ Time\ bucket\ n}{Total\ number\ of\ days\ in\ all\ the\ considered\ Time\ buckets}$$

Proportional cash flow assignment methodology is similar to the proportional cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.
Selected Cash flow assignment is done using the following formula:

$$Cash\ Flow_{for\ Bucket\ n} = (Undrawn\ amount * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Selected cash flow assignment methodology is similar to the selected cash flow assignment methodology supported by the business assumption - EOP Balance Run-off.

2.7.21. Change in Value of Asset

This assumption is applied to the current Market value and the changed value is used as the revised Market Value for the purpose of counterbalancing.
For example: the Market Value of Bond A is $100 and the bank has 100 units of Bond A (-10% change in bond value is specified). In this case, the asset value change assumption estimates the revised Market Value value as $90 [100 – (100*10%)] and stores it. 50 units of Bond A are sold for the purpose of counterbalancing at a 12% discount. The cash flow from the sale of Bond A is $3960 [50*{90 – (90*12%)}]. In this case, the revised Market value of $90 (based on the change in asset value assumption) is taken into consideration while counterbalancing and not the actual Market which is $100.
Change in Value of Asset assignment is done in the following manner:

$$MTM\ Value_{Adjusted} = (MTM\ Value_{Original} * Percentage\ Specified)\ OR\ (Amount\ Specified)$$

Assumption				Asset Assignment	
Product Type	**Legal Entity**	**Currency**	**Assumption**	**Market Value**	**Revised Market Value**
Bond	LE1	USD	-10%	100	90

Assumption				Asset Assignment	
Product Type	**Legal Entity**	**Currency**	**Assumption**	**Market Value**	**Revised Market Value**
					(= 100 + (-0.1 * 100))

Table 16: Change in Value of Asset

2.7.22. Liquidity Haircut

Liquidity haircuts are applied to high quality liquid assets in order to determine the stock of high quality liquid assets. This assumption does not affect the cash flows. This business assumption allows you to specify the amount in percentage only. Percentage specified will be applied to the selected combination in order to calculate the Stock of High Quality Liquid Assets.

This business assumption is an assignment assumption and there are no calculations involved. The assigned percentage is used in calculating Liquidity Coverage Ratio (LCR). *For more information on Liquidity Coverage Ratio, see "Liquidity Ratio and Funding Concentration Calculation Process Flow" on page 33.*

2.7.23. Available Stable Funding Factors

Available stable funding factors are the multiplication factors specified for liabilities and equities for the purpose of calculating the Net Stable Funding Ratio (NSFR). This assumption does not affect the cash flows for the purpose of computing liquidity gaps, but is used only for calculating the total available stable funding. This business assumption allows you to specify the amount in percentage only. The percentage specified is applied to the selected combination in order to calculate the NSFR.

This business assumption is an assignment assumption and there are no calculations involved. This assigned percentage is used in calculating Net Stable Funding Ratio. *For more information on Liquidity Coverage Ratio, see "Liquidity Ratio and Funding Concentration Calculation Process Flow" on page 33.*

2.7.24. Required Stable Funding Factors

Required stable funding factors are the multiplication factors specified for assets for the purpose of calculating the NSFR. This business assumption does not affect the cash flows for the purpose of computing liquidity gaps, but is used for calculating the total required stable funding only. This assumption allows you to specify the amount in percentage only. The percentage specified is applied to the selected combination in order to calculate the Net Stable Funding Ratio (NSFR).

This business assumption is an assignment assumption and there are calculations involved. This assigned percentage is used in calculating Net Stable Funding Ratio. *For more information on Liquidity Coverage Ratio, see "Liquidity Ratio and Funding Concentration Calculation Process Flow" on page 33.*

2.8. BAU Run Definition and Execution

In Business As Usual (BAU) Execution one or multiple business assumptions under normal conditions are applied to the contractual cash flows and the cash inflows and outflows are modified accordingly. A BAU Execution allows you to estimate and analyze the liquidity gaps under normal business conditions. The liquidity gap report (after BAU Execution) provides the liquidity status of the organization based on the impact of these business assumptions on the contractual cash flows. Additionally, liquidity ratios are estimated based on cash flows adjusted for normal conditions in accordance with the Basel III guidelines specified by BIS.

A BAU Run is defined using the Run Framework of the Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) and executed using the Run Management User Interface (UI) of the LRM Application.

For more information on defining BAU Run, see the "OFSAAI Rule, Process and Run Framework User Guide".

For more information on Execution of a Contractual Run, see "Executing a Run" on page 48.

2.9. Stress Assumption Definition

Business assumptions (as explained in the earlier section) are also applied to the contractual or BAU cash flows through stress execution. The definition and application of these assumptions in a stress execution is

different from that of BAU execution as it is stressed based on historical data or user judgment. A Rule is the basis of any business assumption. Each rule pre-configured in the LRM Application is associated with a single business assumption. A rule can be defined or modified in the Rule framework of the OFSAAI.

2.10. Stress Scenario Definition

Rule shocks can be easily defined by replacing an existing rule with a stressed rule. Each stressed rule captures an assumption related to Asset Sale, Run-off, Repo- Rollover, Collateral Haircut change and so on, under a stressed or BAU scenario. These rules can be easily modified and saved as new stress rules. Multiple Rules can be consolidated to form a single scenario. *For more information on definition of Stress Scenarios, see the "Stress Testing Framework".*

2.11. Stress Run Definition and Execution

A stressed scenario is mapped to a Baseline Run to create a Stress Run. A Stress Run or execution is used to study the adverse effects of the application of stressed business assumptions on the liquidity gaps. *For more information on executing a Stress Run, see "Executing a Run" on page 48.*

2.12. Liquidity Ratios and Funding Concentration Calculations

Various parameters in Liquidity Risk Management help in analyzing the liquidity status of the bank. Liquidity ratios are one such parameter prescribed in the Basel III Guidelines. There are two types of ratios calculated by the LRM Application which are as follows:

- **Liquidity Coverage Ratio:** Liquidity coverage ratio addresses the short-term liquidity needs of an institution during a stress situation. It estimates whether the stock of high quality liquid assets is sufficient to cover the net cash outflows under stress situations over a specified future period. Liquidity coverage ratio is calculated at the legal entity level. Liquidity coverage ratio is also calculated at the currency level, which is known as Foreign Currency Liquidity Coverage Ratio.
- **Net stable funding ratio**: addresses the medium and long-term liquidity needs of a bank during a stress situation. It specifies the minimum amount of stable funding required to be maintained in order to promote stable long term funding.
- **Funding Concentration Calculation**

  Wholesale funding from significant sources is calculated in order to monitor the liquidity risk arising from the withdrawal of such funds. Funding concentration is calculated on the basis of following dimensions:

  - Concentration by Significant Counterparties
  - Concentration by Significant Products
  - Concentration by Significant Currencies

2.12.1. Input

Inputs required for Liquidity Ratios to be calculated by the LRM Application are as follows:

- Definition of assumptions **Liquidity Haircut**, **Available Stable Funding Factors** and **Required Stable Funding Factors**.
- Liquidity Horizon specified as the run time parameter

2.12.2. Liquidity Ratio and Funding Concentration Calculation Process Flow

This section aims to explain the procedure of calculating the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) as well as provides a brief explanation on Funding Concentration calculation.

2.12.2.1. Liquidity Coverage Ratio

The procedure for calculating Liquidity Coverage Ratio is as follows:

1. **Asset level identification**

2. **Level 1 asset amount calculation**
3. **Level 2 asset amount used computation**
4. **Level 2 asset amount unused computation**
5. **Stock of High Quality Liquid Asset (SHQLA) computation**
6. **Cash inflow computation**
7. **Cash outflow computation**
8. **Net Cash Outflow (NCOF) computation**
9. **Liquidity Coverage Ratio computation**

Asset level identification: A set of Asset Reclassification Rules which assigns an Asset Level to each account is supported by the LRM Application. The asset levels, Level 1 and Level 2, are as specified by BIS as part of the Basel III guidelines. If any asset is not assigned to Level 1 or Level 2 asset category, they are marked as Other Assets.

Level 1 asset amount calculation: Total *Level 1 Asset* amount is calculated and stored at legal entity and currency granularity. This process is performed by a Table to Table (T2T) transformation in the Liquidity Coverage Ratio Run, namely **LRM_LCR_DATA_POPULATION**. The formula for calculating Total Level 1 Asset Amount is as follows:

$$Total\ Level\ 1\ Asset\ Amount = \sum_{i=1}^{n} MTM_i * Liquidity\ Haircut_i$$

$$where\ n = Total\ Number\ of\ Assets\ assigned\ as\ Level\ 1\ Asset$$

Level 2 asset amount used computation: Total *Level 2 Asset* amount used is calculated and stored at legal entity and currency granularity. This process is done by a T2T Transformation in the Liquidity Coverage Ratio Run, namely **LRM_LCR_DATA_POPULATION.** The formula used for calculating Total Level 2 Asset Amount Used is as follows:

$$Total\ Level\ 2\ Asset\ Amount\ Used = Minimum\left(\langle\sum_{j=1}^{m} MTM_j * Liquidity\ Haircut_j\rangle, \langle\frac{40}{60} * \sum_{i=1}^{n} MTM_i * Liquidity\ Haircut_i\rangle\right)$$

$$where\ n = Total\ Number\ of\ Assets\ assigned\ as\ Level\ 1\ Asset$$

$$where\ m = Total\ Number\ of\ Assets\ assigned\ as\ Level\ m\ Asset$$

Level 2 asset amount unused computation: Total Level 2 Asset amount unused is calculated and stored at legal entity and currency granularity. This process is done by a T2T transformation in the Liquidity Coverage Ratio Run, namely **LRM_LCR_DATA_POPULATION**. The formula for calculating Total Level 2 Asset Amount Unused is as follows:

$$Total\ Level\ 2\ Asset\ Amount\ Unused = \langle \sum_{j=1}^{m} MTM_j * Liquidity\ Haircut_j \rangle - \left[Minimum \left(\langle \sum_{j=1}^{m} MTM_j * Liquidity\ Haircut_j \rangle, \langle \frac{40}{60} * \sum_{i=1}^{n} MTM_i * Liquidity\ Haircut_i \rangle \right) \right]$$

$$where\ n = Total\ Number\ of\ Assets\ assigned\ as\ Level\ 1\ Asset$$

$$where\ m = total\ Number\ of\ Assets\ assigned\ as\ Level\ m\ Asset$$

Stock of High Quality Liquid Asset (SHQLA) computation: SHQLA is calculated at legal entity and currency granularity. This is performed by the rule **LRM - SHQLA Computation**. The formula for calculating SHQLA is as follows:

$$Stock\ of\ High\ Quality\ Liquid\ Asset = Total\ Level\ 1\ Amount + Total\ Level\ 2\ Amount\ Used$$

Cash inflow computation: Cash inflow is the sum of all the cash inflows that occur within the specified liquidity horizon and for all the accounts which are marked as *other assets*. This process is performed by the rule **LRM - Cash Inflow Computation**. The formula for calculating cash inflow is as follows:

$$Cash\ inflow = \sum_{i=1}^{n} Cash\ inflow_i$$

$$where\ n = All\ the\ account\ which\ are\ marked\ as\ Other\ Asset\ and\ their\ cash\ flow\ date\ is\ less\ than\ the\ liquidity\ horizon$$

Cash outflow computation: Cash outflow is the sum of the all cash outflows that occur within the specified liquidity horizon and for all the accounts which are marked as Other Assets. This process is performed by the Rule **LRM - Cash Outflow Computation**. The formula for calculating Cash Outflow is as follows:

$$Cash\ outflow = \sum_{i=1}^{n} Cash\ outflow_i$$

$$where\ n = All\ the\ accounts\ which\ are\ marked\ as\ Other\ Asset$$

$$and\ the\ cashflow\ date\ is\ less\ than\ Liquidity\ Horizon$$

Net cash outflow computation (NCOF): Net Cash Outflow is derived from cash inflow and cash outflow. This is performed at the granularity of legal entity and currency. This process is performed by the Rule **LRM - NCOF Computation**. The formula for calculating net cash outflow is as follows:

$$NCOF = Cash\ Outflow - Minimum\ (\langle Cash\ Inflow \rangle, \langle 75\%\ of\ Cash\ Outflow \rangle)$$

Liquidity Coverage Ratio computation: Liquidity coverage ratio is calculated at legal entity and Currency Granularity and stored in the database. This is performed by the Rule **LRM - Liquidity Coverage Ratio Computation**. The formula for calculating liquidity coverage ratio is as follows:

$$Liquidity\ Coverage\ Ratio = \frac{Stock\ of\ High\ Quality\ Liquid\ Asset\ (SHQLA)}{Net\ Cash\ Outflow\ (NCOF)}$$

The formula to calculate LCR at legal entity level only is as follows:

$$Liquidity\ Coverage\ Ratio = \frac{\sum_{i=1}^{n} Stock\ of\ High\ Quality\ Liquid\ Asset\ (SHQLA)_i}{\sum_{i=1}^{n} Net\ Cash\ Outflow\ (NCOF)_i}$$
$$where\ n = Total\ Number\ of\ distinct\ Currencies\ available\ in\ the\ Legal\ Entity$$

Some jurisdictions may not have sufficient amount of Level 1 or Level 2 liquid assets. In such cases, the following options may be exercised in order to cover the net cash outflows:

- **Option 1: Contractually Committed Liquidity Facilities from the Relevant Central Bank**
- **Option 2: Foreign Currency Liquid Assets**
- **Option 3: Additional Use of Level 2 Assets**

Option 1

Option 1 increases the Stock of HQLA. For currencies in which sufficient HQLA is not available, the bank can add the amount to Stock of HQLA from Product Type **Contractual Committed Liquidity Facilities from the Central Bank**. This computation happens in **LRM LCR Option1 Computation** Process.
Data is first inserted in the table with Option Type as Option 1 and then a set of Rules are executed which updates the Option 1 Amount, the Stock of HQLA, and then recalculates the Liquidity Coverage Ratio post Options 1.

Option 2

Option 2 increases the Stock of HQLA. For currencies in which sufficient HQLA is not available, the bank can add the amount to Stock of HQLA from foreign currency. Stock of HQLA from foreign currencies can only be added if there is extra Stock of HQLA available in foreign currency. This computation happens in **LRM LCR Option2 Computation** Process.
Data is first inserted in the table with Option Type as Option 2 and then a set of Rules are executed which brings in the extra Stock of HQLA from foreign Currency and adds it to the Stock of HQLA of the currency where the funds are insufficient. Once the Option amount and New Stock of HQLA is updated then Liquidity Coverage Ratio is recalculated.

Option 3

Option 3 increases the Stock of HQLA for currencies in which sufficient HQLA is not available, banks can take the additional amount from Asset 2 if available. This computation happens in **LRM LCR Option3 Computation** process.
Data is first inserted in the table with Option Type as Option 3 and then a set of Rules are executed which updates the Option 3 Amount, Stock of HQLA and then recalculates the Liquidity Coverage Ratio post Options 3.

Different processes have been created in the Run for all three Options. You are allowed to specify the sequence in which these options are to be executed. The sequence of execution is available as part of the Run.

2.12.2.2. Net Stable Funding Ratio

The procedure to calculate Net Stable Funding Ratio is as follows:

1. **Available amount of stable funding computation**
2. **Required amount of stable funding computation**
3. **Net Stable funding ratio computation**

Available amount of stable funding computation: is calculated and stored at legal entity and currency granularity. This process is performed by a Table to Table (T2T) transformation in the Liquidity Coverage Ratio Run, **LRM_LCR_DATA_POPULATION**. The formula for calculating Available Amount of Stable Funding is as follows:

$$Avalible\ Amount\ of\ Stable\ Funding = \sum_{i=1}^{n} Liability_i * Factor_i$$

$$where\ n = All\ Liability\ Products\ and\ Factors\ is\ the\ percentage\ allocated\ in$$

$$Available\ Stable\ Funding\ Factors\ Business\ Assumption$$

Required amount of stable funding computation: is calculated and stored at legal entity and currency granularity. This process is done by T2T transformation in LCR Run, namely **LRM_LCR_DATA_POPULATION**. The following formula is used for calculating the Required Amount of Stable Funding:

$$Required\ Amount\ of\ Stable\ Funding = \left(\sum_{i=1}^{n} Asset_i * Factor_i\right) + \left(\sum_{i=1}^{m} Off\ Balance\ Sheet_i * Factor_i\right)$$

$$where\ n = All\ Asset\ Product$$

$$where\ m = All\ Off\ Balance\ Sheet\ Products\ and$$

$$factor\ is\ the\ percentage\ allocated\ in$$

$$Required\ Stable\ Funding\ Factors\ Business\ Assumption$$

Net Stable Funding Ratio (*NSFR*) computation: is calculated at legal entity and currency granularity. This is done by the Rule **LRM - Net Stable Funding Ratio Computation**. The following formula is used for calculating Net Stable Funding Ratio:

$$Net\ Stable\ Funding\ Ratio = \frac{Avaliable\ Amount\ of\ Stable\ Funding}{Required\ Amount\ of\ Stable\ Funding}$$

2.12.2.3. Funding Concentration by Counterparty, Currency and Product

Ratio of each of the cash flow in the aggregate table is first calculated with respect to the concentration at legal entity level. Any counterparty or product is termed as significant if the sum of its concentration is greater than 1%. A currency is termed as a significant currency if the sum of its concentration is greater than 5% of the currency.

2.13. Counterbalancing Strategies

Counterbalancing Strategy caters to the requirement of applying preventive measures to manage a bank's liquidity gaps. A counterbalancing strategy or a contingency funding plan refers to certain measures undertaken by banks to minimize or nullify the gaps identified under the BAU and Stress conditions. The purpose is to identify negative and positive liquidity gaps across defined time buckets and apply a funding plan that will reduce the negative gaps. A counterbalancing strategy consists of a set of one or more positions. Counterbalancing Strategies are implemented after business assumptions have been applied and liquidity gaps have been estimated. The LRM Application gives you the option of applying five different types of Counterbalancing Strategies, where you can sell existing instruments or purchase new instruments to manage liquidity gaps. The counterbalancing strategies that can be applied by the bank are as follows:

- **Sale of Marketable Assets:** Additional cash inflow can be generated by the sale of marketable assets. Unencumbered marketable assets (identified through encumbrance status and marketable asset indicator) are available as a part of this counterbalancing strategy.
- **Sale of Other Assets:** Cash inflow can be created by sale of marketable assets. Unencumbered marketable assets (identified through encumbrance status and marketable asset indicator) are available as a part of this counterbalancing strategy.
- **Rollover of Existing Repos:** Rollover refers to rescheduling of cash outflows to a future date. This is applied at an individual repo position level.
- **New Repo Deal:** Creation of a new repo, results in a cash inflow and a corresponding outflow based on the date of contract and maturity date specified for the position. New repos can be created for the following types of debt instruments:
    - Unencumbered securities (identified through encumbrance status)
    - Securities for which the bank has re-hypothecation rights (indicator for re-hypothecation rights)

  The calculation of a new repo deal is similar to the calculation of rollover of existing repos. You can select the set of securities to create a new repo deal.
- **New Funding like Deposits, Primary Issuances, Borrowing and so on:** A new funding (deposits or borrowing) creates a cash inflow on the specified date. The LRM Application allows you to specify the select product, borrowing date (inflow date), borrowed amount, maturity date and amount.

The LRM Application has incorporated a Graphic User Interface (GUI) to allow a bank apply counterbalancing strategies of their choice on the liquidity gaps that have been identified in the various time buckets. *For more information on Application of Counterbalancing Strategies, see "Applying Counterbalancing Strategies" on page 51.*

3. Preparing for Execution

This chapter aims to detail the important activities that you need to perform before executing Contractual, BAU or Stress Runs. It aims to provide details on the data required to be populated in the LRM Application and the steps to be followed to define business assumptions which will help identify liquidity gaps.

3.1. Data Requirements

Configuring data into the LRM Application is the basic and most important activity to commence working on the LRM Application. Data to be configured in the LRM Application can be divided into three types:

- Setup Role Management
- Setup Data Management
- Run Data Management

The subsequent sections list the set of Setup tables and Run Data tables to be populated. However, for details on the columns to be populated within each table, refer to the Download Specifications (DL Specs) document.

3.1.1. Setup Role Management

The following table provides details about the functions and their use. You are requested to create specific roles to access the respective functionality of the screens and map these roles to user groups.

V_FUNCTION_CODE	V_FUNCTION_NAME	V_FUNCTION_DESC
LRMBAACT	Activate Behaviour Assumption	Users mapped to this group can activate the assumption
LRMBAADD	Add Behaviour Assumption	The user group mapped to this function can add new behaviour assumptions.
LRMBADEL	Delete Behaviour Assumption	The user group mapped to this function can Delete behaviour assumptions.
LRMBAMOD	Modify Behaviour Assumption	The user group mapped to this function can edit behaviour assumptions.
LRMBAVIW	View Behaviour Assumption	The user group mapped to this function can view behaviour assumptions.
LRMCBADD	Add Counter Banlancing method	The user group mapped to this function can add new Couter balencing method.
LRMCBDEL	Delete Counter Banlancing method	The user group mapped to this function can Delete existing Couter balencing method/s.
LRMCBMOD	Modify Counter Banlancing method	The user group mapped to this function can edit Couter balencing method.
LRMCBVIW	View Counter Banlancing method	The user group mapped to this function can view Couter balencing method.
LRMRUNADD	Add LRM Run	The user group mapped to this function can add new runs.
LRMRUNDEL	Delete LRM Run	The user group mapped to this function can Delete runs.
LRMRUNEXEC	Execute LRM Run	The user group mapped to this function can Execute runs.
LRMRUNMOD	Modify LRM Run	The user group mapped to this function can edit runs.
LRMRUNVIW	View LRM Run	The user group mapped to this function can view runs.

Table 17: Setup Role Management

3.1.2. Setup Data Management

This section refers to the setup data required to be populated in Oracle Financial Services Liquidity Risk Management, Release 2.0. Setup data is a set of dimension tables which does not change frequently and can be categorized as a onetime setup activity.
The setup tables required to be populated in the LRM application are as follows:

- DIM_ACCT_STATUS
- DIM_ASSET_LEVEL
- DIM_BASEL_CREDIT_RATING
- DIM_BASEL_CUSTOMER_TYPE
- DIM_BASEL_GUARANTOR_TYPE
- DIM_BASEL_ISSUER_TYPE
- DIM_BASEL_PRODUCT_TYPE
- DIM_BOOLEAN_FLAGS
- DIM_CASH_FLOW_TYPE
- DIM_COUNTRY
- DIM_CREDIT_RATING
- DIM_CURRENCY
- DIM_GL_ACCOUNT
- DIM_HOLDING_TYPE
- DIM_INSTRUMENT_CATEGORY
- DIM_INTEREST_TYPE
- DIM_LCR_OPTION
- DIM_LR_COUNTER_BALANCE_METHOD
- DIM_MATURITY_BAND
- DIM_ORG_UNIT
- DIM_RISK_WEIGHT
- DIM_RUN
- DIM_RUN_TYPE
- FSI_BEHAVIOR_ASSUMPTION_TYPE
- MAP_LE_TB
- FSI_M_LOOKUP_MASTER
- FSI_M_LOOKUP_B
- FSI_M_LOOKUP_TL
- FSI_M_OBJECT_DEFINITION_B
- FSI_M_OBJECT_DEFINITION_TL
- FSI_TEMPLATE_DEFINITION
- FSI_TEMPLATE_DEFINITION_MLS
- FSI_TEMPLATE_DETAILS
- FSI_LIMIT_DEFINITION
- FSI_LIMIT_DEFINITION_DETAILS
- FSI_LIMIT_DEFINITION_VALUES
- SETUP_ADVANCE_FILTERS

- SETUP_BA_ALIAS_FLAG_MAP
- SETUP_MASTER
- SYS_STG_JOIN_MASTER
- SYS_TBL_MASTER
- DQ_CHECK_MASTER
- DQ_GROUP_MAPPING
- SETUP_ASSUMPTION_RULE_MAP

For more information on the specific columns to be populated within each table, see the "Download Specifications (DL Specs)" document.

3.1.3. Run Data Management

Run or Execution data management details the staging data to be populated that change with each execution. This section refers to the set of data which can be categorized as input data in the LRM Application. It provides information about the various staging tables required to be populated in the LRM Application. The list of staging tables to be populated in the LRM Application is as follows:

- STG_ACCOUNT_CASH_FLOWS
- STG_FORWARD_EXCHG_RATES
- STG_CUSTOMER_MASTER
- STG_INSTRUMENT_CONTRACT_MASTER
- STG_LOB_MASTER
- STG_PRODUCT_MASTER
- STG_PRODUCT_TYPE_MASTER
- STG_SALES_CHANNEL_MASTER
- TMP_INT_ORG_STRUCTURE_MASTER
- STG_FOREIGN_CCY_UTIL_DETAILS
- FSI_TIME_BUCKET
- STG_CUSTOMER_TYPE_MASTER
- STG_GUARANTOR_TYPE
- STG_ISSUER_TYPE
- FSI_HOLIDAY_MASTER
- FSI_HOLIDAY_LIST
- FCT_REG_CAP_ACCOUNT_SUMMARY

For more information on the specific columns to be populated within each table, see the "Download Specifications (DL Specs)" document.

3.2. Data Quality Checks

In order to maintain the integrity and accuracy of the data populated into the LRM Application certain data quality checks have been pre-configured under the **Data Quality Framework** link in *OFSAAI*. A few of the data quality checks pre-configured in the LRM Application are as follows:

- **Data Quality Checks on STG_ACCOUNT_CASH_FLOWS**
    - Cash flow date (D_CASH_FLOW_DATE) must not be less than Execution date (FIC_MIS_DATE)

- Null Value checks for Cash Flow date (**D_CASH_FLOW_DATE**)
- Null Value checks for Cash Flow amount (**N_CASH_FLOW_AMT**)
- List of Value Checks on Cash flow type (**V_CASH_FLOW_TYPE**). Value should be either **I** or **O** (Inflow/Outflow).
- List of Value Checks on Financial Element type (**V_FINANCIAL_ELEMENT_CODE**) of Cash flow. Value should be **P**, **I** or **O** (Principal or Interest or Others). If no value is given, it would be taken as **P** (Principal).
- Reference Checks on Cash flow date (D_CASH_FLOW_DATE) from **DIM_DATES**.
- Reference Checks on Currency (**V_CCY_CODE**) from **DIM_CURRENCY**.
- Reference Checks on Product (**V_PROD_CODE**) from **DIM_PRODUCT**.
- Reference Checks on Organization Unit (**V_ORG_UNIT_CODE**) from **DIM_ORG_UNIT**.
- Reference Checks on Account Number (**V_ACCOUNT_NUMBER**) from **DIM_ACCOUNT**.
- Reference Checks on Instrument Type (**N_INSTRUMENT_TYPE_CD**) from **DIM_INSTRUMENT_TYPE**.
- Reference Checks on GL Account Code (**V_GL_ACCOUNT_CODE**) from **DIM_GL_ACCOUNT**.

3.3. Defining Parameters of Business Assumptions – Screen Inputs

After configuring setup data and run or staging data (as mentioned in the earlier section) in the LRM Application, the next step is to define the parameters of the business assumption before executing a Run. Business Assumptions can be defined by you in the **Business Assumptions Definition** screen of the LRM Application. This section provides a step-by-step explanation of the process of defining the parameters of business assumptions.

NOTE

Certain fields appearing in the Business Definition Screen are unique to specific business assumptions. *To view the respective business assumption screenshots with the relevant description of each field to be updated, see "Annexure A: Screen Format" on page 56.*

Follow the steps given below to define a Business Assumption:

1. Click **Business Assumption Definition** Link under **Liquidity Risk Management** to open the **Business Assumptions Summary** screen.
2. Click to open the **Business Assumption Definitions** screen to add and define new business assumptions.
3. Enter the description of the Assumption in the **Assumption Description** field, under **Assumption Details** shown in the following figure:

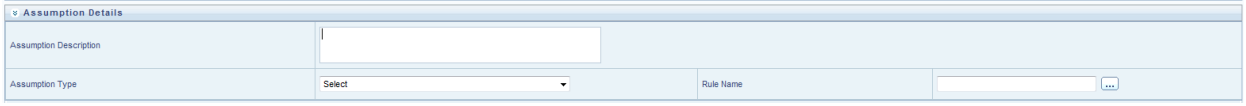


Figure 1: Assumption Details Section

4. Select the Business Assumption from the **Assumption Type** dropdown shown in figure 2.
5. Click to select the relevant **Rule Name** as shown in the preceding figure..

NOTE

○All the rules for selected assumption type will be displayed. This mapping of assumption type and rule is maintained in SETUP_ASSUMPTION_RULE_MAP setup table. If new rule is created then SETUP_ASSUMPTION_RULE_MAP should be updated with the mapping of rule code and assumption type.

There are two ways to select a Rule:

○Enter the name of the assumption or rule in the search field and click .

○Select the relevant Rule from the list of Rules and click .

6. Click against each dimension to select one or multiple members (nodes) of the dimension required to define the business assumptions under the **Dimension Member Selection** field, shown in the following figure. Dimensions displayed in this section are the ones which are selected as the source hierarchy in the associated rule.

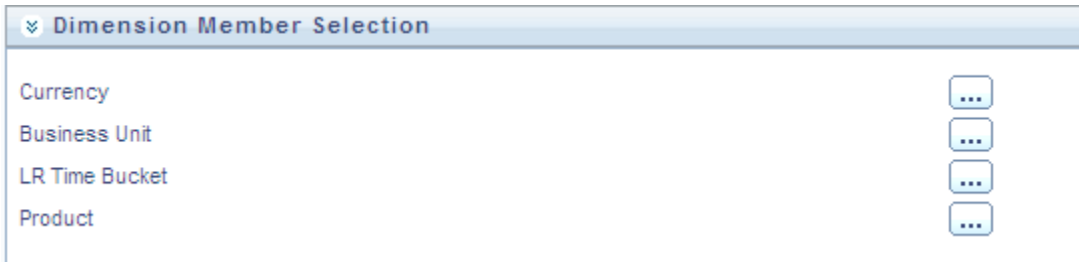


Figure 2: Dimension Member Selection

NOTE

○The **Business Assumption Definition** screen provides you with the flexibility to apply filters in the columns. Once all the nodes in the dimensions are selected then a Cross Grid of the dimensions is created in the **Assumption Specification** section. You can select the required combination of the nodes and slice the grid to define the business assumption using the filter option based on the dimension columns as shown in the following figure.

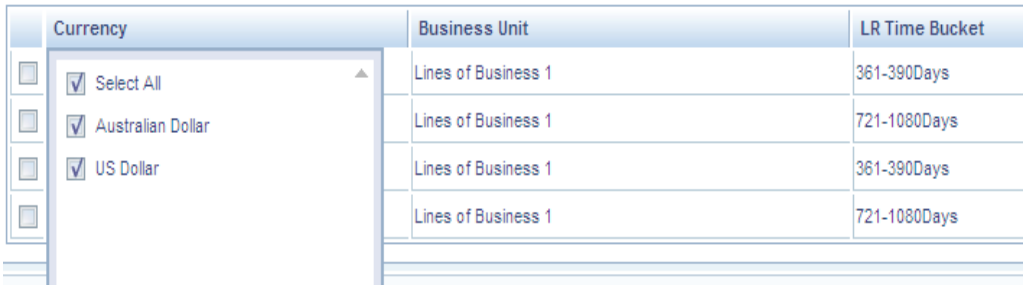


Figure 3: Filters

7. Click to select the **Assumption unit** as Value or Percentage, shown in the following figure.

Figure 4: Assumption Unit and Currency selection

8. Click  to select the **Assumption Currency** if the Assumption Unit selected is Value shown in the preceding figure.

9. Click  to select the relevant currency if the Assumption Currency selected is Equivalent Currency shown in figure 3.

10. Click the **Downgrade** dropdown to select the notch over which the Business Assumption is to be applied shown in the following figure. This is applicable for the following Business Assumptions:

    i. **Additional Collateral - Rating Downgrade Increase in Cash Flow**

    ii. **Additional Collateral - Rating Downgrade Asset Value Decrease**

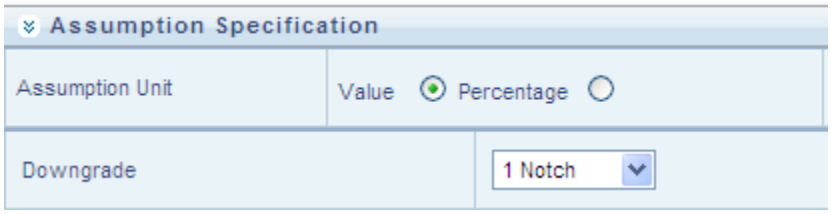


Figure 5: Notch Selection

○For each of the rows in the business assumption a **Delete** icon has also been provided. A Delete button deletes the row from the Assumption.

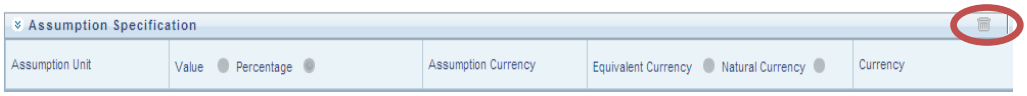


Figure 6: Delete Rows icon

11. Select the relevant **Cash Flow Assignment Method for Leg 1 and Leg 2** as Decreasing, Equally, Proportional or Selected. This is applicable for the following business assumptions.

    i. **Drawdown of Unutilized Credit**

    ii. **EOP Asset Balance Growth**

    iii. **EOP Liability Balance Growth**

    iv. **Drawdown of Funding Line of Credit**

○When Leg 1 and Leg 2 Cash Flow assignment selections are made, the Assumption Value for Leg1 and Leg2 are to be entered in the **Outflow** or **Inflow Amount** field and **Offset Leg** field respectively, as shown in the following figure.

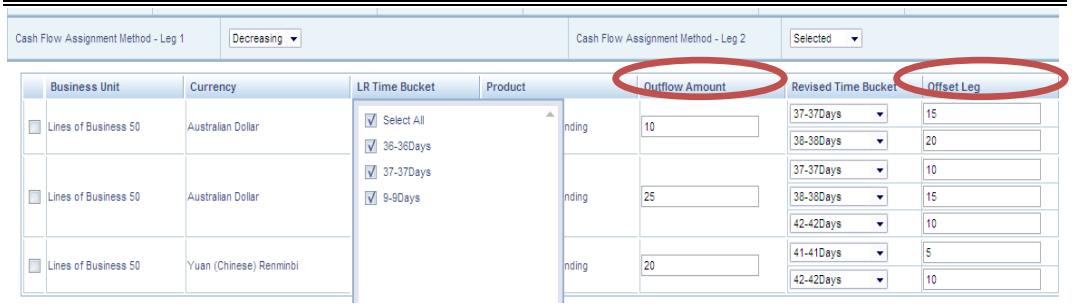


Figure 7: Outflow or Inflow Amount selection

NOTE

○For assumption **EOP Balance Run Off** a single field for **Cash Flow Assignment Method** selection is available.

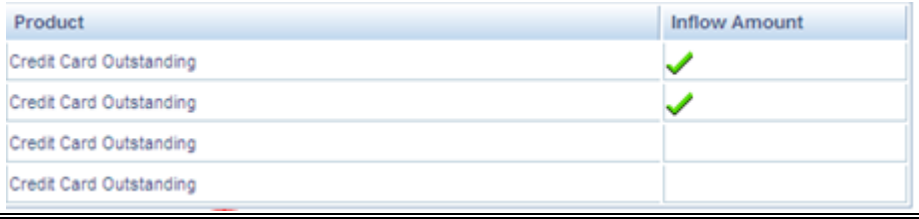
○If **decreasing** has been selected then assumption unit should be in percentage and not value.

12. Enter the Assumption Value or Amount under field **Inflow Amount** or **Outflow Amount** depending on the type of assumption.

Figure 8: Assumption Value Selection

NOTE

For business assumption **Emerging Delinquency- Large Customers** you have a choice to select the combination over which the assumption is to be applied under the **Inflow Amount** field shown in the following figure:



13. Select the ***Revised Time Bucket*** shown in the following figure. This is applicable for the following Business Assumptions:

    i. Rollover of Assets

ii. **Rollover of Liabilities**

iii. **Run-off**

iv. **Prepayment**

v. **Asset Book Growth**

vi. **Liability Book Growth**

vii. **Drawdown of Unutilized Credit**

viii. **EOP Asset Balance Growth**

ix. **EOP Liability Balance Growth**

x. **Drawdown of Funding Line of Credit**

Figure 9: Revised Time Bucket

To view the respective business assumption screenshots with the relevant description of each field to be updated, see "Annexure A: Screen Format" on page 56.

For more information on business assumptions data maintenance, see "Annexure C: Business Assumptions Data Maintenance" on page 123.

4. Execution

Once data stores are created and defined, the timing and frequency of execution of data can be established. The LRM application contains a Graphic User Interface (GUI) which contains the functionality of executing runs, by selecting different run level parameters for each execution. Runs can be defined in the Run framework of Oracle Financial Services Analytical Application Infrastructure (OFSAAI). *For more information on definition of a Run, see "OFSAAI Run Rule Framework User Guide".*

After execution of a Run, counterbalancing strategies are applied on the liquidity gaps identified. This chapter aims to explain the step by step procedure of executing a Run and thereafter the procedure to apply counterbalancing strategies to the liquidity gap report.

4.1. Executing a Run

To define a Run, follow the steps given below:

1. Click **Run Management** on the LHS menu of the LRM Application to open the **Run Management Summary** Screen.

2. Click  to select a Run under section **List of Runs,** shown in the following figure.

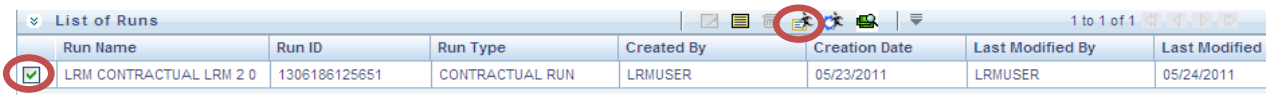


Figure 10: List of Runs Selection

○To search for a particular Run, enter the Run Name or select Run Type and click  under the search field.

○All the Runs mapped to the corresponding infodom and segment are displayed in the **Run Management** screen.

○All the Rules mapped to the corresponding infodom and segment are displayed in the **Rule Browser** under **Behaviour Assumption Definition** screen

3. Click  to define the parameters of the Run, shown in figure 11. The Run Parameter Selection Screen appears, shown in the following figure:

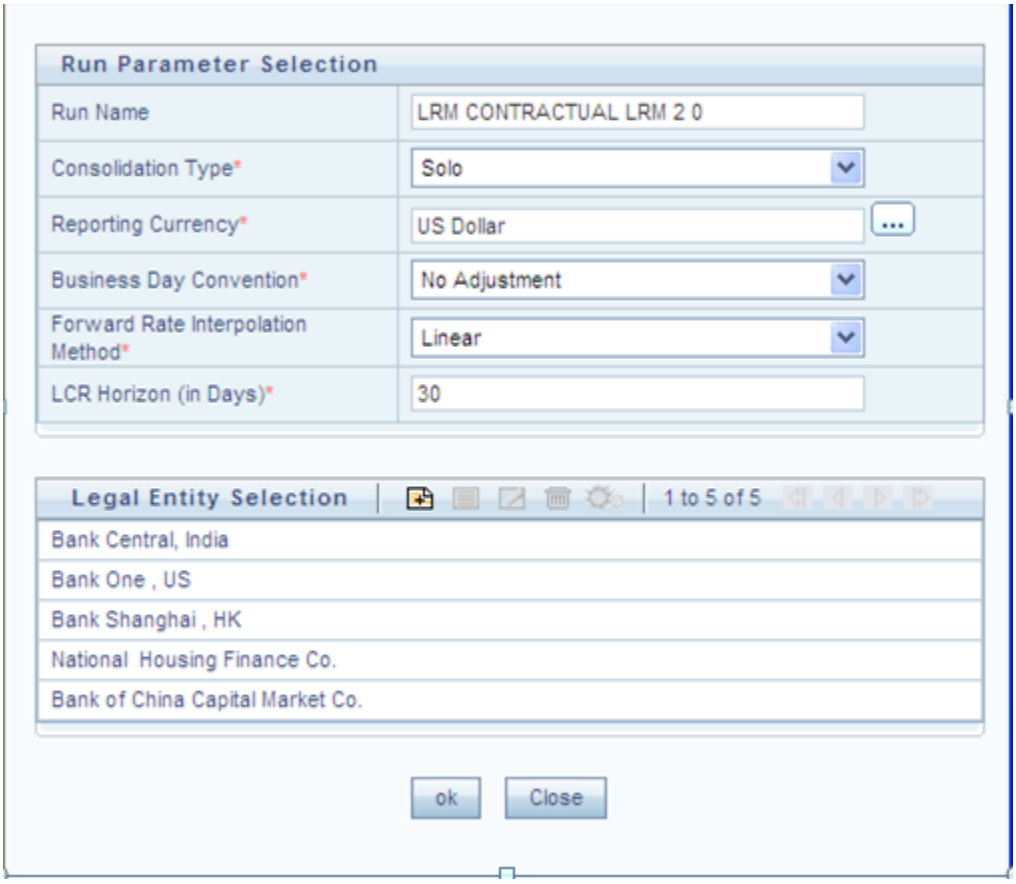


Figure 11: Run Parameter Selection

4. Enter the **Run Name**.
5. Enter the **Consolidation Type** as Solo or Consolidated, shown in figure 12.
6. Click ... to select the **Reporting Currency,** shown in figure 12.
7. Select the relevant **Business Day Convention** for the purpose of Time Bucketing, shown in figure 13.

   For more information on time buckets, see "Time Bucketing" on page 10.
8. Select the **Forward Rate Interpolation Method** as **Linear** or **Log Linear** for the purpose of currency conversion, shown in figure 12.

   For more information on currency conversion, see "Currency Conversion" on page 11.
9. Enter the **LCR Horizon (in Days)** for the purpose of calculating Liquidity Coverage Ratio as prescribed in the Basel III guidelines, shown in figure 12.
10. Select the Legal Entity under the **Legal Entity Selection** field**.**

NOTE

Legal entity selection is dependent on the consolidation type selected:

○If Solo Run is selected, you will have to manually select all the Legal Entities for which the run is to be executed.

○If Consolidated Run is selected, you are allowed to select the parent node only and all the legal entities under this parent node is automatically selected for execution.

You have successfully defined a Run.

The procedure for executing a run is as follows:

1. Click to select a Run under section **List of Runs** in the **Run Management Summary** Screen.
2. Click in the **List of Runs** section to open the **Run Execution Parameter Selection** screen to define the execution parameters, shown in the following figure:

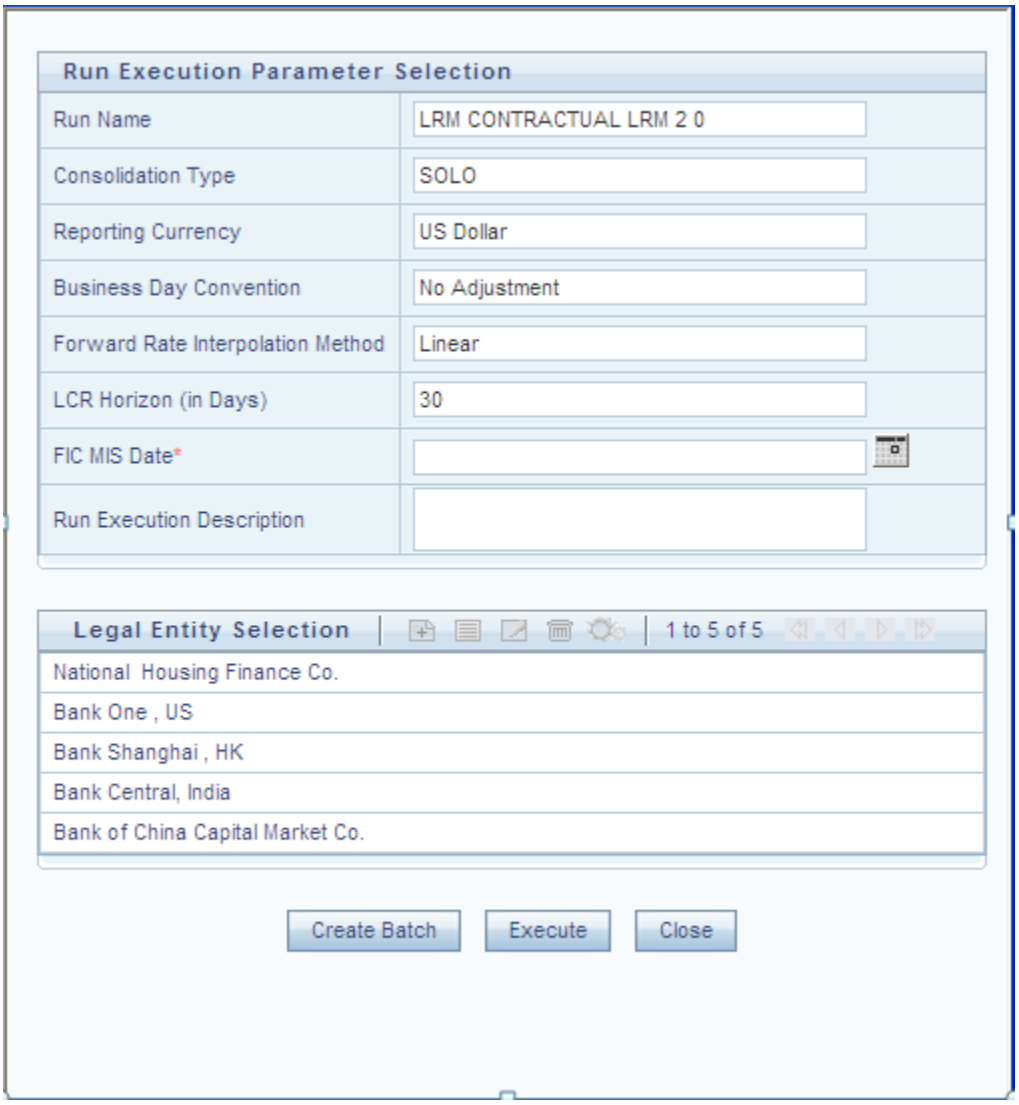


Figure 12: Run Execution Parameter Selection

NOTE

All fields except **FIC MIS Date** and **Run Execution Description** are non-editable fields.

3. Enter the **FIC MIS Date** which is the execution date in which the data is to be available in the stage table, shown in figure 13.
4. Enter the Run Description under the field **Run Execution Description,** shown in figure 13.
5. Click **Execute** to execute the Run immediately or else click **Create Batch** to schedule a batch to a later date.

To view the Run Execution Summary screens with the relevant description of each field to be updated, see

"Annexure A: Screen Format" on page 56.

NOTE

○If you are not executing the run for the first time, then the parameters in the **Run Parameters** Link will be the same as the one selected for the previous run.

○You have the option of defining and executing any number of Runs. For each Run defined, you can select all or few assumptions to be applied to the run. You also have the option of re-executing the same run for different Execution dates.

4.2.Applying Counterbalancing Strategies

After executing BAU and Stress Runs, Counterbalancing Strategies are applied to the liquidity gaps identified after execution of the Run. *For more information on the types of Counterbalancing Strategies, see "Counterbalancing Strategies" on page 38.*
The step-by-step procedure to apply Counterbalancing Strategies on indentified liquidity gaps is as follows:

1. Click **Counterbalancing Strategy Definition** link on the Left Hand Side (LHS) menu of the LRM Application. The Counterbalancing Strategy Summary screen appears. *To view the Counterbalancing Strategy Summary screen with the relevant description of each field to be updated, see "Annexure A: Screen Format" on page 56.*
2. Click in the counterbalancing strategy summary screen. The **Counterbalancing Strategy Definition** screen appears to define the counterbalancing strategy.
3. Enter the name of the counterbalancing strategy in the field **Counterbalancing Strategy Name,** shown in the following figure:

Figure 13: Description and Counterbalancing Strategy Name Selection

4. Enter the **Description** of the Counterbalancing Strategy, shown in the preceding figure.
5. Click to select the Execution Date in the **FIC MIS Date** field, shown in the following figure:

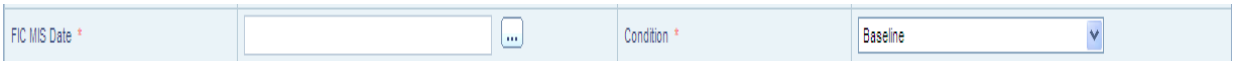


Figure 14: FIC MIS Date Selection

6. Select the type of Run (Baseline, Stress or Contractual) under field **Condition**, shown in the preceding figure.
7. Click to select the Run Name in the **Run Selection** field shown in the following figure:

Figure 15: Run and Execution ID selection

8. Select the **Run Execution ID** from the dropdown shown in the preceding figure.
9. Select the **Currency** for which the Counterbalancing Strategy is to be executed shown in the following figure:

Figure 16: Currency and Legal Entity

10. Select the **Legal Entity** for which the Counterbalancing Strategy is to be executed shown in the preceding figure.
11. Select the level at which the Time Buckets are to be displayed shown in the following figure:

    For more information on multi level time buckets, see "Time Bucketing" on page 10.

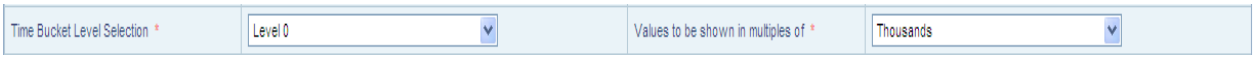


Figure 17: Time Bucket Level Selection

12. Select the **Values to be shown in multiples of** Thousands, Million or Billion, shown in the preceding figure:
13. Click  to display the **Liquidity Gap Report**, shown in the following figure:

Liquidity Gap Report

Liquidity Position	Time Bucket																
	Overnight	1-1Days	2-2Days	3-3Days	4-4Days	5-5Days	6-6Days	7-7Days	8-8Days	9-9Days	10-10Days	11-11Days	12-12Days	13-13Days	14-14Days	15-15Days	16-16Days
Inflow	0.00	0.00	797.34	0.00	0.00	21.24	9.98	0.00	17.41	0.00	0.00	0.00	1,150.65	0.00	79.83	0.00	0.0
Outflow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Gap	**0.00**	**0.00**	**797.34**	**0.00**	**0.00**	**21.24**	**9.98**	**0.00**	**17.41**	**0.00**	**0.00**	**0.00**	**1,150.65**	**0.00**	**79.83**	**0.00**	**0.0**

Figure 18: Liquidity Gap Report

14. Click  button in the **Counterbalancing Positions** section to view the **Add Counterbalancing Position** screen. In this screen you can define five different types of counterbalancing strategies. *To view the "Add counterbalancing position" screen with the relevant description of each field, see "Annexure A: Screen Format" on page 56.*
15. Each counterbalancing strategy has its own edit option () which will allow you to select the instrument from the **Instrument Selection Browser** screen and subsequently apply the counterbalancing strategy to the identified Liquidity Gap. A detailed explanation in relation to the inputs required for each counterbalancing strategy is provided in the following section:

- **Sale of Marketable Assets**

The list of instruments displayed in the **Instrument Selection Browser** screen is taken from the table **FCT_COMMON_ACCOUNT_SUMMARY** where Marketability Indicator is set to **Y**. You can alternatively search for the instrument by selecting the various filter options in the **Advanced Filter** field.

The following information is auto populated from the **FCT_COMMON_ACCOUNT_SUMMARY** table when you select the instrument in the **Instrument Selection Browser** Screen.

- Asset
- Natural Currency
- Asset Maturity Date
- Units Available
- Market Value per Unit(NCY)
- Market Value per Unit (Converted)
- Number of Days for Liquidation

The following information is to be updated by you:

- Units to be sold: State the number units of the instrument to be sold.
- Discount (in %): Discount provided on the price of the instrument is to

be entered in percentage.

- Revised Inflow Bucket: Select the inflow bucket where the above stated cash inflow will occur.

If an additional instrument is to be added then click  and repeat the above stated procedure.

- **Sale of Other Assets**

  The list of assets displayed in the Instrument Selection Browser screen is taken from the table **FCT_COMMON_ACCOUNT_SUMMARY** where encumbrance status is set to **N**. You can alternatively search for the instrument by selecting the various filter options in the Advanced Filter field.

  The following information is auto populated from the **FCT_COMMON_ACCOUNT_SUMMARY** table when you select the Asset in the **Instrument Selection Browser** Screen.

  - Asset
  - Natural Currency
  - Asset Value(NCY)
  - Asset Value (Converted)
  - Number of Days for Liquidation

  The following information is to be updated by you:

  - Percentage of Assets to be sold: Specify the percentage of units of instruments to be sold.
  - Discount (in Percentage): The discount provided on the price of the instrument is to be entered in percentage.
  - Inflow Bucket: Select the inflow bucket where cash inflows will occur.

  If an additional asset is to be added then click  button and repeat the above stated procedure.

- **Rollover of existing Repos**

  The list of Repos to be rescheduled, displayed in the **Instrument Selection Browser** screen is taken from the table F**CT_COMMON_ACCOUNT_SUMMARY** and **STG_ACCOUNT_CASH_FLOWS** where encumbrance status is set to 'N' and it's a Repo Transaction. You can alternatively search for the instrument by selecting the various filter options in the **Advanced Filter** field.

  The following information is auto populated from the **FCT_COMMON_ACCOUNT_SUMMARY** table when you select the Repos in the Instrument Selection Browser Screen.

  - Repo Name
  - Natural Currency
  - Repo Maturity Date
  - Repo Maturity Amount (NCY)
  - Repo Maturity Amount (Converted)
  - Underlying Instrument
  - Instrument Maturity Date

- Number of Units
- Market Value per unit (NCY)

The following information is to be updated by you:

- Revised Maturity Bucket: Specify the Revised Time Bucket in which the repo values are to be readjusted. Revised Maturity Bucket should fall within the range of number of days to maturity of the underlying instrument.
- Haircut (%): Provide the haircut in percentage.

If an additional repo is to be added then click  button and repeat the above stated procedure.

- **New Repo Deal**

The list of instruments displayed in the **Instrument Selection Browser** screen is taken from the table **FCT_COMMON_ACCOUNT_SUMMARY** where the underlying is a Repo. You can alternatively search for the instrument by selecting the various filter options in the **Advanced Filter** field.

The following information is auto populated from the **FCT_COMMON_ACCOUNT_SUMMARY** table when you select the Instrument to be purchased:

- Natural Currency
- Availability Start Date
- Availability End Date
- Units Available
- Market Value per Unit(NCY)
- Market Value per Unit (Converted)
- Revised Maturity Amount

The following information is to be updated by you:

- Number of units to be Repo'd: Specify the number of units to be repo'd.
- Haircut (%): Provide the haircut in percentage.
- Revised Inflow Bucket: Specify the Revised Inflow Bucket that is in which bucket you will purchase the Instrument.
- Revised Maturity Bucket: Specify the Revised Maturity Bucket

If an additional instrument is to be added then click  button and repeat the above stated procedure.

- **New Funding like Deposits, Primary Issuances, Borrowing and so on**

The list of products to be purchased displayed in the **Instrument Selection Browser** screen is taken from the table GL Master, where GL items with GL Type as Liability is considered. You can alternatively search for the instrument by selecting the various filter options in the **Advanced Filter** field.

The following information is to be updated by you for the product selected:

- Inflow Bucket: Specify the inflow bucket, that is, in which bucket the Instrument is to be purchased.
- Inflow Amount: Specify the amount you are going to purchase in the given bucket.

- Maturity Bucket: Specify the bucket in which the instrument is Maturing
- Maturity Amount: Specify the maturity amount of the instrument.

If an additional instrument is to be added then click  button and repeat the above stated procedure.

The following errors may pop up while defining Counterbalancing Strategies:

○*The Counterbalancing strategy name already exists. Please specify a different name:* This error appears if you enter the name of the counterbalancing strategy which is already defined then system.

○*The upper bound of the Inflow Bucket cannot be less than MIS Date + No. of Days for Liquidation:* This error appears when the time bucket selected is less than execution date.

○*Units to be sold cannot be greater than the Units Available:* This error message appears if the given units to be sold are more than the units available for the selected instrument.

○*Discount % needs to be between 0 and 100%:* This error message appears if the values provided in the discount field is not between Zero and Hundred.

○*Revised Maturity Bucket should fall within the range of the number of days to maturity of the underlying instrument:*If the revised maturity date bucket entered is greater than the maturity date of the underlying, this error pop up message would appear.

16. Click **Validate** to validate the entries updated by you or else click **OK** after defining the counterbalancing strategy.
17. Click **Apply Counterbalancing** in the **Counterbalancing Strategy Definition** screen to execute the Counterbalancing Strategy and view the updated report with the revised liquidity gaps.

You can now view the time bucket wise gap report and see the impact of each counterbalancing strategy selected in the **Liquidity Gap Report Post Counterbalancing** section. You can save these strategies for future use by clicking the **Save** button.

Annexure A: Screen Formats

LRM Application Login and Log off Procedures

Figure 19: OFSAAI Log in Screen

Screen Description	OFSAAI Login screen is used for login to OFSAAI. Once logged in OFSAAI the LRM Application can be accessed.	
Reference number	**Tag**	**Description**
1	Language	Select the language in this field.
	User ID	Enter the User ID to Login.
	Password	Enter the password to Login.
2	Login	Click the Login Button after providing User ID and Password for Login.

Table 18: OFSAAI Log In

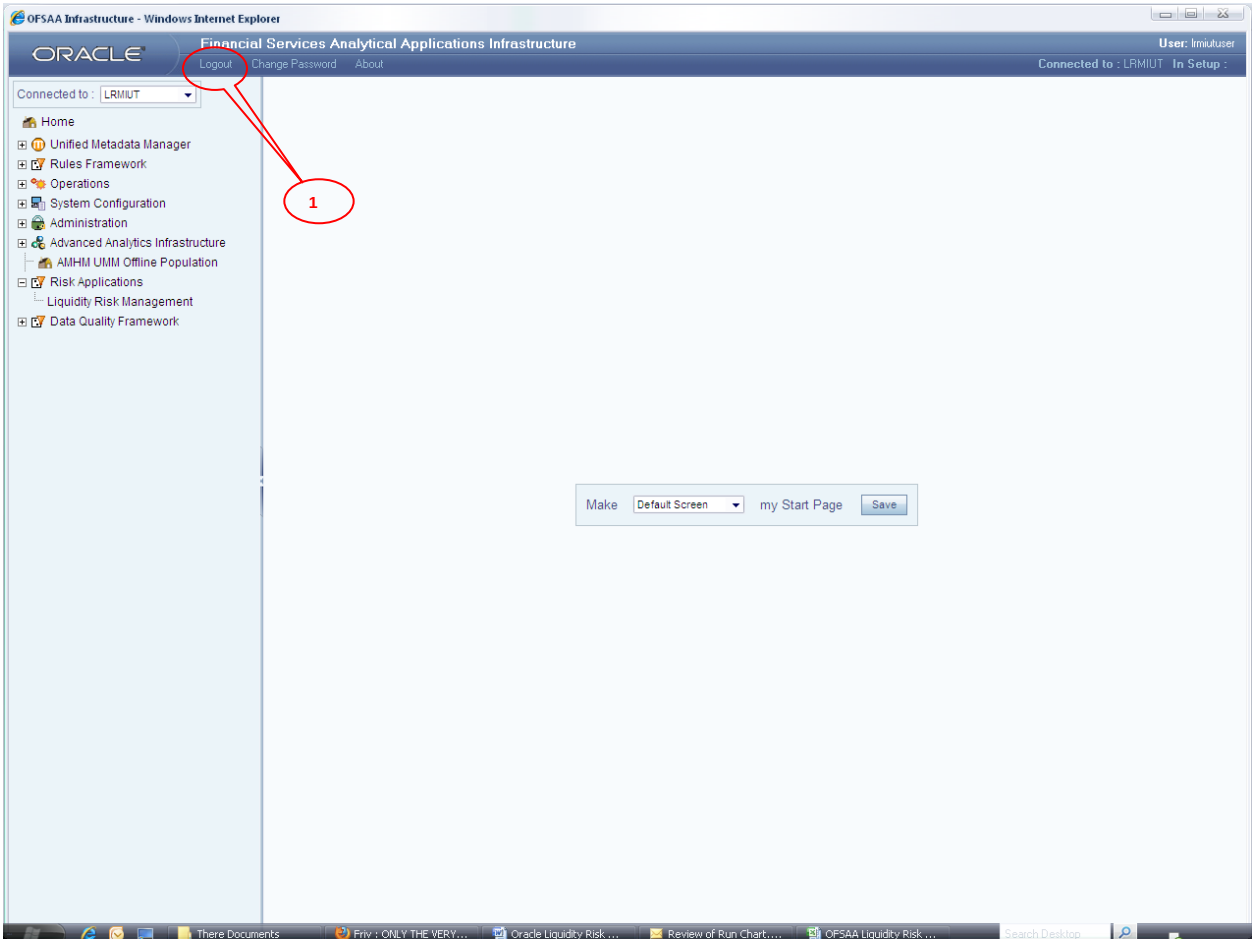


Figure 20: OFSAAI Logout Screen

Screen Description	This is the first screen which appears when you log into OFSAAI.	
Reference number	**Tag**	**Description**
1	Logout	Click this button to logout of OFSAAI.

Table 19: OFSAAI Log Out Screen

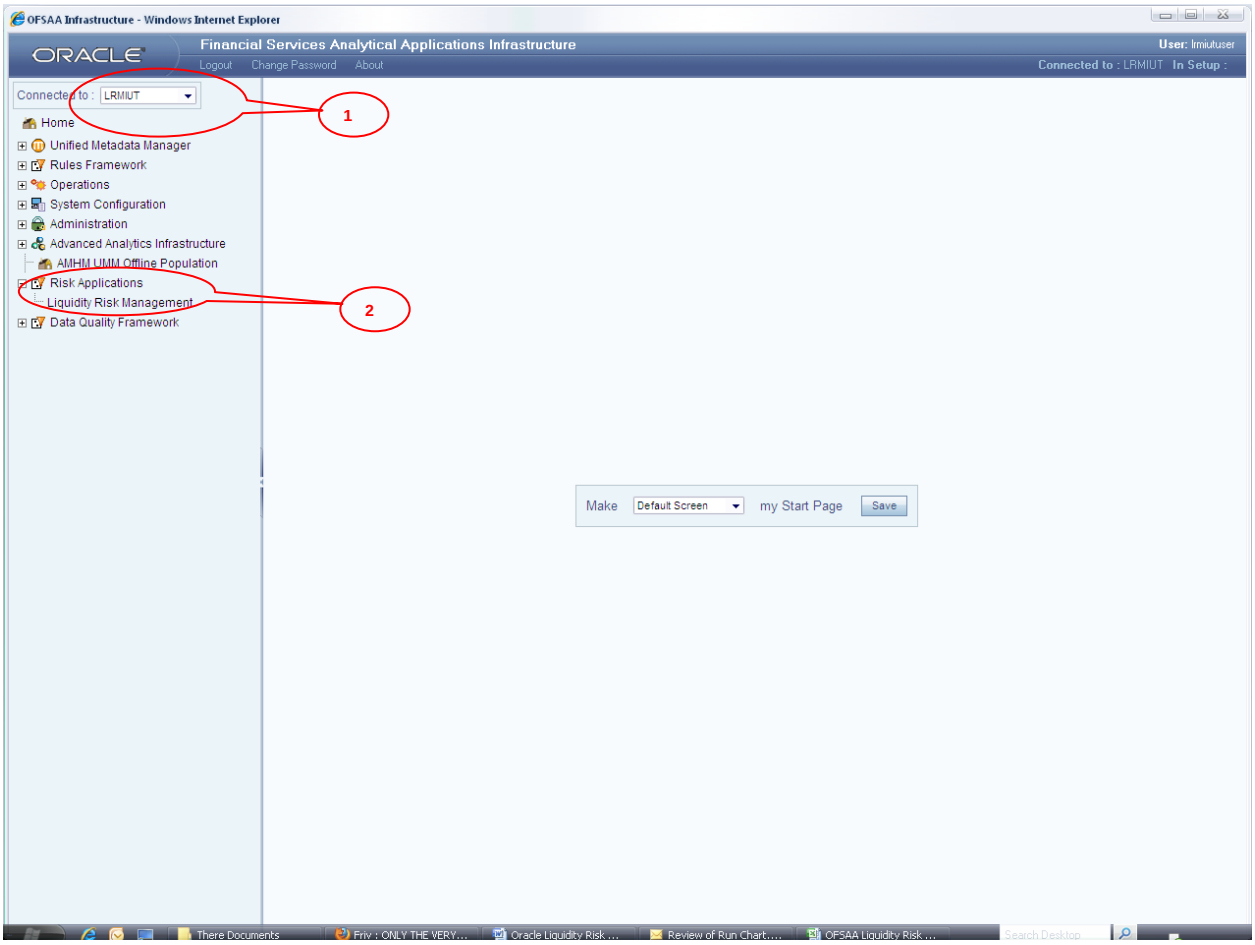


Figure 21: Liquidity Risk Management Link

Screen Description	This is the first screen which appears when you log into OFSAAI.	
Reference number	**Tag**	**Description**
1	Infodom	Select the infodom where the LRM Application is installed.
2	Liquidity risk Management Link	Click this link to access LRM Application Screens.

Table 20: Liquidity Risk Management Link

Defining Time Buckets

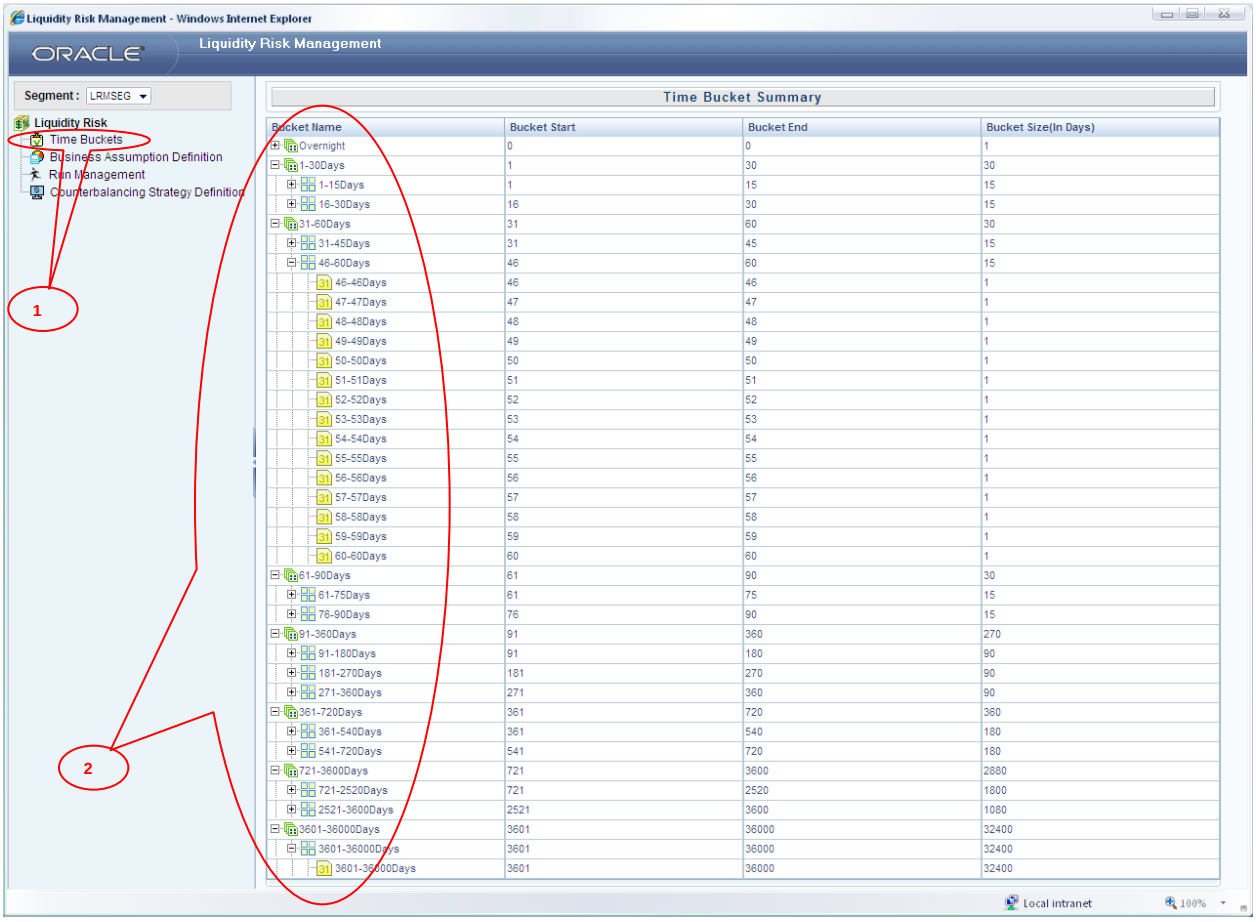


Figure 22: Time Bucket

Screen Description	Time Bucket Definition Screen allows you to edit or define the Time Buckets used in the LRM Application.	
Reference number	**Tag**	**Description**
1	Time bucket Definition	Click this link to view the defined Time Buckets.
2	Bucket Name	To view the time bucket definition click this link. Time bucket definition is shown as a tree structure as shown in the preceding figure.

Table 21: Time Bucket

Defining Business Assumptions

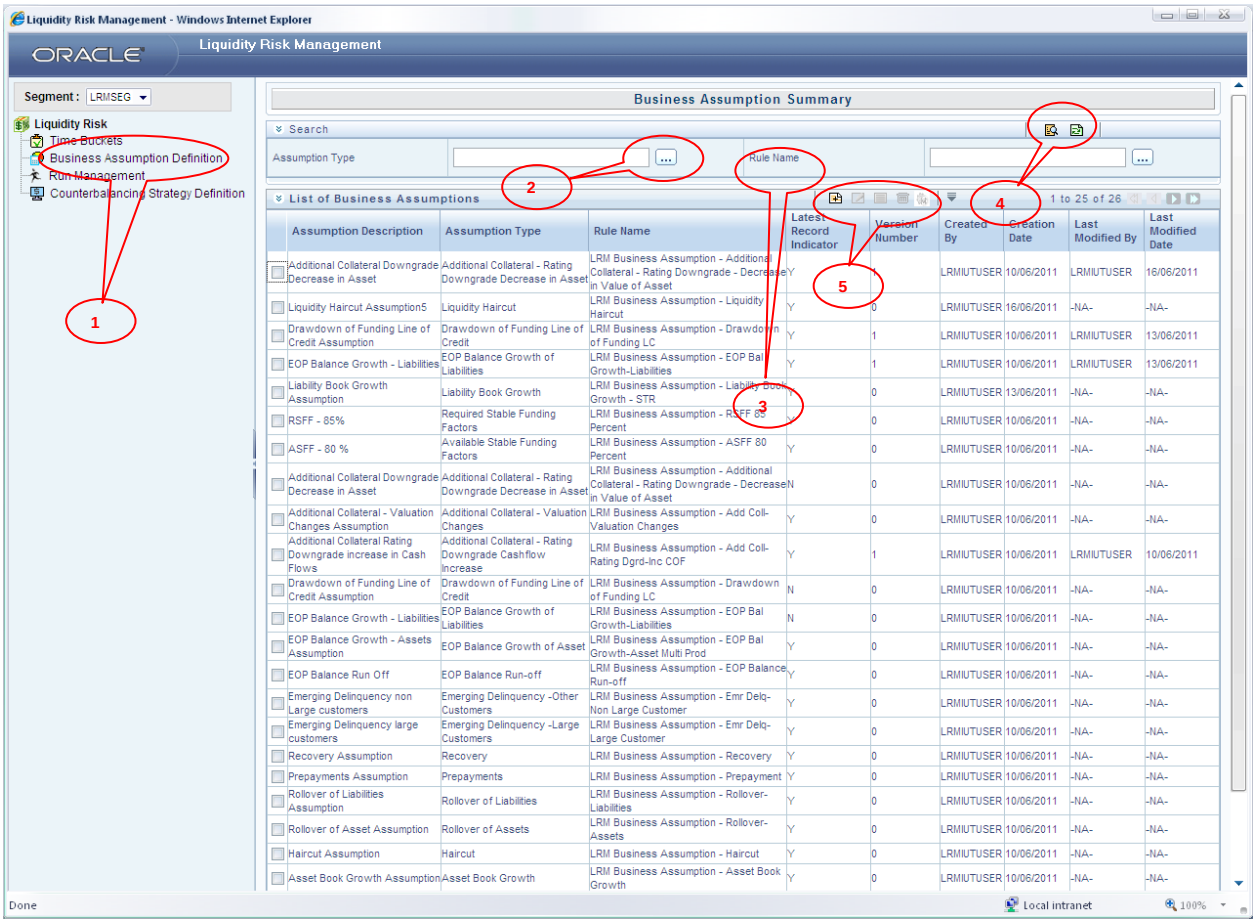


Figure 23: Business Assumption Summary

Screen Description	Business Assumption Summary displays a list of all the Assumptions which are defined by you.	
Reference number	**Tag**	**Description**
1	Business Assumption Definition	Click this link to define, view or edit business assumptions in the LRM Application,
2	Assumption Type	This section allows you to search the pre-defined assumption on the basis of the Assumption type. You need to specify the Assumption Type here for searching the pre-defined assumption.
3	Rule Name Selection	This section allows you to search the pre-defined assumption on the basis of the Rule Name. You need to specify the Rule Name here for searching the pre-defined assumption.
4	Search	This link allows you to search the Assumption on the basis of the Assumption Type or Rule Name defined by you.
	Reset	This link allows you to reset the screen to its default state where all the assumptions are displayed.
5	Add	This link allows you to define a new assumption.
	View	This link allows you to view the selected assumption.
	Edit	This link allows you to edit the selected assumption.

Screen Description	Business Assumption Summary displays a list of all the Assumptions which are defined by you.	
Reference number	**Tag**	**Description**
	Delete	This link allows you to delete the selected assumption.

Table 22: Business Assumption Summary

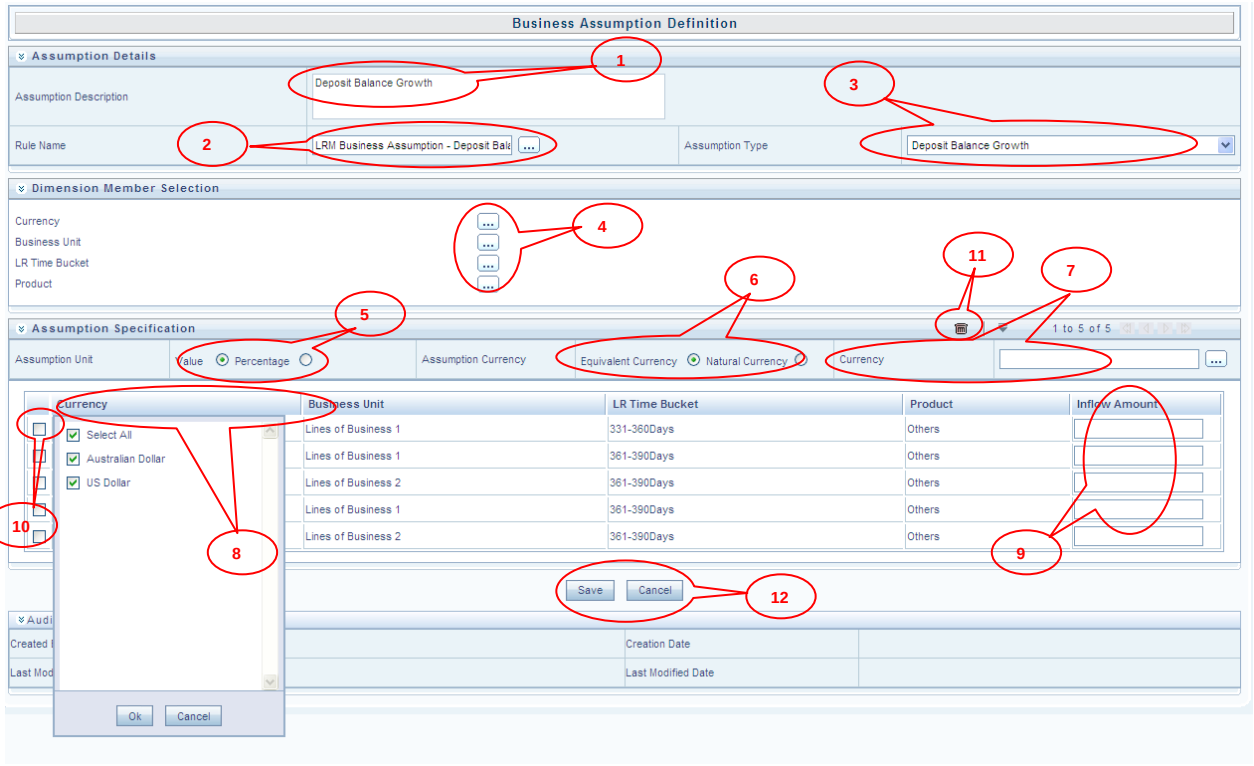


Figure 24: Business Assumption Add - Deposit Balance Growth

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1	Assumption Description	This text box allows you to specify the Assumption Description.
2	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption which you are defining.
3	Assumption Type	This dropdown allows you to select the type of assumption you want to define.
4	Dimension Member Selection	When the Rule and Assumption Type has been selected by you, all the dimensions which are available in the Rule are displayed in this section. Each dimension will appear with its selection button which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6	Assumption Currency	This button is enabled if you select the Value as the option in Assumption Unit. Equivalent Currency is

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
		to be selected if you want to give value of the assumption as the common currency. Natural Currency is to be selected if you want to give the values of the assumption in the natural currency of the record.
7	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to define the Currency of the amount entered.
8	Filter	For each dimension of the rule, Filter is provided for ease of defining the assumption.
9	Assumption Value	This section allows you to enter the Assumption Amount.
10	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all the changes made to the screen.

Table 23: Business Assumption Add - Deposit Balance Growth

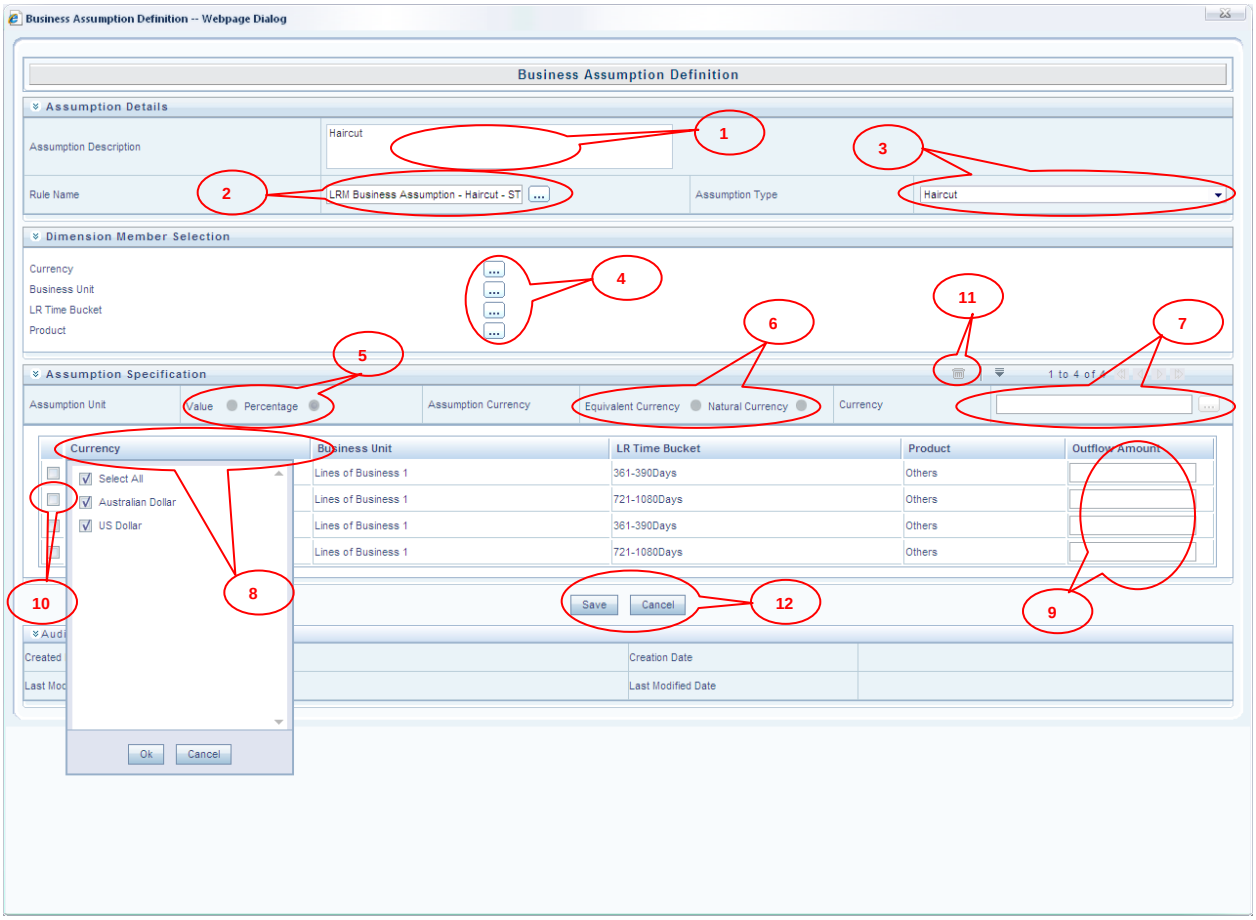


Figure 25: Business Assumption Add - Haircut

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1	Assumption Description	This Text Box allows you to specify the Assumption Description.
2	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption.
3	Assumption Type	This Dropdown allows you to select the type of assumption you want to define.
4	Dimension Member Selection	When the Rule and Assumption Type is selected, all the dimensions which are available in the Rule will be displayed in this section. Each dimension appears with its selection button; which allows you to select the nodes of the dimension member which participates in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value. For this assumption, Assumption unit selected can be in percentage only.
6	Assumption Currency	This button is disabled for this assumption.
7	Currency	This button is disabled for this assumption.
8	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9	Assumption Value	This section allows you to enter the Assumption Amount.
10	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 24: Business Assumption Add - Haircut

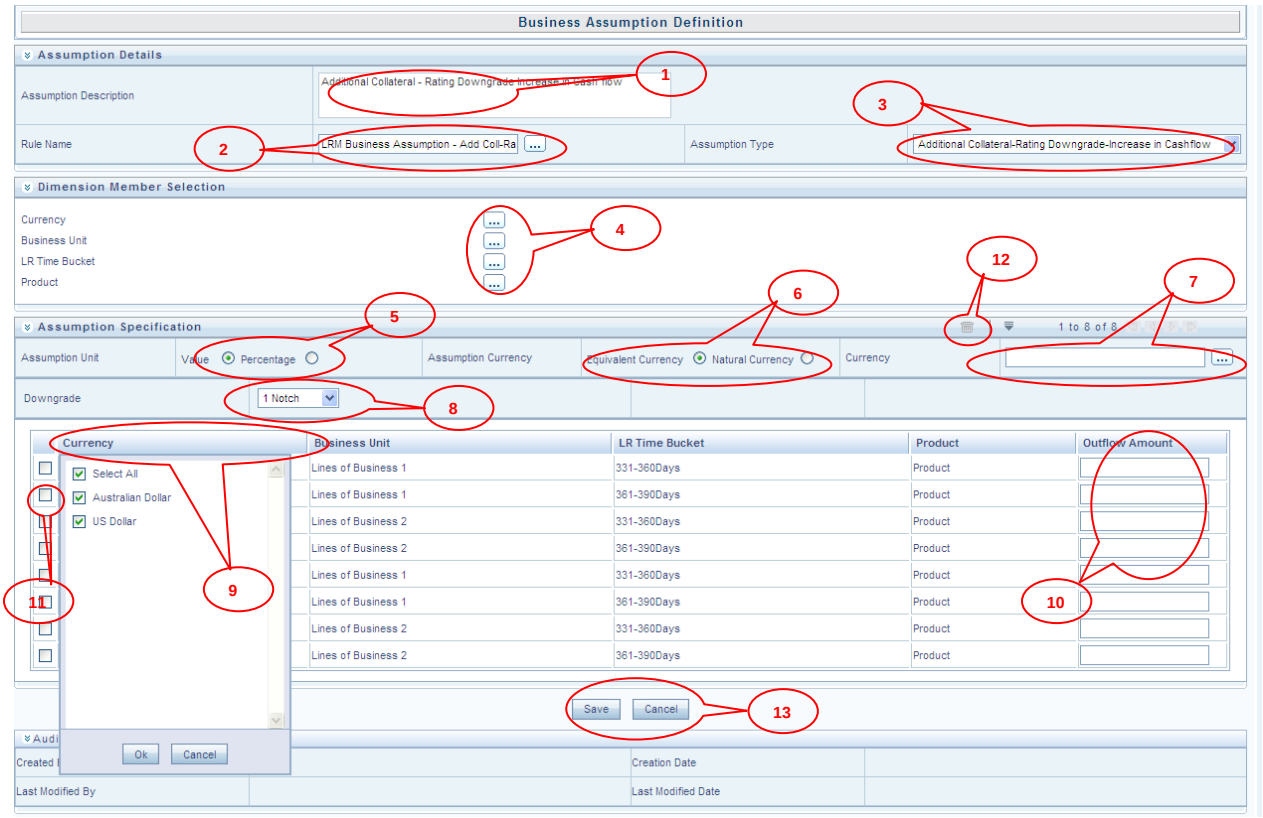


Figure 26: Business Assumption Add - Additional Collateral - Rating Downgrade Increase in Cash flow

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption.
3.	Assumption Type	This dropdown allows you to select the type of assumption you want to define.
4.	Dimension Member Selection	When the rule and assumption type is selected, all the dimensions which are available in the Rule are displayed in this section. Each dimension will appear with its selection button; which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected value as the option in the Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the assumption in the natural currency of the record.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to define the Currency of the amount.
8.	Downgrade	This dropdown allows you to select the Notch Level over which the assumption is to be applied. There are 10 Different Notch Levels supported.
9.	Filter	For each dimension of the rule, Filter is provided for ease of defining the assumption.
10.	Assumption Value	This section allows you to enter the assumption amount.
11.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 25: Business Assumption Add - Additional Collateral - Rating Downgrade Increase in Cash flow

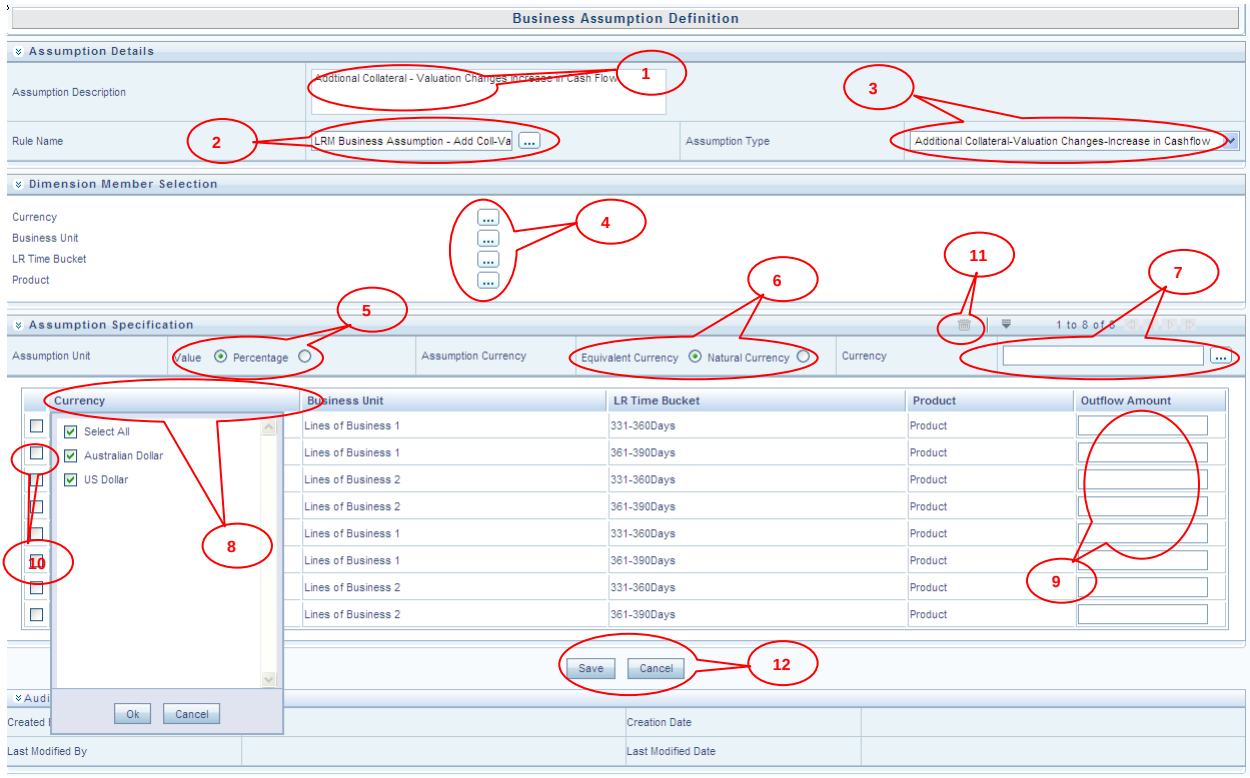


Figure 27: Business Assumption Add - Additional Collateral - Valuation Changes Increase in Cash Flow

Screen Description	Business Assumption Definition Screen allows you to define a new assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the assumption description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption which you are defining.

Screen Description	Business Assumption Definition Screen allows you to define a new assumption in the LRM Application.	
Reference number	**Tag**	**Description**
3.	Assumption Type	This dropdown allows you to select the type of Assumption you want to define.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button, which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking this button the respective **Dimension Member Selection** browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you select value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the assumption as the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to provide the currency of the amount entered for a particular assumption.
8.	Filter	For the dimension of the rule, filter is provided for ease of defining the assumption.
9.	Assumption Value	This section allows you to enter the assumption amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 26: Business Assumption Add - Additional Collateral - Valuation Changes-Increase in Cash flow

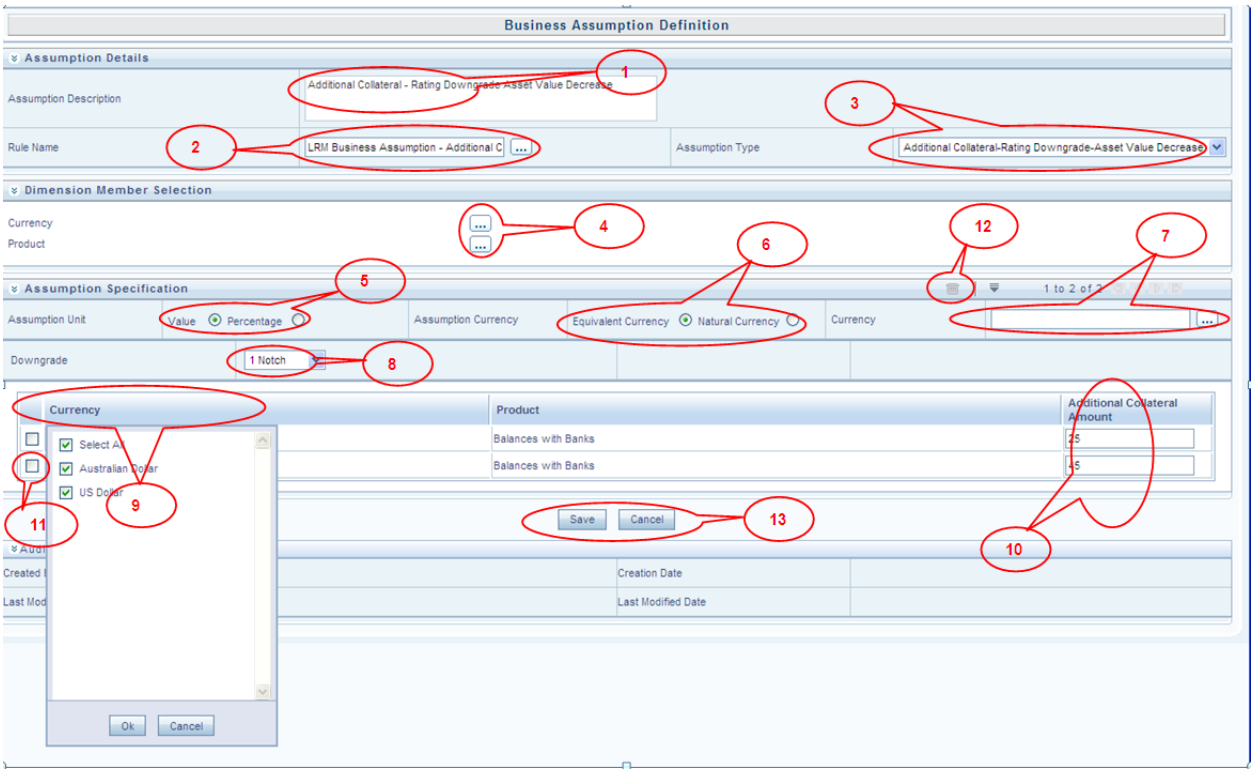


Figure 28: Business Assumption Add - Additional Collateral - Rating Downgrade- Asset Value Decrease

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This Text Box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the Dimensions which are available in the Rule is displayed in this section. Each Dimension appears with its selection button which allows you to select the nodes of dimension member which participates in defining the Assumption. By clicking the button the respective Dimension Member Selection Browser pops up.
5.	Assumption Unit	This Radio Button gives you the option of specifying the assumption in Percentage or Value.
6.	Assumption Currency	This Radio button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This Button allows you to define the Currency of the amount

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
		entered for Assumptions.
8.	Notch	This Dropdown allows you to select the Notch Level over which the Assumption is to be Applied. There are 10 Different Notch Level supported.
9.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
10.	Assumption Value	This section allows you to enter the Assumption Amount.
11.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
12.	Delete row	This Button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 27: Business Assumption Add - Additional Collateral - Rating Downgrade- Asset Value Decrease

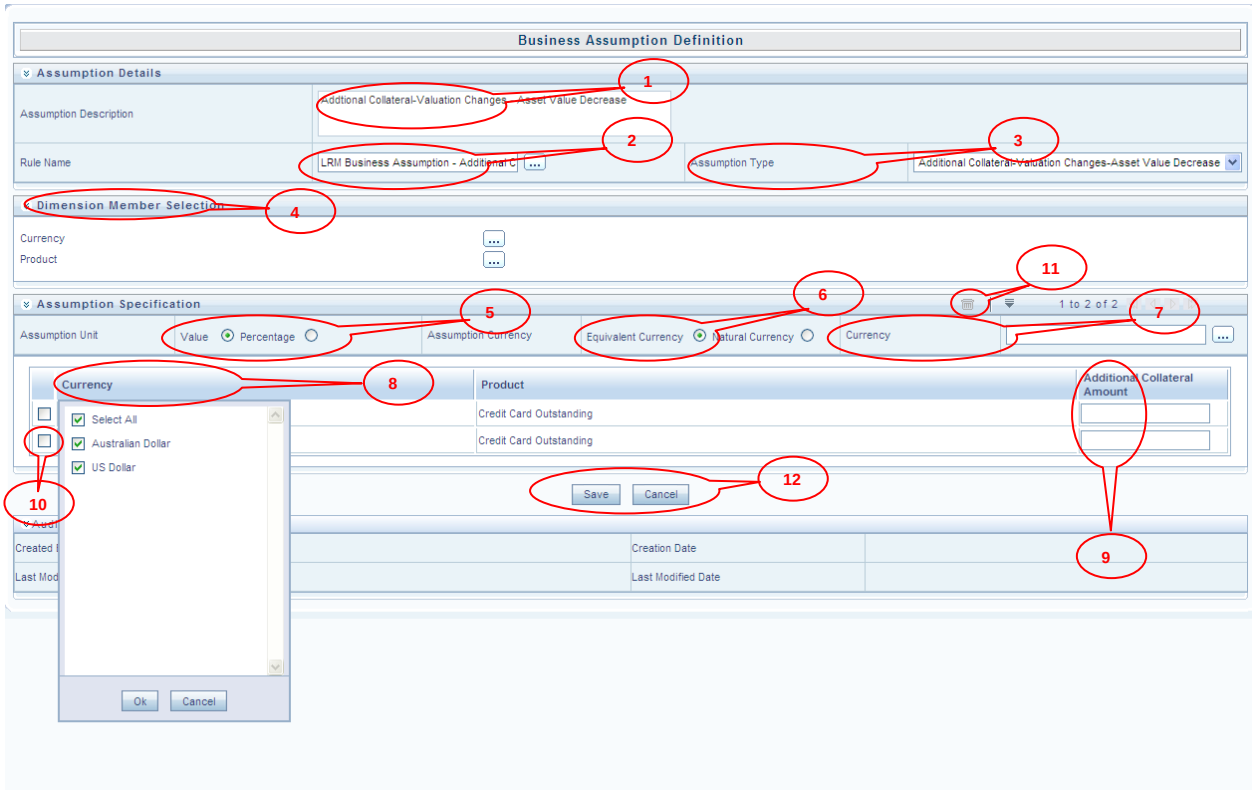


Figure 29: Business Assumption Add - Additional Collateral - Valuation Changes- Asset Value Decrease

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This Text Box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption you are defining.

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the Dimensions which are available in the Rule is displayed in this section. Each Dimension appears with its selection button which allows you to select the nodes of dimension member which participates in defining the Assumption. By clicking the button the respective Dimension Member Selection Browser pops up.
5.	Assumption Unit	This Radio Button gives you the option of specifying the assumption in Percentage or Value.
6.	Assumption Currency	This Radio button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This Button allows you to define the Currency of the amount entered for Assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This Button deletes all the records from the Grid where **Select Check Box** button is selected.
12.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 28: Business Assumption Add - Additional Collateral - Valuation Changes- Asset Value Decrease

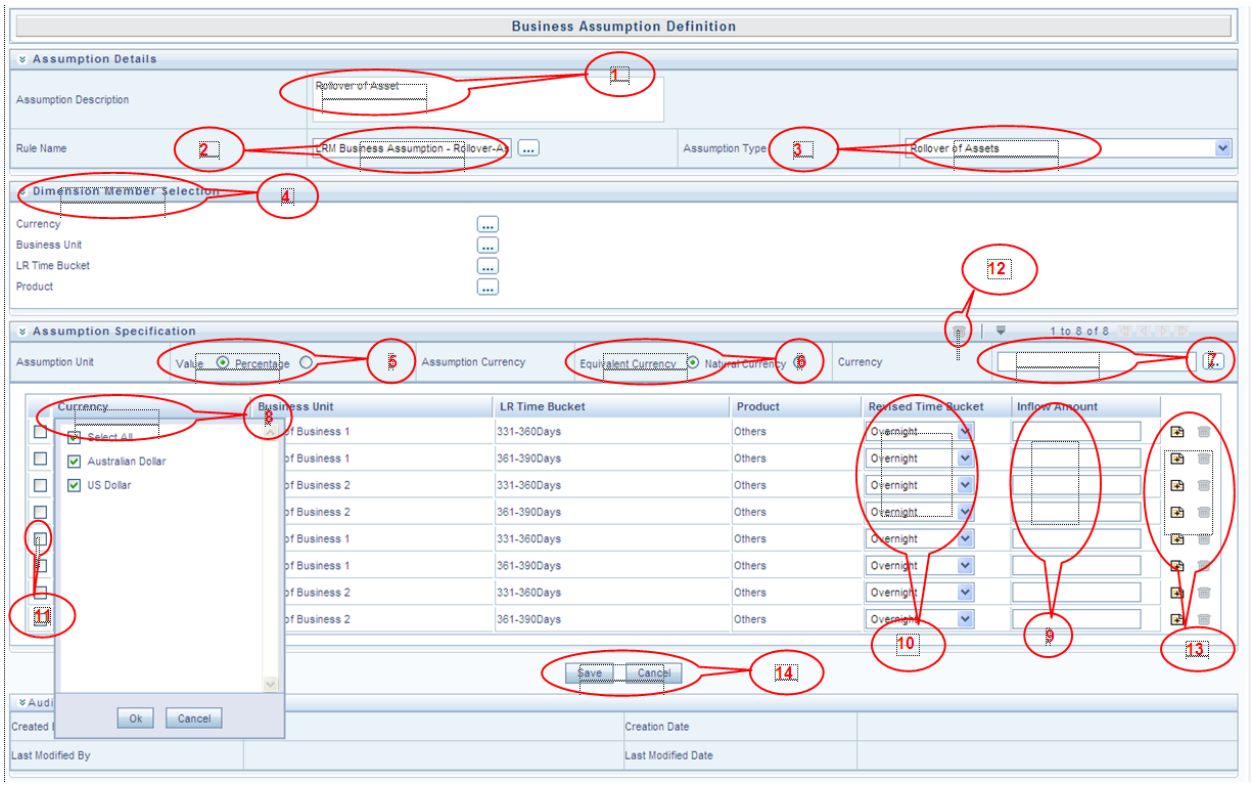


Figure 30: Business Assumption Add - Rollover of Assets

Screen Description	Business Assumption Definition Screen allows you to define a new assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the Assumption.
3.	Assumption Type	This dropdown allows you to select the type of Assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button, which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in the Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption in the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the field **Assumption Currency**. This button allows you to provide the currency of the

Screen Description	Business Assumption Definition Screen allows you to define a new assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
		amount entered.
8.	Filter	For each dimension of the rule, filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Revised Time Bucket	You can select the Revised Time bucket from the dropdown. Revised Time buckets in the dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
11.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the **Add** button to insert one more rows at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete row at the same combination.
14.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 29: Business Assumption Add - Rollover of Assets

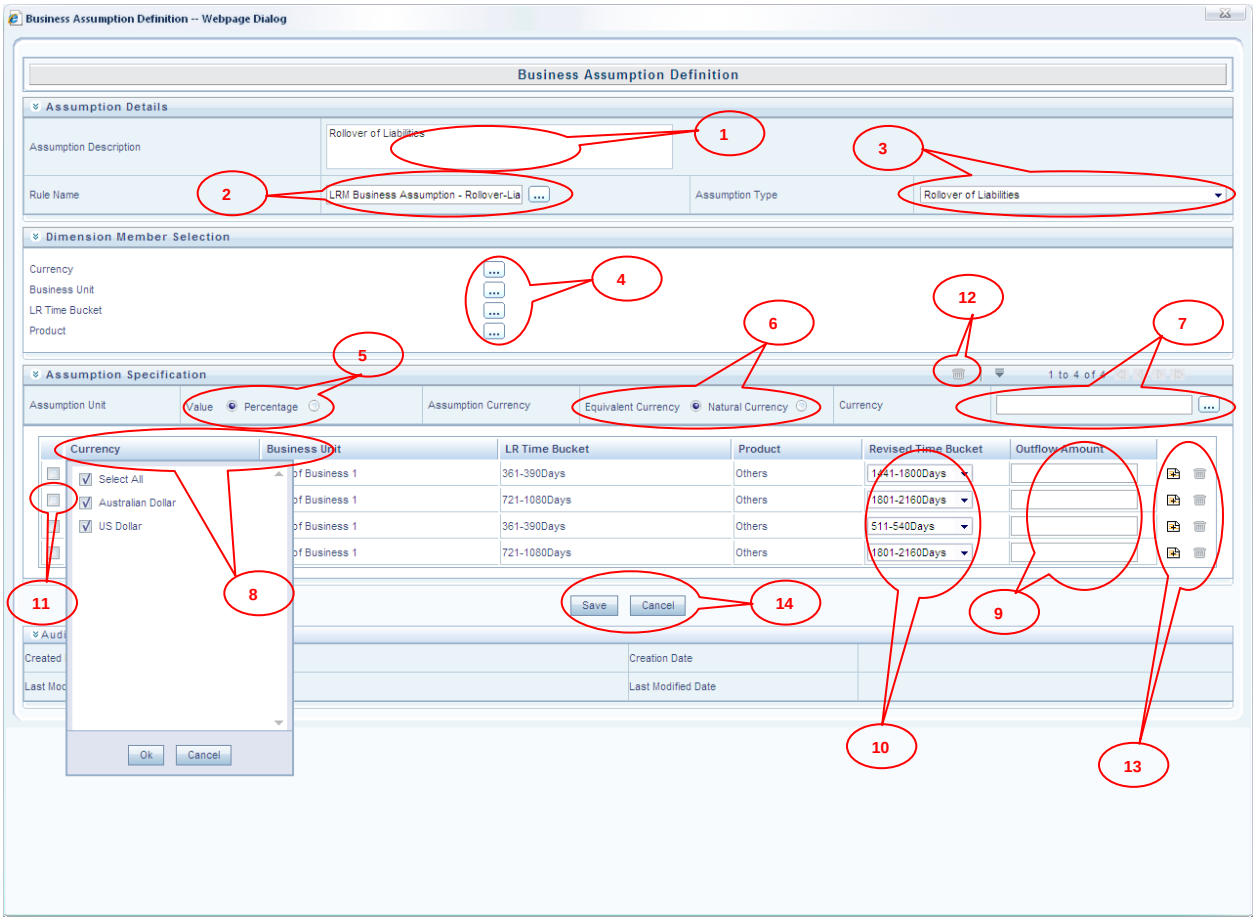


Figure 31: Business Assumption Add - Rollover of Liabilities

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the assumption description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the Dimensions which are available in the Rule is displayed in this section. Each Dimension appears with its selection button, which allows you to select the nodes of the dimension member which participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you select value as the option in the Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the assumption in the natural currency of the record.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to define the Currency of the amount entered for Assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for the ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the assumption amount.
10.	Revised Time Bucket	You can select the Revised Time bucket from the Dropdown. Revised Time buckets in the Dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
11.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Add	If an additional amount for one more bucket of the same combination is to be added then click the Add button to insert one more rows at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete the row at the same combination.
14.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 30: Business Assumption Add - Rollover of Liabilities

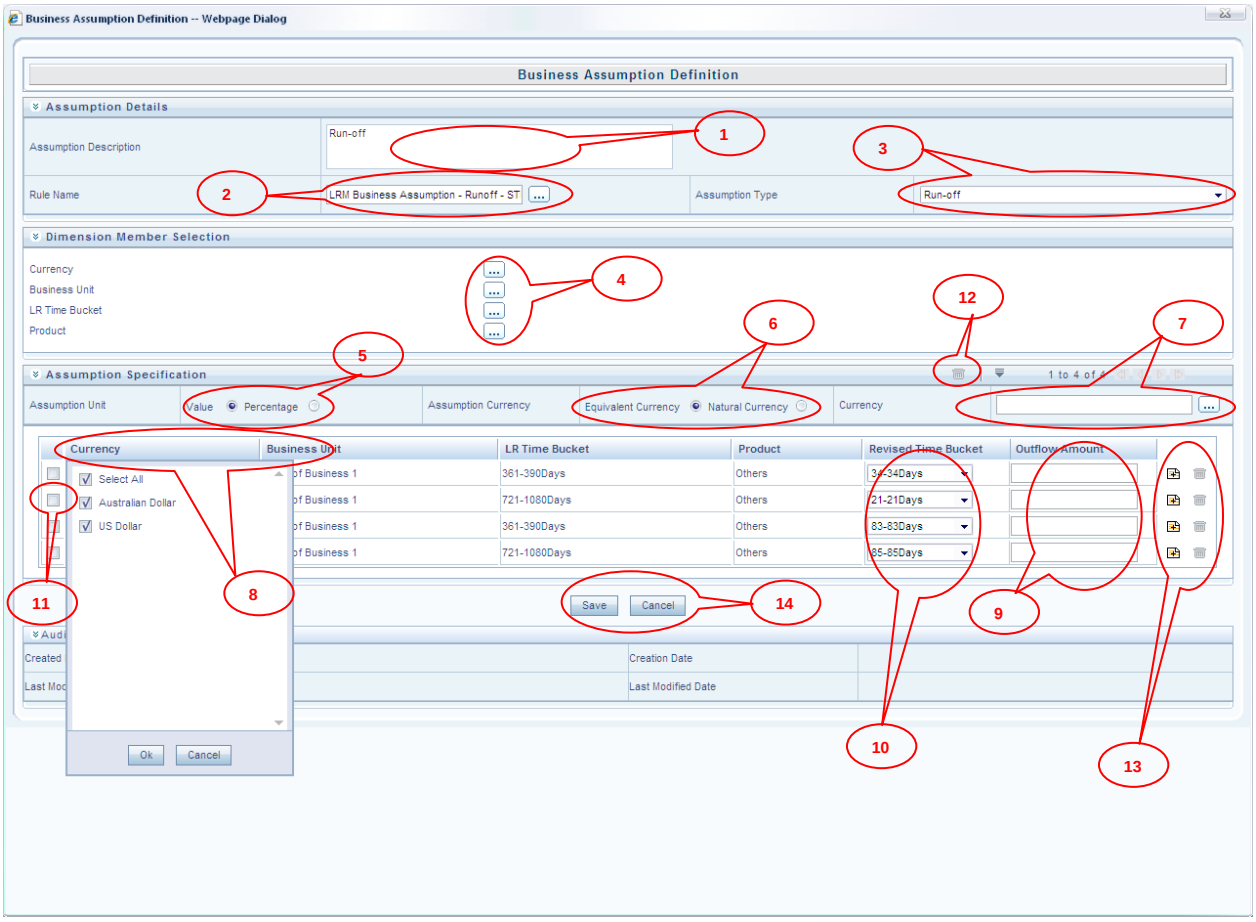


Figure 32: Business Assumption Add - Run-off

Screen Description	Business Assumption definition screen allows you to define a new assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the assumption description.
2.	Rule Name	This button allows you to select the pre-defined rule associated with the assumption.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button, which allows you to select the nodes of the dimension member which participates in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This Radio button is enabled if you have selected Value as the option in the field **Assumption Unit**. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.

Screen Description	Business Assumption definition screen allows you to define a new assumption in the LRM Application.	
Reference number	**Tag**	**Description**
7.	Currency	This button is activated if Equivalent Currency is selected in the field Assumption Currency. This Button allows you to define the Currency of the amount entered for Assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the assumption amount.
10.	Revised Time Bucket	You can select the Revised Time bucket from the dropdown. Revised Time buckets in the dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
11.	Select Check Box	If you click this button then the corresponding assumption row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the Add button to insert one more rows at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete row at the same combination.
14.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 31: Business Assumption Add - Run-off

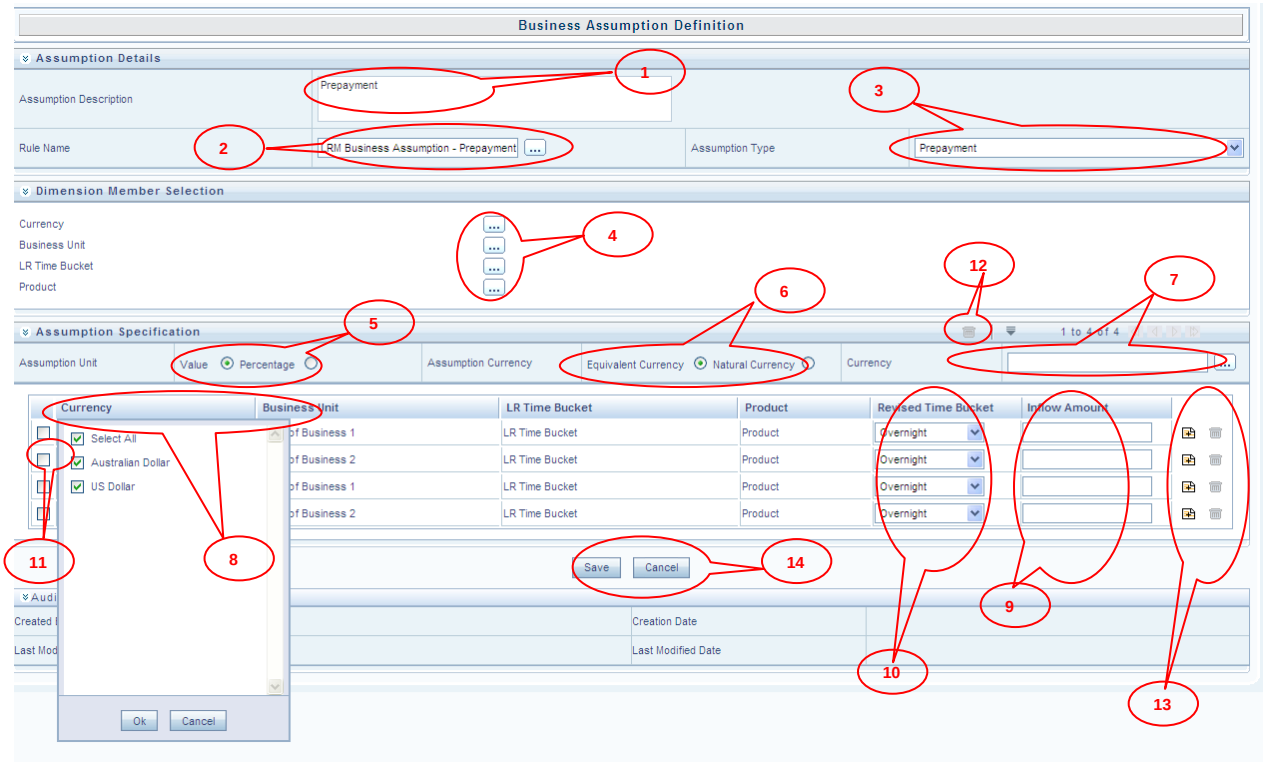


Figure 33: Business Assumption Add - Prepayment

Screen Description	Business Assumption Definition Screen allows you to define a new assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption which you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption you want to define.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the field **Assumption Currency**. This button allows you to provide the Currency of the amount entered for assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Revised Time Bucket	You can select the Revised Time bucket from this Dropdown. Revised Time buckets in the Dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
11.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Add	If an additional amount for one more buckets for the same combination is to be added then you can click on the Add button to insert one more rows at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to delete the row at the same combination.
14.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 32: Business Assumption Add - Prepayment

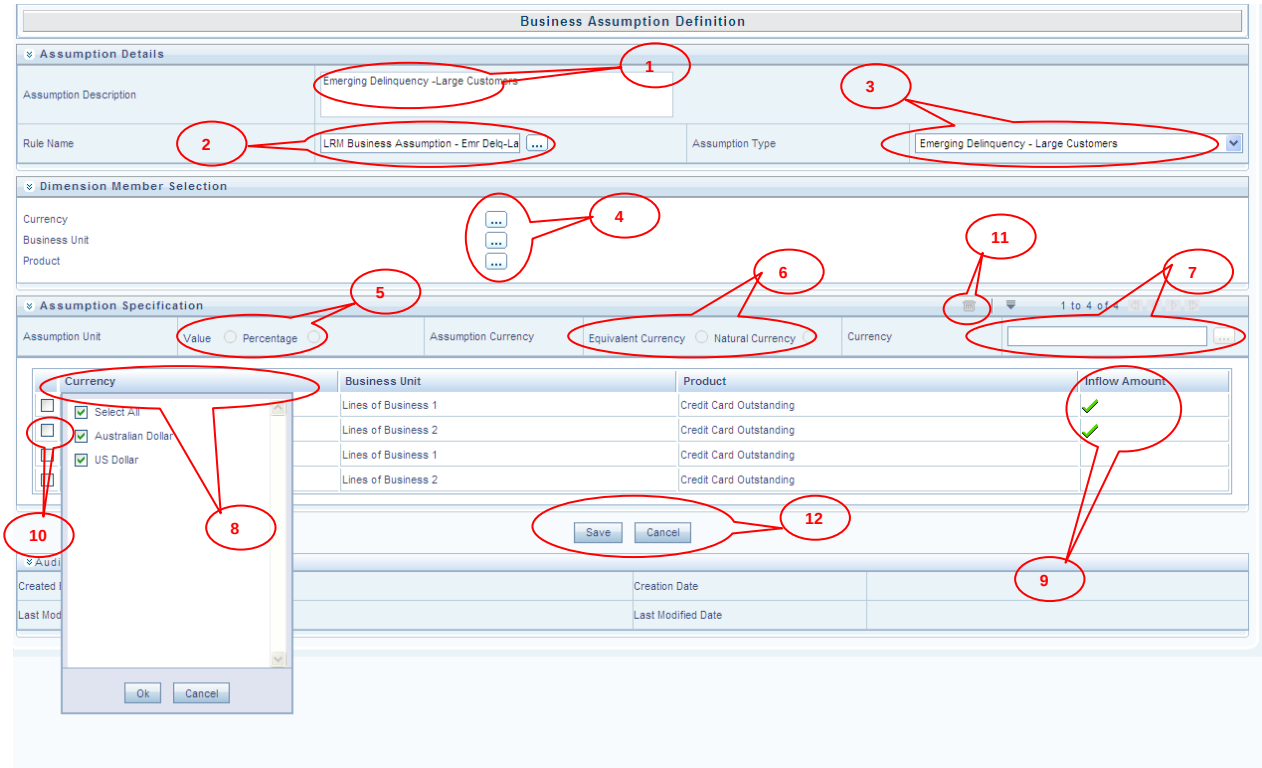


Figure 34: Business Assumption Add - Emerging Delinquency -Large Customers

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the Assumption.
3.	Assumption Type	This dropdown allows you to select the type of Assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button, which allows you to select the nodes of dimension member which will participate in defining the Assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button is disabled for this assumption.
6.	Assumption Currency	This button is disabled for this assumption.
7.	Currency	This button is disabled for this assumption.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the assumption.
9.	Assumption Selection	This section allows you to select the combination over which the assumption is to be applied.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 33: Business Assumption Add - Emerging Delinquency -Large Customers

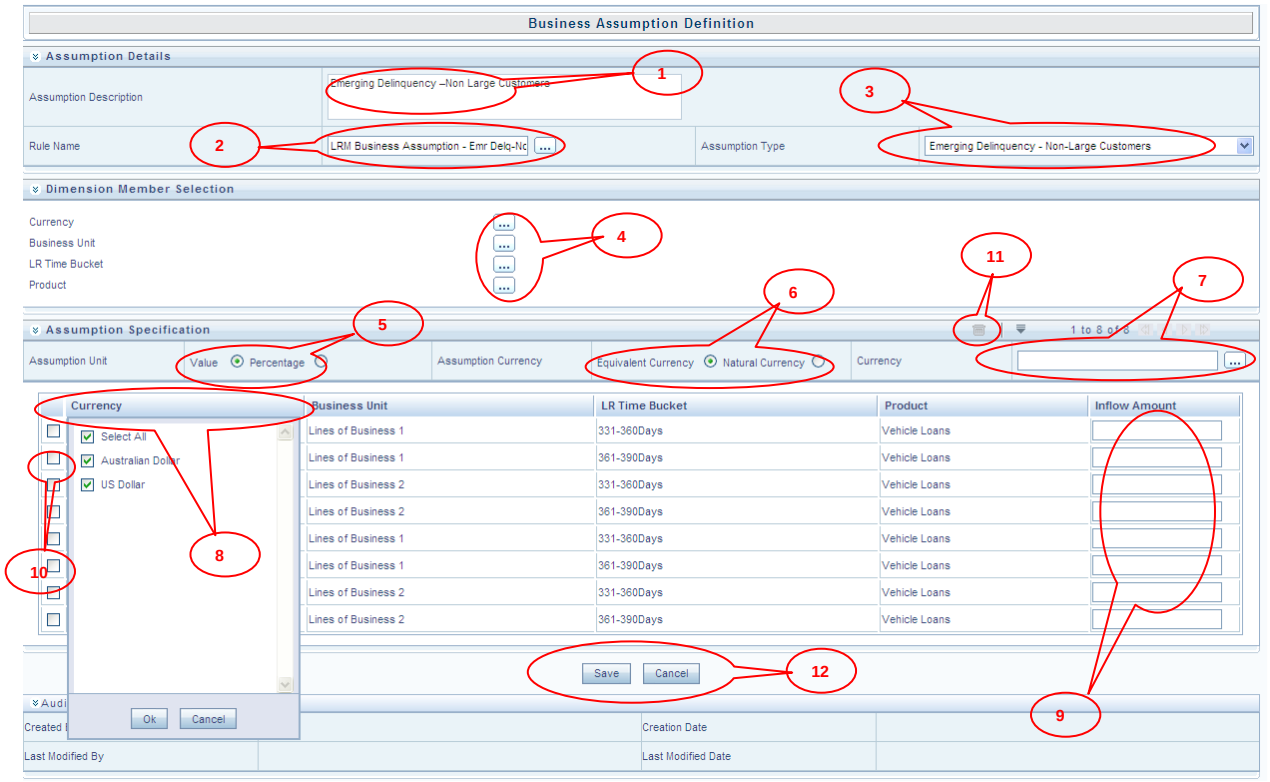


Figure 35: Business Assumption Add- Emerging Delinquency –Non Large Customers

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the predefined Rule which is associated with the Assumption which you are defining.
3.	Assumption Type	This dropdown allows you to select the type Assumption you have to define.
4.	Dimension Member Selection	When you select the Rule and Assumption Type, all the Dimensions which are available in the Rule is displayed in this section. Each Dimension will appear with its selection button, which allows you to select the nodes of dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption in the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to provide the Currency of the amount entered for assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 34: Business Assumption Add - Emerging Delinquency –Non Large Customers

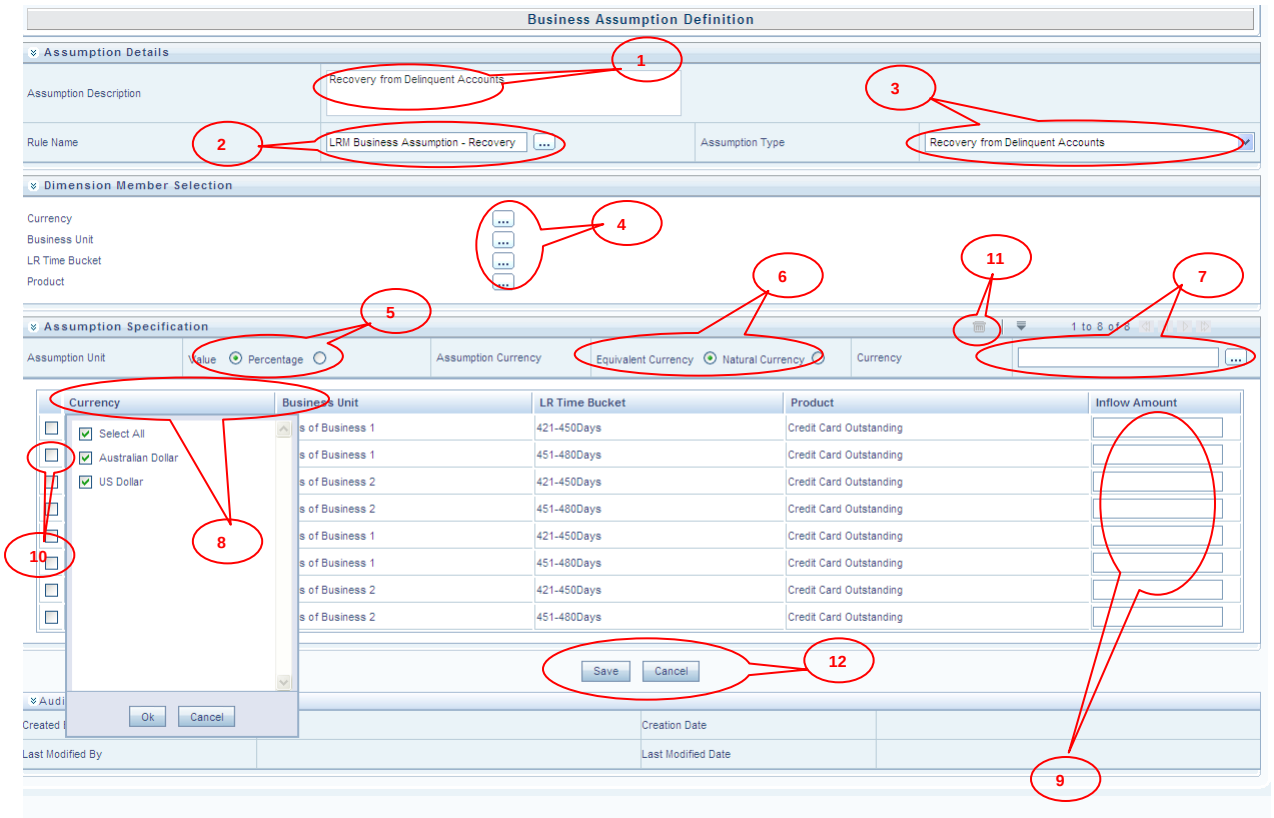


Figure 36: Business Assumption Add- Recovery from Delinquent Accounts

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption which you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to define the Currency of the amount entered for Assumption.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 35: Business Assumption Add – Recovery from Delinquent Accounts

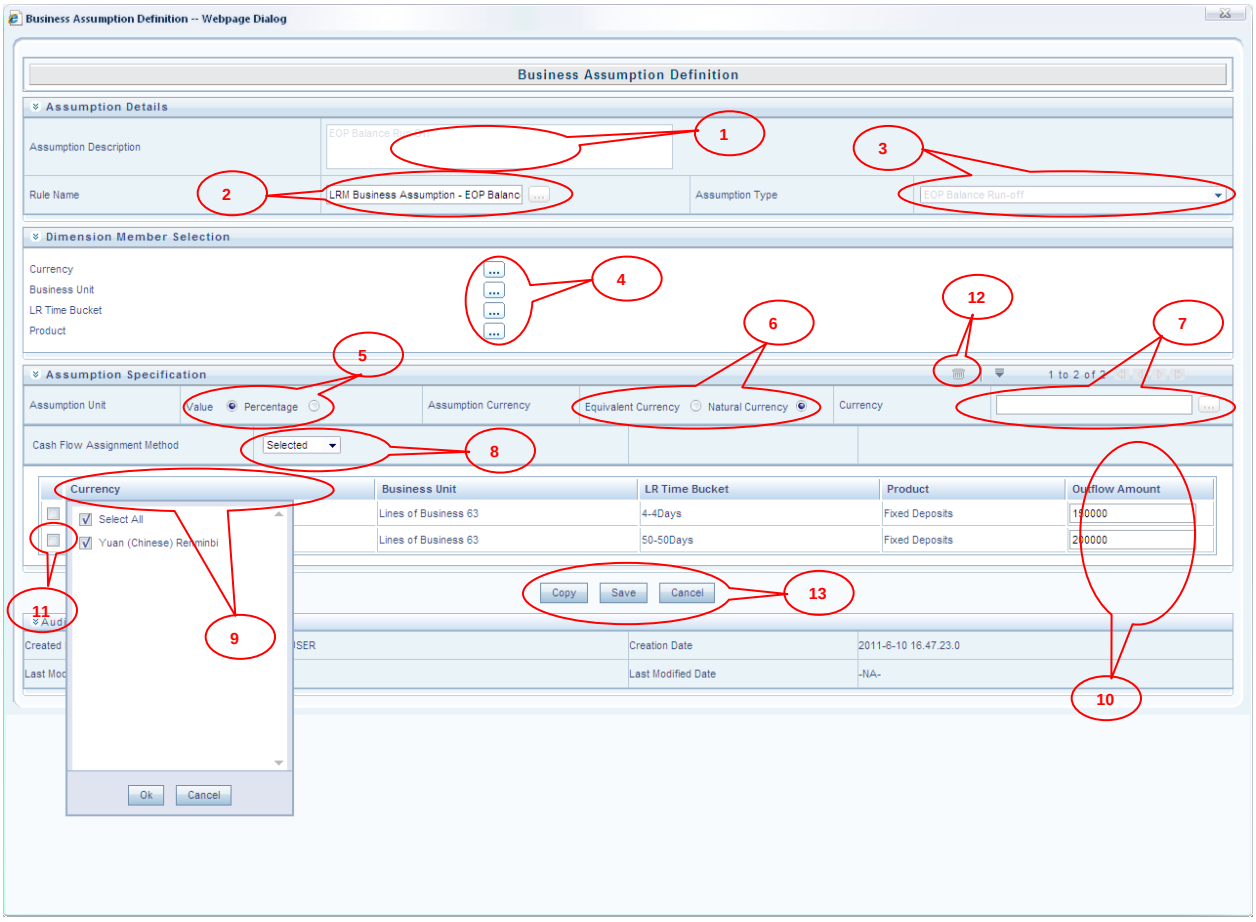


Figure 37: Business Assumption Add - EOP Balance Run-off

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
		the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency field. This Button allows you to define the Currency of the amount entered for the assumption.
8.	Cash flow Assignment Method	Use this link to select the Cash flow Assignment Method as **Decreasing**, **Equally**, **Proportional** or **Selected**.
9.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
10.	Assumption Value	This section allows you to enter the Assumption Amount.
11.	Select Check Box	If you click this button then the corresponding assumption row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Copy	This button allows you to copy the assumption and save as new mapping.
	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 36: Business Assumption Add - EOP Balance Run-off

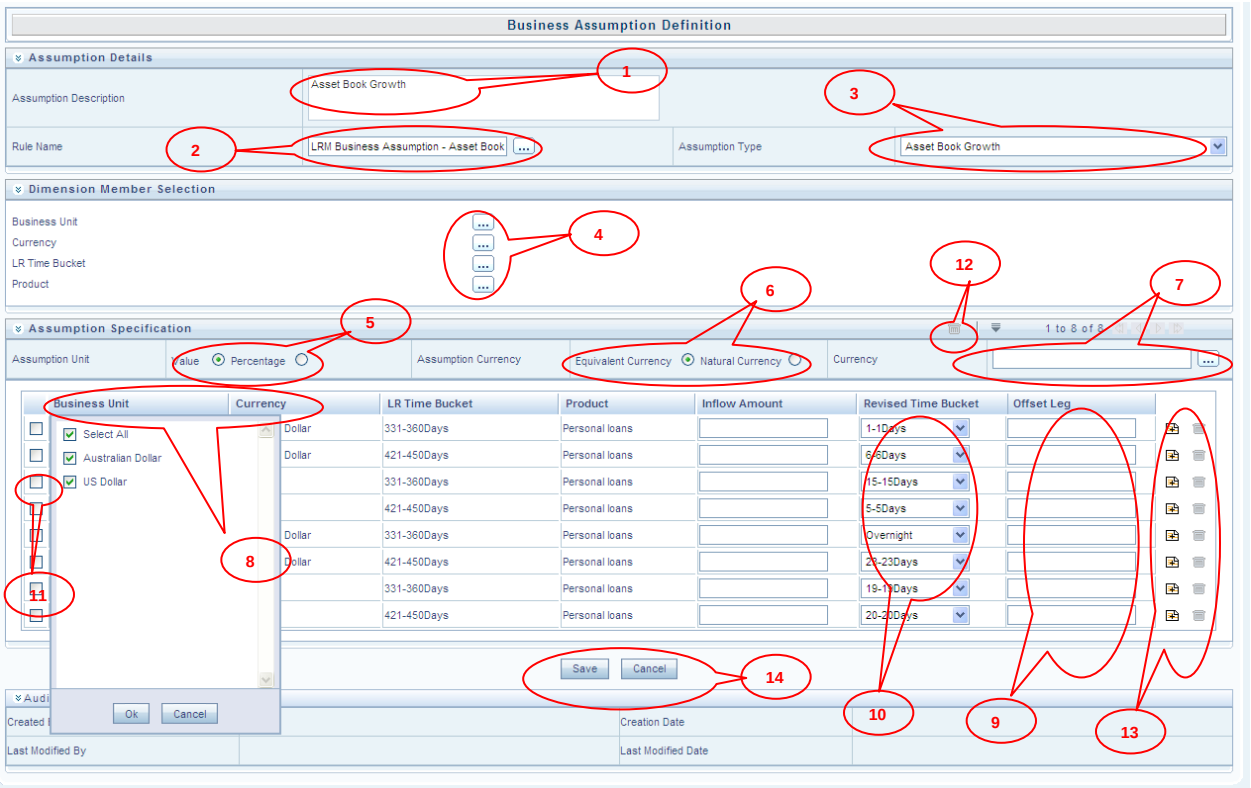


Figure 38: Business Assumption Add - Asset Book Growth

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have the Rule and Assumption Type, all the Dimensions which are available in the Rule will be displayed in this section. Each dimension will appear with its selection button which allows you to select the nodes of dimension member which will participate in defining the Assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in the assumption unit. Equivalent Currency is to be selected if you want to give value of the assumption as the common currency. Natural Currency is to be selected if you want to give the values of the assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected as the Assumption Currency. This button allows you to define the Currency of the amount entered for assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Revised Time Bucket	You can select the Revised Time bucket from this dropdown. Revised Time buckets in the dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
11.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the Add button to insert one or more rows for the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete row of the same combination.
14.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 37: Business Assumption Add - Asset Book Growth

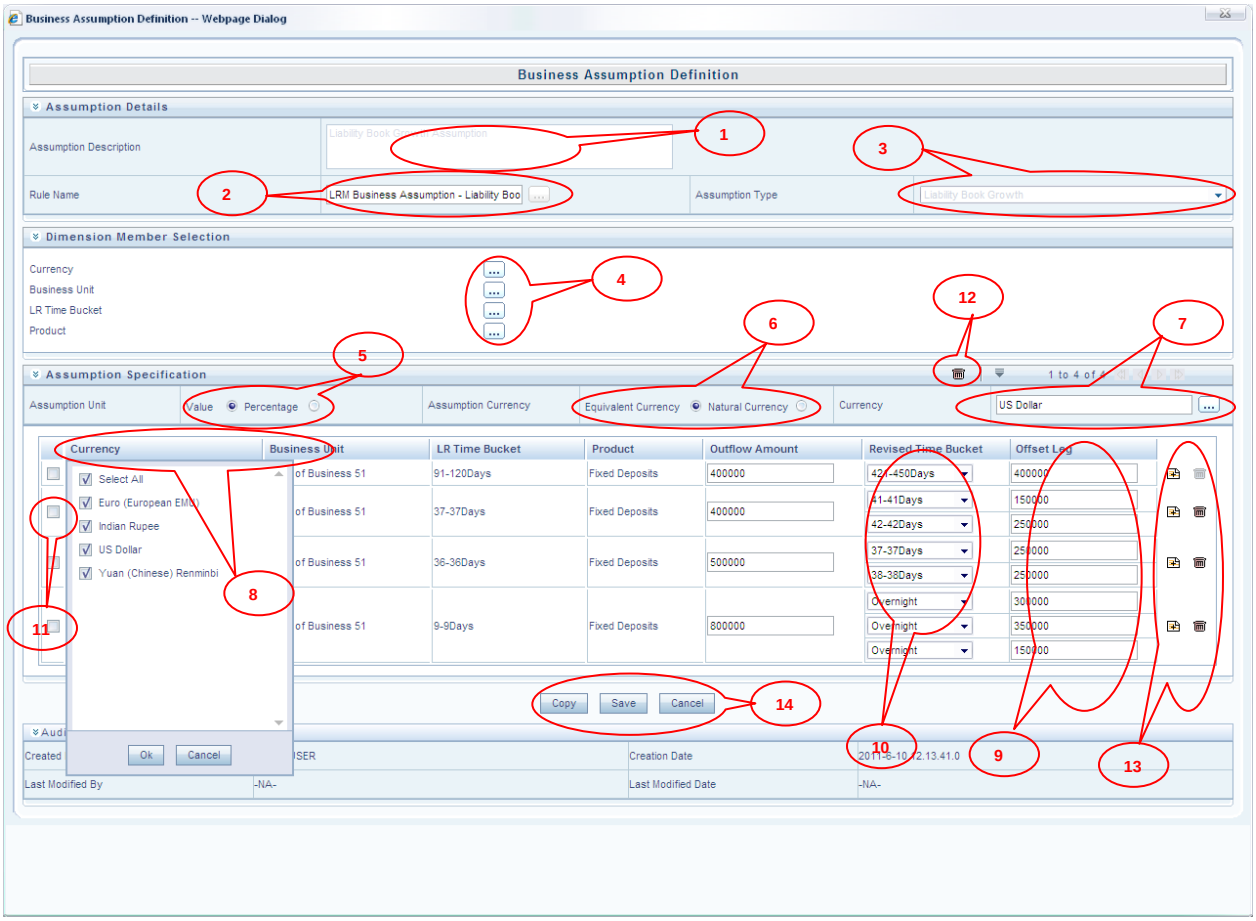


Figure 39: Business Assumption Add - Liability Book Growth

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the assumption description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption which you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of the dimension member which will participate in defining the Assumption. By clicking the button the respective **Dimension Member Selection** browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the assumption as the common currency. Natural

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
		Currency is to be selected if you want to give the values of the assumption in the natural currency of the record.
7.	Currency	This button will be activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to provide the Currency of the amount entered for Assumptions.
8.	Filter	For each dimensions of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Revised Time Bucket	You can select the Revised Time bucket from this dropdown. Revised Time bucket in the dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
11.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
12.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
13.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the Add button to insert one more rows at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button.
14.	Copy	This button allows you to copy the assumption and save as new mapping.
	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 38: Business Assumption Add - Liability Book Growth

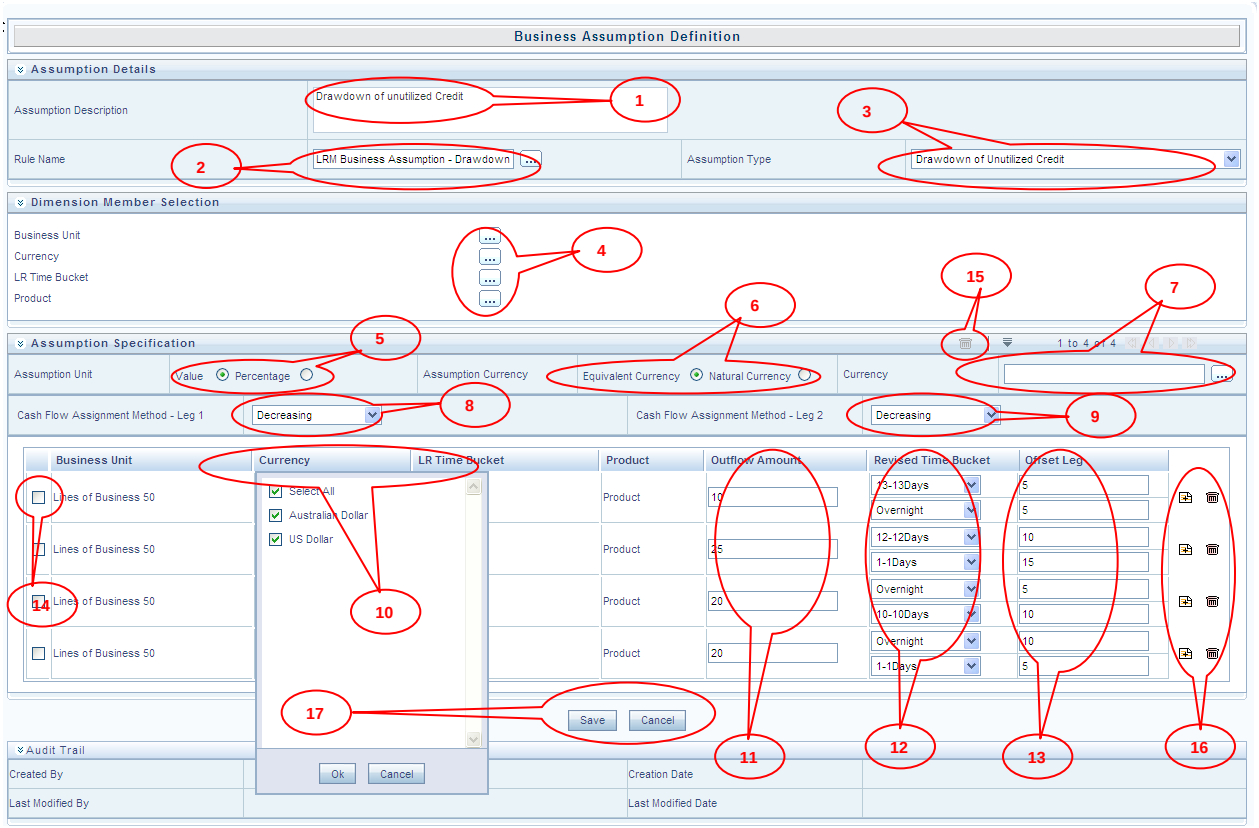


Figure 40: Business Assumption Add - Drawdown of Unutilized Credit

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	Once you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption in the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
		allows you to provide the Currency of the amount entered for Assumptions.
8.	Cash flow Assignment Method – Leg 1	Use this link to select the Cash flow Assignment Method as **Decreasing**, **Equally**, **Proportional** or **Selected**.
9.	Cash flow Assignment Method – Leg 2	Use this link to select the Cash flow Assignment Method as **Decreasing**, **Equally**, **Proportional** or **Selected**.
10.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
11.	Assumption Value for Leg 1	This section allows you to enter the Assumption Amount for Leg 1.
12.	Revised Time Bucket	You can select the Revised Time bucket from this Dropdown. Revised Time buckets in the Dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
13.	Assumption Value for Leg 2	This section allows you to enter the Assumption Amount for Leg 2.
14.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
15.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
16.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the Add button to insert one more rows for the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete row at the same combination.
17.	Copy	This button allows you to copy the Assumption and save as new mapping.
	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 39: Business Assumption Add - Drawdown of Unutilized Credit

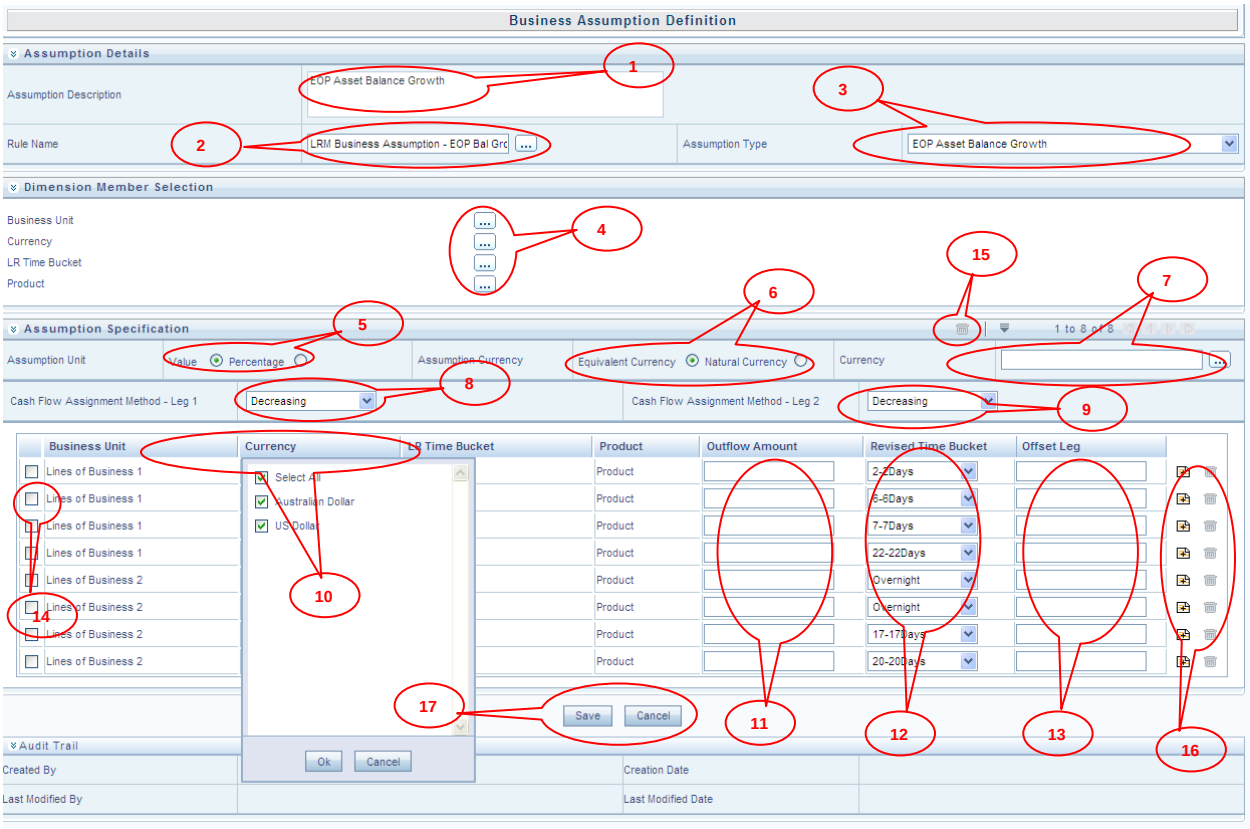


Figure 41: Business Assumption Add - EOP Asset Balance Growth

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its own selection button which allows you to select the nodes of the dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption in the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency field. This button allows you to provide the Currency of the amount entered for Assumptions.
8.	Cash flow Assignment Method – Leg 1	Use this link to select the Cash flow Assignment Method as **Decreasing, Equally, Proportional** or **Selected**.
9.	Cash flow Assignment Method – Leg 2	Use this link to select the Cash flow Assignment Method as **Decreasing, Equally, Proportional** or **Selected**.
10.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
11.	Assumption Value for Leg 1	This section allows you to enter the Assumption Amount for Leg 1.
12.	Revised Time Bucket	You can select the Revised Time bucket from this dropdown. Revised Time buckets in the dropdown will be at the same level at which the Time Bucket Hierarchy is created.
13.	Assumption Value for Leg 2	This section allows you to enter the Assumption Amount for Leg 2.
14.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
15.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
16.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the Add button to insert one more row at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete the row at the same combination.
17.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 40: Business Assumption Add - EOP Asset Balance Growth

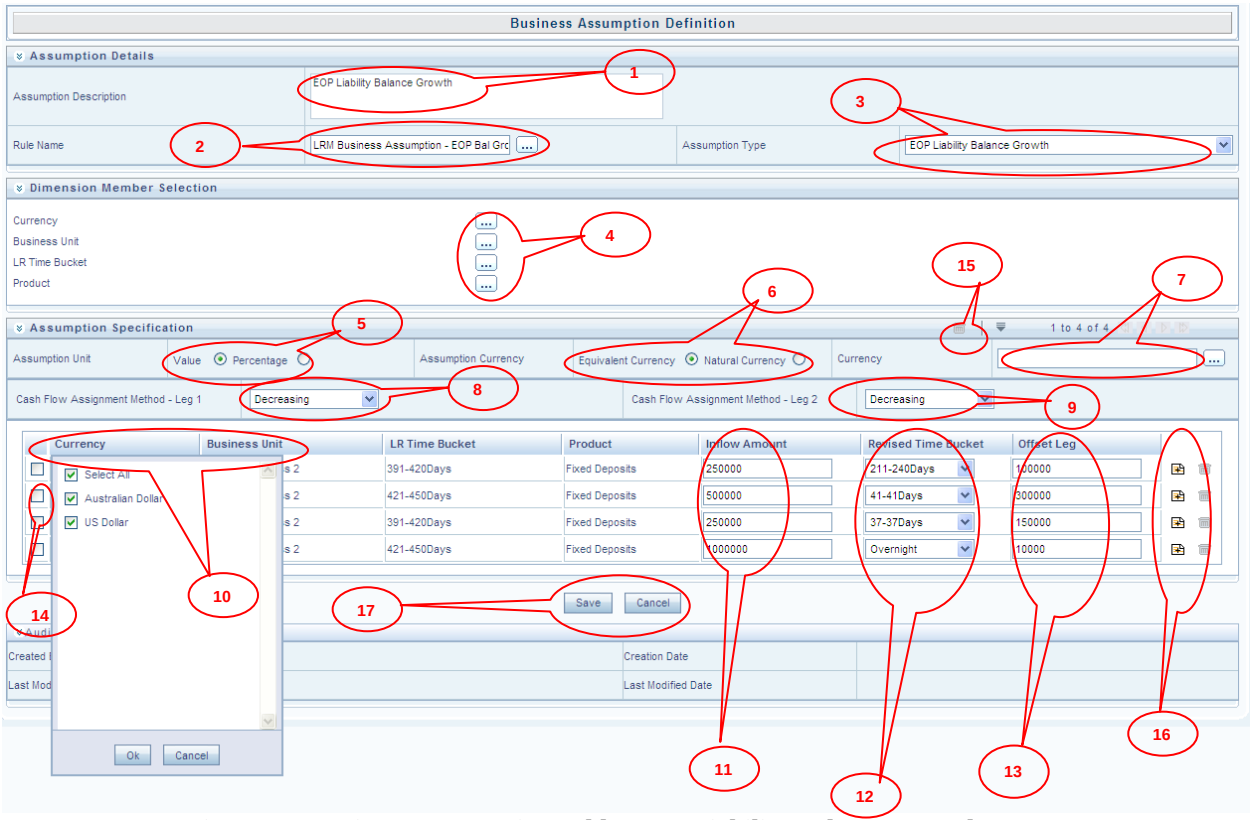


Figure 42: Business Assumption Add - EOP Liability Balance Growth Screen

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption which you are defining.
3.	Assumption Type	This dropdown allows you to select the type of Assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of dimension member which will participate in defining the Assumption. By clicking this button the respective **Dimension Member Selection** Browser will popup.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption in the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to provide the Currency of the amount entered for Assumptions.
8.	Cash flow Assignment Method – Leg 1	Use this link to select the Cash flow Assignment Method as **Decreasing, Equally, Proportional** or **Selected**
9.	Cash flow Assignment Method – Leg 2	Use this link to select the Cash flow Assignment Method as **Decreasing, Equally, Proportional** or **Selected.**
10.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
11.	Assumption Value for Leg 1	This section allows you to enter the Assumption Amount for Leg 1.
12.	Revised Time Bucket	You can select the Revised Time bucket from this dropdown. Revised Time buckets in the dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
13.	Assumption Value for Leg 2	This section allows you to enter the Assumption Amount for Leg 2.
14.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
15.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
16.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the Add button to insert an additional row at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete row at the same combination.
17.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 41: Business Assumption Add - EOP Liability Balance Growth

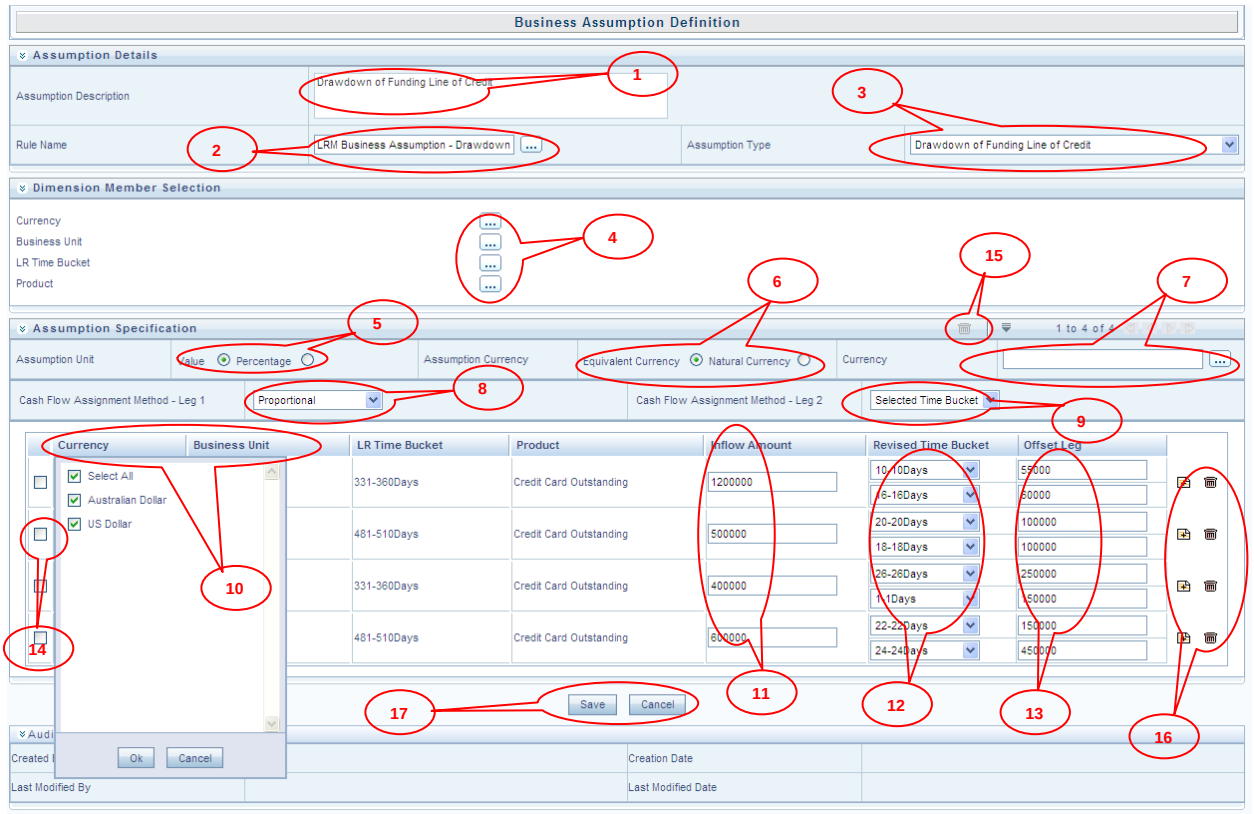


Figure 43: Business Assumption Add - Drawdown of Funding Line of Credit

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the Assumption you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of the dimension member which participates in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option to specify the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption in the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of the record.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to provide the Currency of the amount entered of the Assumption.
8.	Cash flow Assignment Method – Leg 1	Use this link to select the Cash flow Assignment Method as **Decreasing**, **Equally**, **Proportional** or **Selected.**
9.	Cash flow Assignment Method – Leg 2	Use this link to select the Cash flow Assignment Method as **Decreasing**, **Equally**, **Proportional** or **Selected.**
10.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
11.	Assumption Value for Leg 1	This section allows you to enter the Assumption Amount for Leg 1.
12.	Revised Time Bucket	You can select the Revised Time bucket from this dropdown. Revised Time buckets in the dropdown will be at the same level at which the Time Bucket Hierarchy has been created.
13.	Assumption Value for Leg 2	This section allows you to enter the Assumption Amount for Leg 2.
14.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
15.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
16.	Add	If an additional amount for one more bucket for the same combination is to be added then you can click the Add button to insert an additional row at the same combination.
	Delete	If you want to delete the row added for the same combination then you can click the Delete button to Delete row at the same combination.
17.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 42: Business Assumption Add - Drawdown of Funding Line of Credit

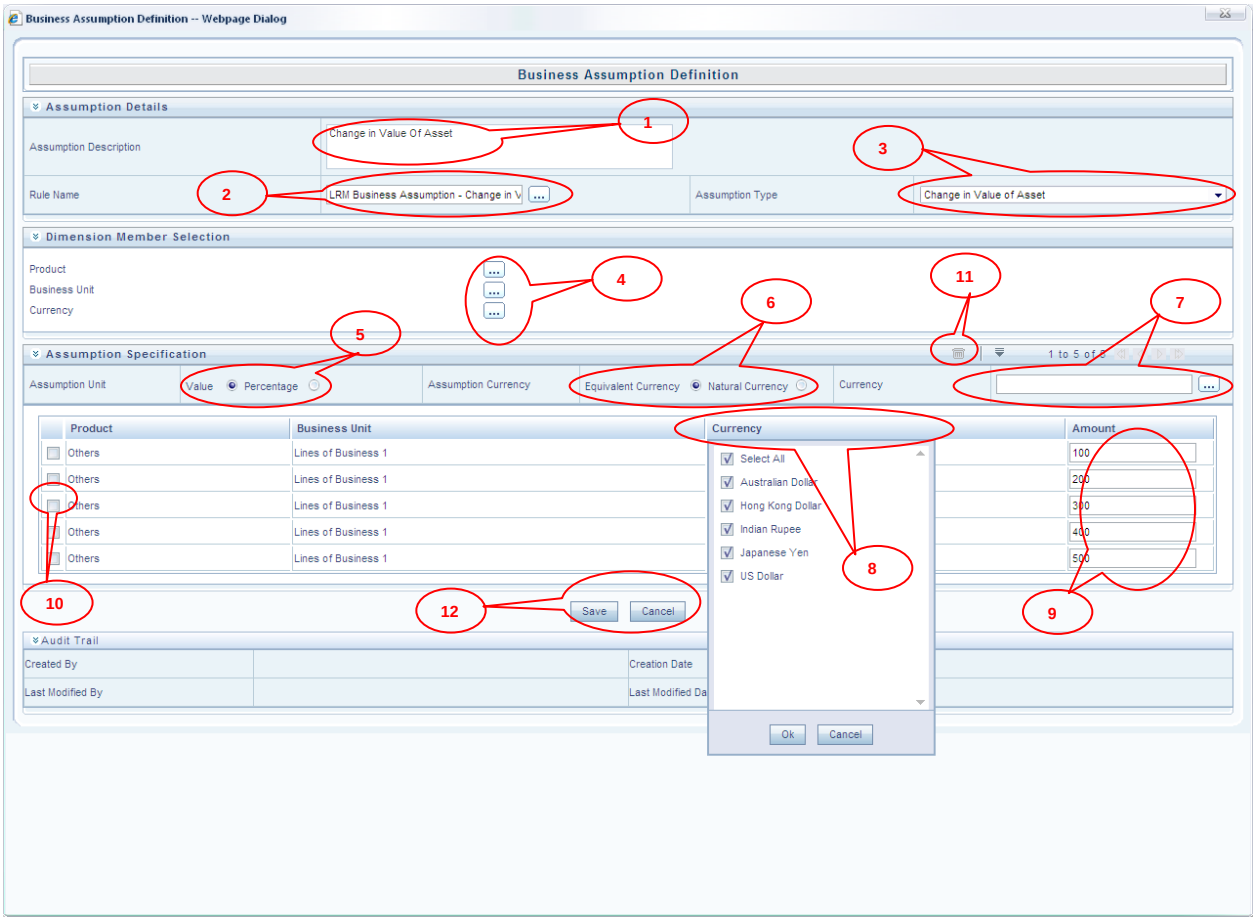


Figure 44: Business Assumption Add - Change in Value of Asset

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption you are defining.
3.	Assumption Type	This dropdown allows you to select the type of Assumption.
4.	Dimension Member Selection	If you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension will appear with its selection button which allows you to select the nodes of dimension member which will participate in defining the Assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the Value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption in the common currency. Natural Currency is to be selected if you want to give the values of the Assumption in the natural currency of

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
		the record.
7.	Currency	This button will be activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to define the Currency of the amount entered for Assumptions.
8.	Filter	For each dimensions of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12.	Save	This button allows you to save the defined assumption.
	Cancel	This button allows you to discard all changes made.

Table 43: Business Assumption Add - Change in Value of Asset

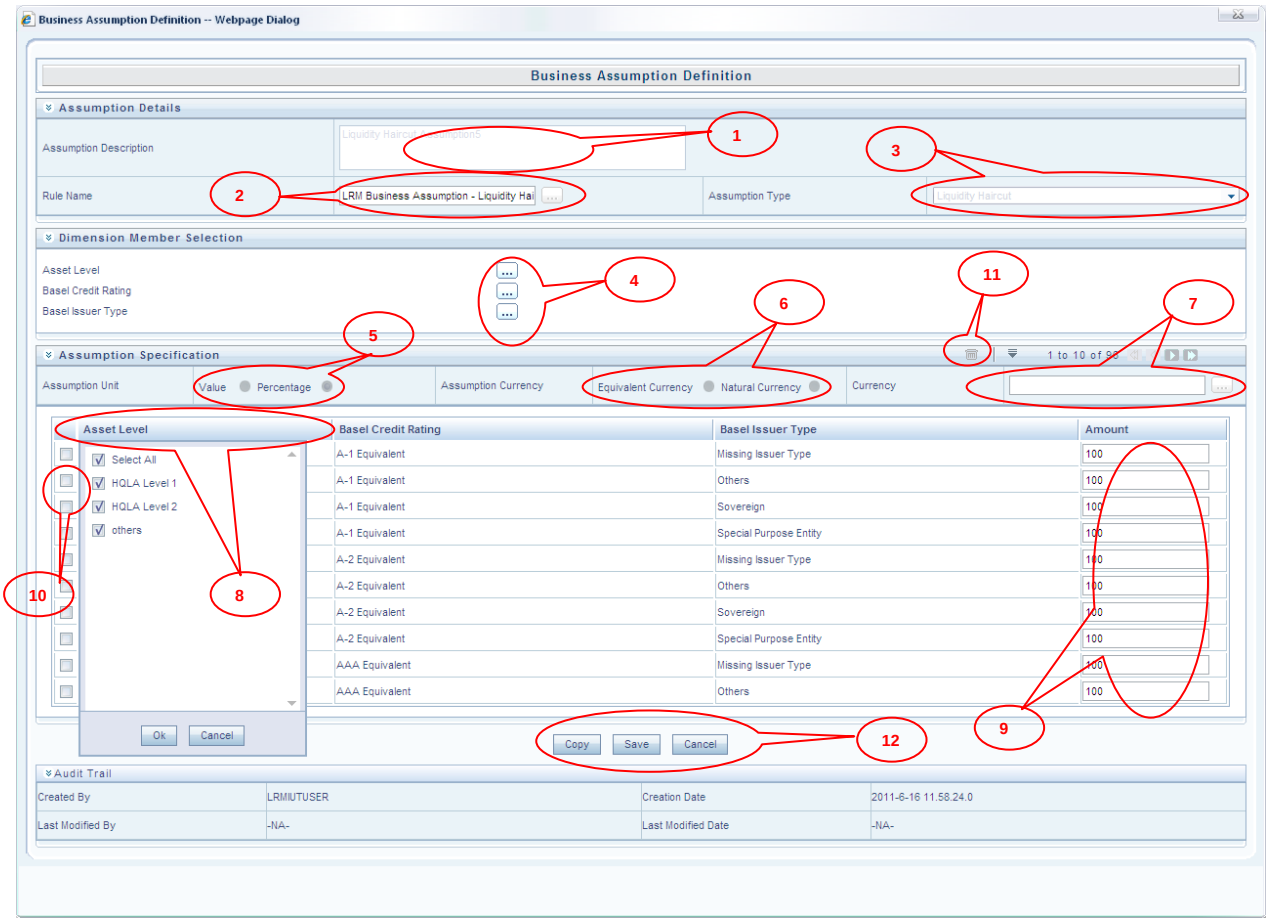


Figure 45: Business Assumption Add - Liquidity Haircut

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**

Screen Description	Business Assumption Definition Screen allows you to define new Assumption in Liquidity Risk Management Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the assumption you are defining.
3.	Assumption Type	This dropdown allows you to select the type of assumption.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of the dimension member which will participate in defining the Assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option to specify the assumption in percentage or value.
6.	Assumption Currency	This button is enabled if you have selected the value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the Assumption as the common currency. Natural Currency is to be selected if want to give the values of the Assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to provide the Currency of the amount entered.
8.	Filter	For each dimensions of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This button deletes all the records from the Grid where **Select Check Box** button is selected.
12.	Copy	This button allows you to copy the assumption and save as new mapping.
	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 44: Business Assumption Add - Liquidity Haircut

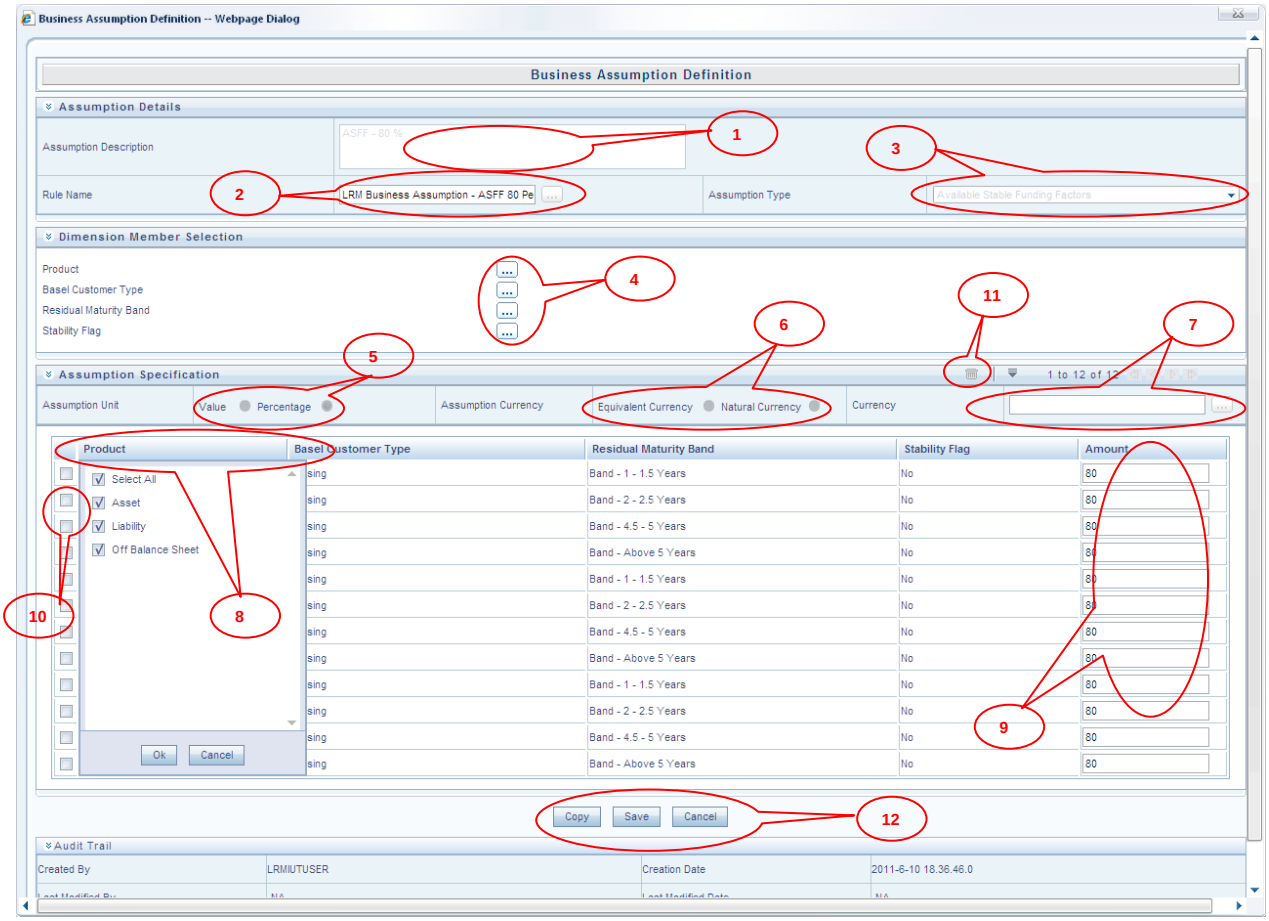


Figure 46: Business Assumption Add - Available Stable Funding Factors

Screen Description	Business Assumption Definition Screen allows you to define a new assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the Assumption which you are defining.
3.	Assumption Type	This dropdown allows you to select the type of Assumption you want to define.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in Percentage or Value.
6.	Assumption Currency	This button is enabled if you have selected the value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the assumption as the common currency. Natural Currency is to be selected if you want to give the values of the assumption in the natural currency of

Screen Description	Business Assumption Definition Screen allows you to define a new assumption in the LRM Application.	
Reference number	**Tag**	**Description**
		the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to define the Currency of the amount entered for assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9.	Assumption Value	This section allows you to enter the Assumption Amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Delete row	This button will delete all the records from the Grid where **Select Check Box** button is selected.
12.	Copy	This button allows you to copy the assumption and save as new mapping.
	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 45: Business Assumption Add - Available Stable Funding Factors

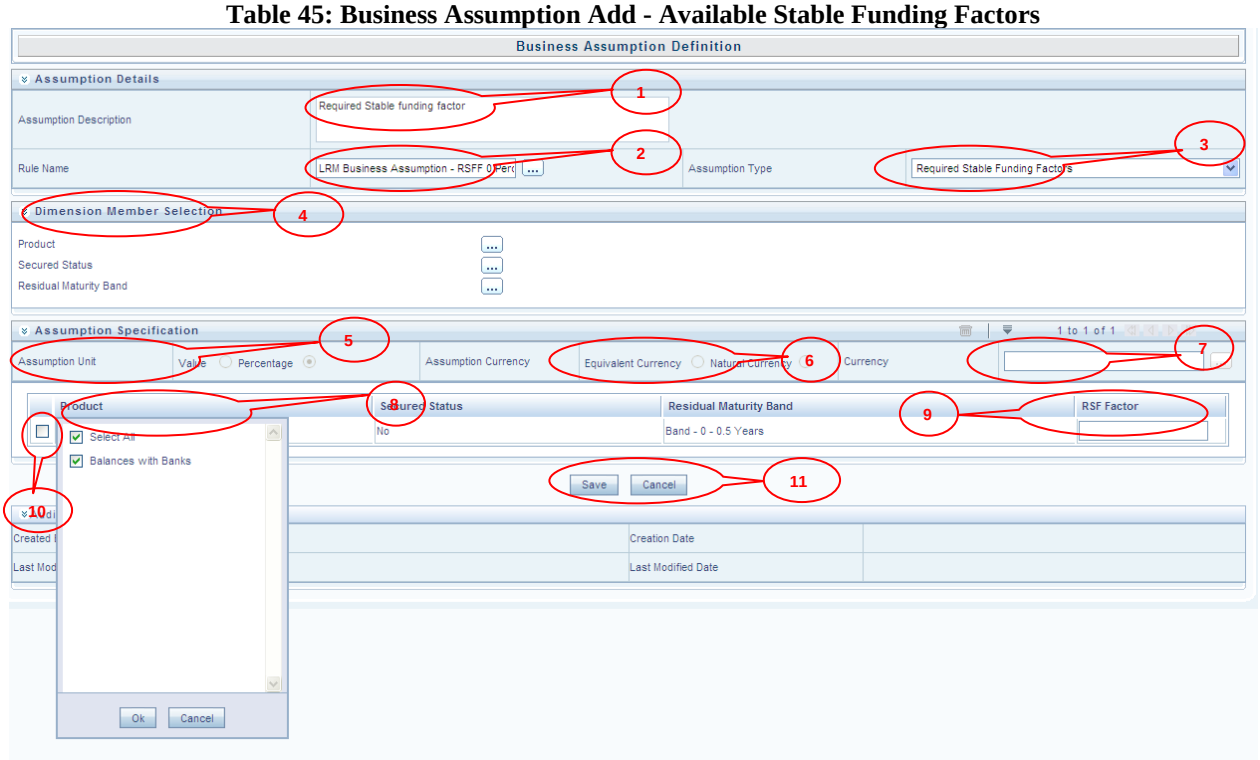


Figure 47: Business Assumption Add-Required Stable Funding Factor

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Assumption Description	This text box allows you to specify the Assumption Description.
2.	Rule Name	This button allows you to select the pre-defined Rule which is associated with the Assumption which you are defining.

Screen Description	Business Assumption Definition Screen allows you to define a new Assumption in the LRM Application.	
Reference number	**Tag**	**Description**
3.	Assumption Type	This dropdown allows you to select the type of Assumption you want to define.
4.	Dimension Member Selection	When you have selected the Rule and Assumption Type, all the dimensions which are available in the Rule is displayed in this section. Each dimension appears with its selection button which allows you to select the nodes of dimension member which will participate in defining the assumption. By clicking the button the respective **Dimension Member Selection** Browser pops up.
5.	Assumption Unit	This button gives you the option of specifying the assumption in Percentage or Value.
6.	Assumption Currency	This button is enabled if you have selected the value as the option in Assumption Unit. Equivalent Currency is to be selected if you want to give value of the assumption as the common currency. Natural Currency is to be selected if you want to give the values of the assumption in the natural currency of the record.
7.	Currency	This button is activated if Equivalent Currency is selected in the Assumption Currency. This button allows you to define the Currency of the amount entered for assumptions.
8.	Filter	For each dimension of the rule, Filter is provided for ease of defining the Assumption.
9.	RSF Factor	This section allows you to enter the RSF factor amount.
10.	Select Check Box	If you click this button then the corresponding Assumption Row is selected.
11.	Save	This button allows you to save the defined Assumption.
	Cancel	This button allows you to discard all changes made.

Table 46: Business Assumption Add- Required Stable Funding Factor

Executing Runs

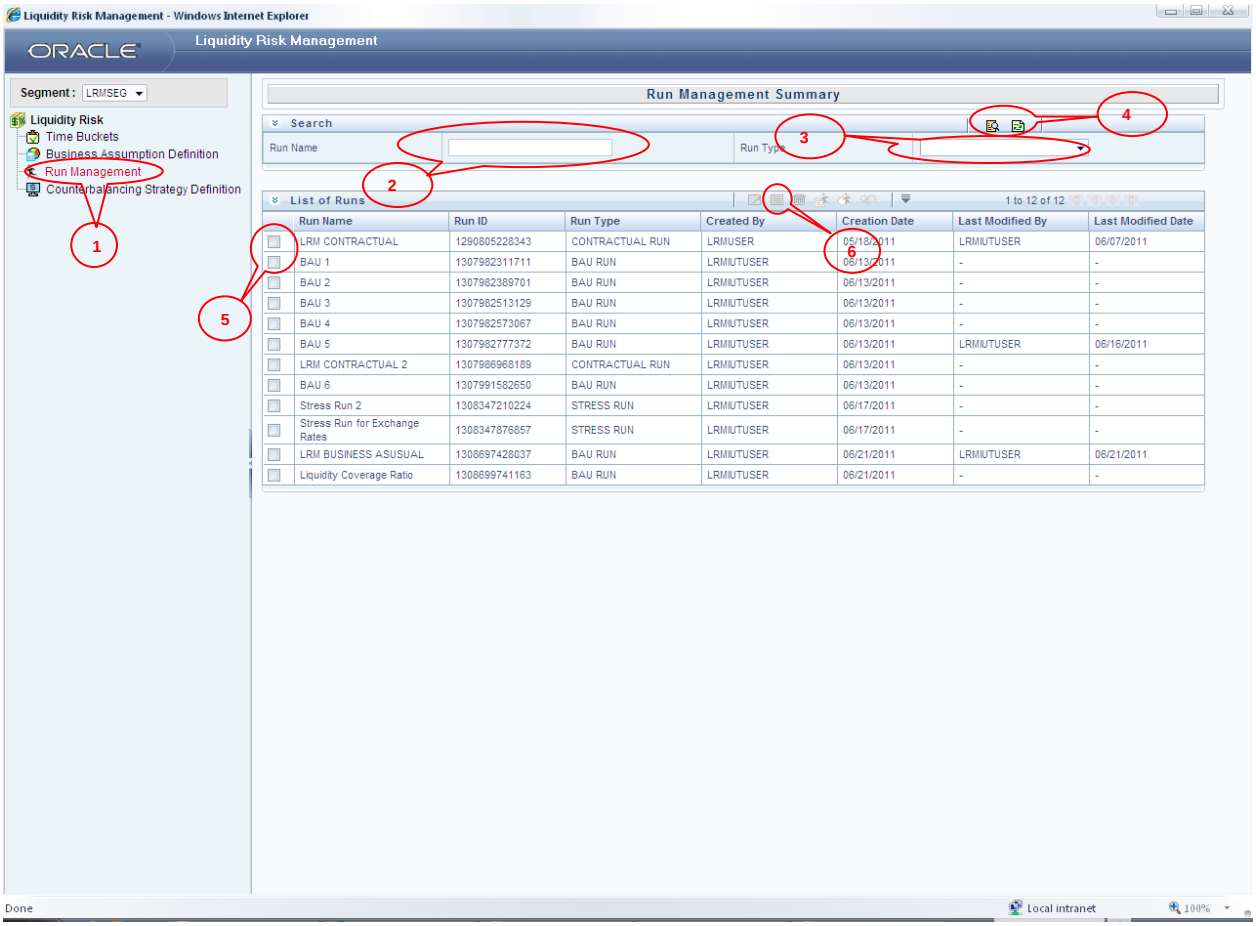


Figure 48: Run Management Summary

Screen Description	Run Management Screen allows you to define or execute the Run in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Run Management	Click this link to define/edit/ execute the run in the LRM Application.
2.	Run Name	This section allows you to search the pre-defined Run on the basis of the Run name. You need to specify the Run Name here for searching the pre defined Run.
3.	Run Type	This section allows you to search the pre-defined Run on the basis of Run Type. You need to specify the Run Type here for searching pre-defined Run.
4.	Search	This link allows you to search the Run on the basis of the given data of Run Name, Consolidation Type or Run Type.
	Reset	This link allows you to reset the screen to its default state where all the Runs are displayed.
5.	Select Check Box	If you click this button then the corresponding Run is selected.
6.	View	After selecting the Run using **Select Check Box** you can click the view button to view the Assumption rules used in the Run
	Run Parameter Selection	After selecting the Run using **Select Check Box** you can click the **Run Parameter Selection** button

Screen Description	Run Management Screen allows you to define or execute the Run in the LRM Application.	
Reference number	**Tag**	**Description**
		to give default parameter to the Run
	Run Execution Parameter Selection	After selecting the Run using **Select Check Box** you can click the **Run Execution Parameter Selection** button to give default parameter to the Run
	Run Execution Summary	After selecting the Run using **Select Check Box** you can click the Run Execution Summary button to view the Run Execution Details.

Table 47: Run Management Summary

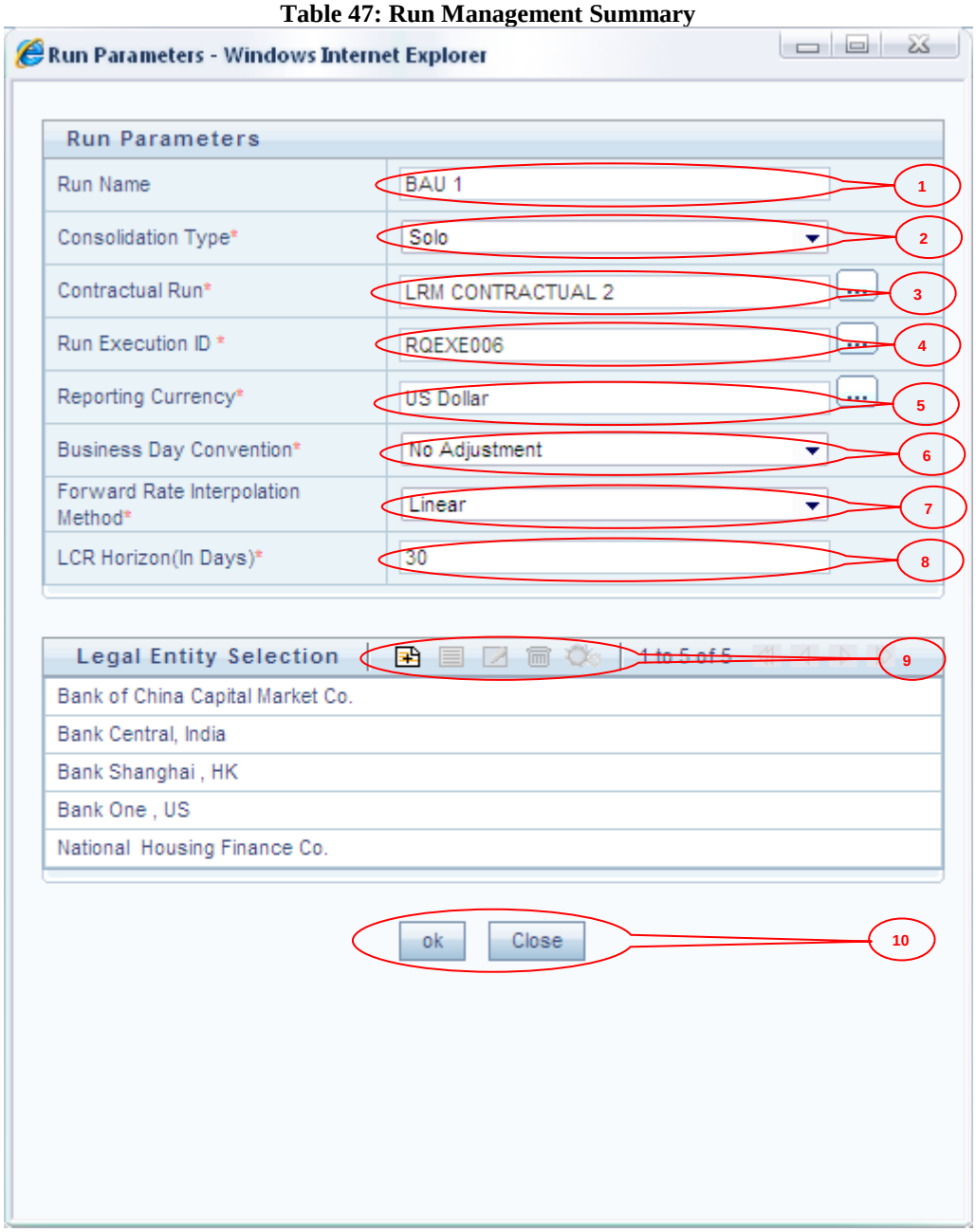


Figure 49: Business as Usual Run Parameters Selection

Screen Description	Run Management Screen allows you to define/execute the Run in the LRM Application.	
Reference number	**Tag**	**Description**

Screen Description	Run Management Screen allows you to define/execute the Run in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Run Name	This is an un-editable field where Run name will be displayed
2.	Consolidation Type	Select Consolidation Type as Solo or Consolidated
3.	Contractual Run	Select Contractual Run over which Business as Usual (BAU) Run is executed.
4.	Run Execution ID	There can be multiple runs for the Contractual Run selected. You need to select one of the Run Execution IDs of the Contractual Run selected.
5.	Reporting Currency	Provide the reporting Currency by clicking the **Reporting Currency Select** button which will display the Reporting Currency Browser where all the currencies are displayed and you can select any one of them as Reporting Currency.
6.	Business Day Convention	Select one of the Business Day Conventions. Business day Convention is used for Time Bucketing. The Business Day Conventions supported are as follows: No Adjustment, Prior, Following, Conditional Prior or Conditional Following
7.	Forward Rate Interpolation Method	Select the interpolation method to be applied while using Forward Exchange Rate.
8.	LCR Horizon (In Days)	Provide the LCR Horizon in days. LCR Horizon also known as Liquidity Horizon is used for calculating the Liquidity Coverage Ratios as prescribed in the Basel III guidelines.
9.	Legal Entity Selection	Select the set of Legal Entities over which the Run is to be executed. Legal Entity Selection depends on Consolidation type selected. If you have selected Solo Run then you will have to manually select all the Legal Entities over which you execute the run. If you select Consolidated then you are allowed to select only Parent Node and all the legal entities which are coming under parent node will automatically be selected for execution.
10.	OK	Click **OK** button to save the Parameters given.
	Close	Click Close button to close the parameter screen.

Table 48: Business as Usual Run Parameters Selection

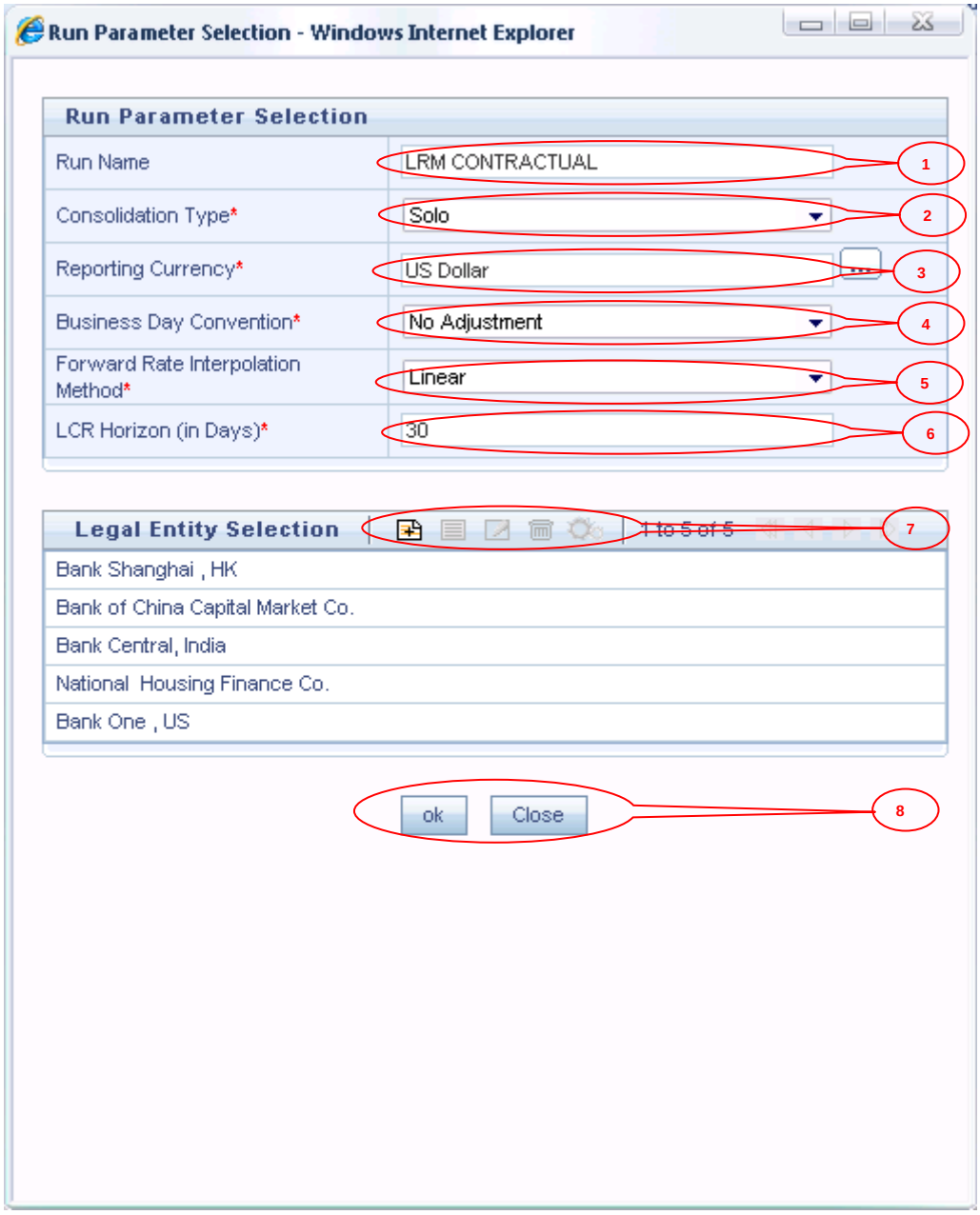


Figure 50: Contractual Run Parameters Selection

Screen Description	Run Management Screen allows you to define/execute the Run in the LRM Application.	
Reference number	**Tag**	**Description**
1.	Run Name	This is an un-editable field where the Run name will be displayed
2.	Consolidation Type	Select the Consolidation Type as Solo or Consolidated
3.	Reporting Currency	You will have to provide the Reporting Currency by clicking the **Reporting Currency** button. **Reporting Currency Browser** where all the currencies will be displayed and you can select any one of the currencies displayed as the Reporting Currency.

Screen Description	Run Management Screen allows you to define/execute the Run in the LRM Application.	
Reference number	**Tag**	**Description**
4.	Business Day Convention	Select one of the Business Day Conventions. Business Day Convention is used for Time Bucketing. Following are the Business Day Conventions supported: **No Adjustment, Prior, Following, Conditional Prior** or **Conditional Following**
5.	Forward Rate Interpolation Method	Select the interpolation method to be applied while using Forward Exchange Rate.
6.	LCR Horizon (In Days)	Provide the LCR Horizon in days. LCR Horizon also known as Liquidity Horizon is used for calculating the Liquidity Coverage Ratios as mentioned by the regulators.
7.	Legal Entity Selection	Select the set of Legal Entities for executing the run. Legal Entity Selection depends on the Consolidation type selected by you. If you select Solo Run then you will have to manually select all the Legal Entities over which you want to execute the run. If you select Consolidated then you are allowed to select only Parent Node and all the legal entities which are coming under parent node will automatically be selected for execution.
8.	OK	Click OK button to save the Parameters given.
	Close	Click Close button to close the parameter screen.

Table 49: Contractual Run Parameters Selection

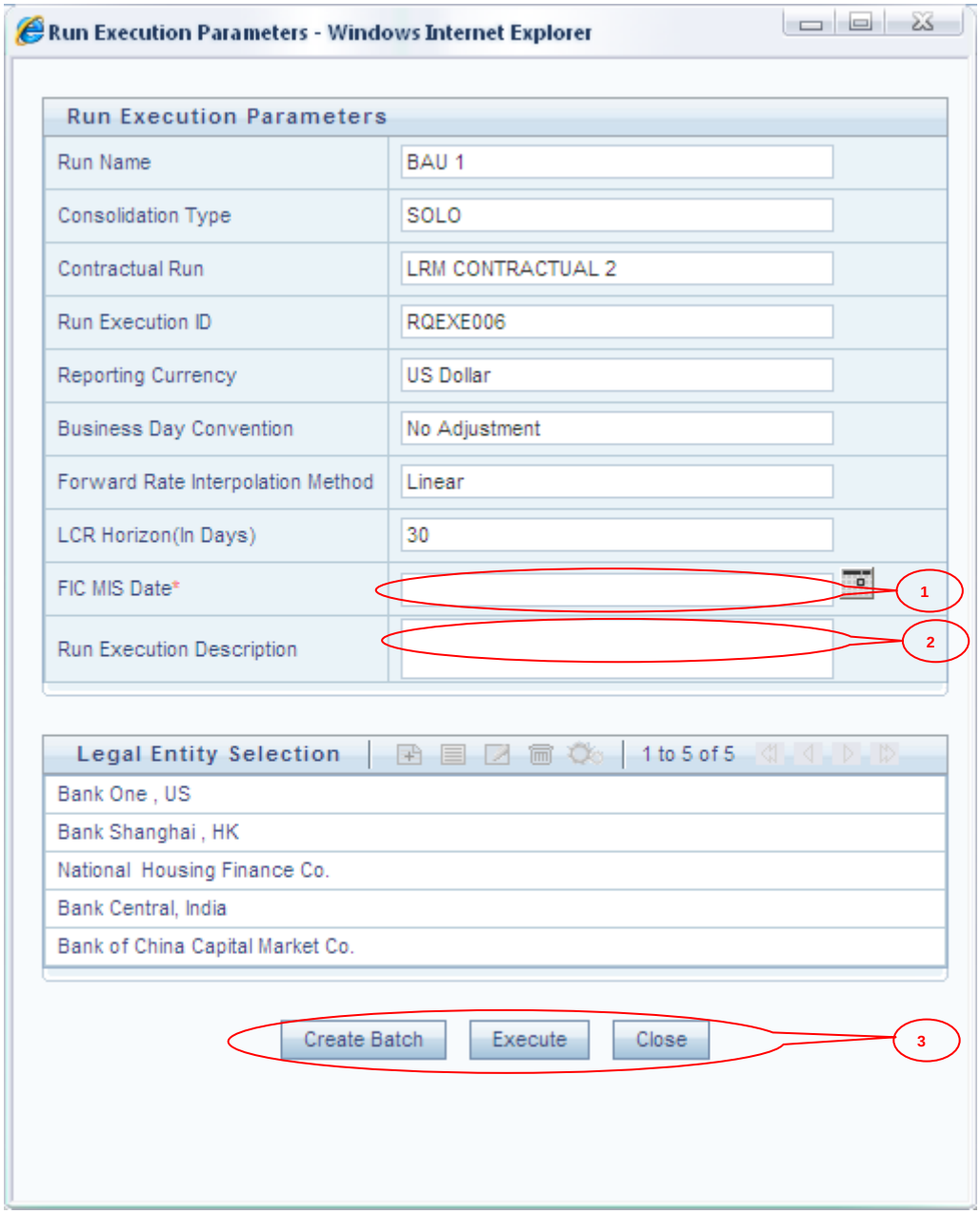


Figure 51: Run Execution Parameters Selection

Screen Description	Run Management Screen allows you to define or execute the Run in the LRM Application.	
Reference number	**Tag**	**Description**
1.	FIC MIS Date	Select the Execution date in the given field.
2.	Run Execution Description	Provide the Run Execution Description, as an optional entry.
3.	Create Batch	Create a batch for the run and schedule the execution of the batch to some later date in the future.
	Execute	Execute button will immediately execute the run
	Close	Click **Close** button to close the parameter screen.

Table 50: Run Execution Parameters Selection

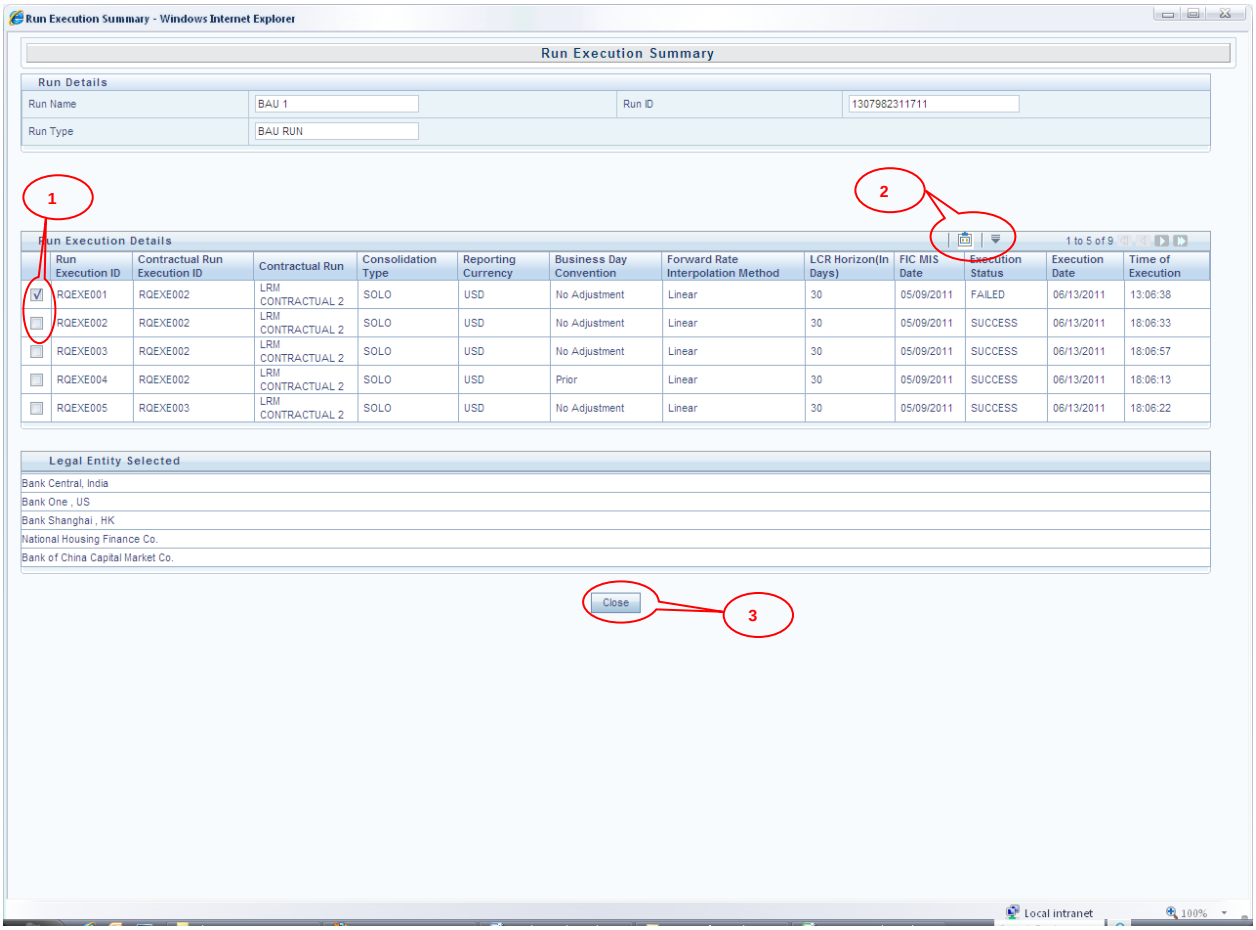


Figure 52: Run Execution Summary

Screen Description	Run Execution Summary Screen shows the Execution History of the selected Run.	
Reference number	**Tag**	**Description**
1.	Select Check Box	If you click this button then the corresponding Execution Row is selected.
2.	Legal Entity View	Once you select the Execution using **Select Check Box** click Legal Entity View button to view all the Legal Entities used in the Execution.
3.	Close	Click this button to close Run Execution Summary.

Table 51: Run Execution Summary

Defining and Applying Counterbalancing Strategy

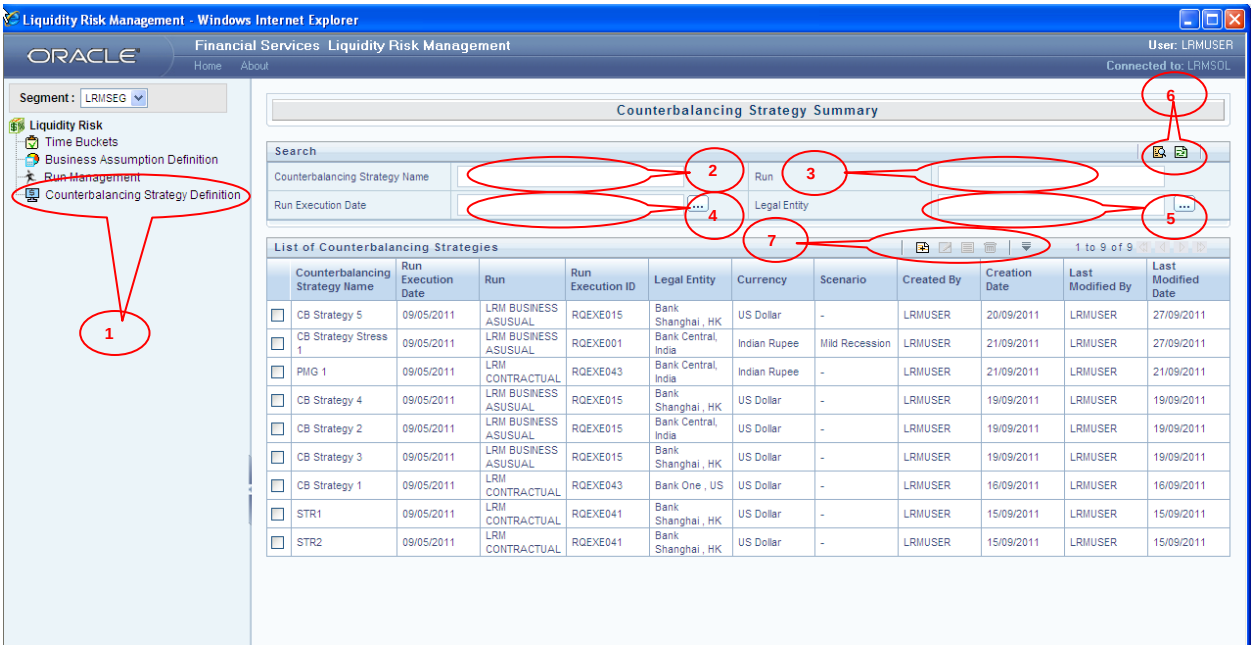


Figure 53: Counterbalancing Strategy Summary

Screen Description	Counterbalancing Summary Screen allows you to define/execute a Counterbalancing Strategy in the LRM Application.	
Reference number	**Tag**	**Description**
1	Counterbalancing Strategy Definition	By clicking this link you can define/edit/ execute the Counterbalancing Strategy in the LRM Application.
2	Counterbalancing Strategy Name	This section allows you to search the pre-defined Counterbalancing Strategy on the basis of the Counterbalancing Strategy. Specify the Counterbalancing Strategy Name to search for the pre-defined Counterbalancing Strategy.
3	Run	This section allows you to search the pre-defined Counterbalancing Strategy on the basis of the Run Name. Specify the Run Name here to search for the pre defined Counterbalancing Strategy.
4	FIC MIS Date/Run Execution Date	This section allows you to search the pre-defined Counterbalancing Strategy on the basis of Execution Date. Specify the Execution Date here to search for the pre-defined Counterbalancing Strategy.
5	Legal Entity	This section allows you to search the pre-defined Counterbalancing Strategy on the basis of Legal Entity. Specify the Legal entity to search for the pre-defined Counterbalancing Strategy.
6	Search	This link allows you to search the Counterbalancing Strategy on the basis of Counterbalancing Strategy Name, Run Name, Execution Date or Legal Entity.
	Reset	This link allows you to reset the screen to its default state where all the Counterbalancing Strategies are displayed.
7	Add	This link allows you to define a new Counterbalancing Strategy.
	Edit	This link allows you to edit the selected

		Counterbalancing Strategy.
	View	This link allows you to view the selected Counterbalancing Strategy.
	Delete	This link allows you to delete the selected Counterbalancing Strategy.

Table 52: Counterbalancing Strategy Summary

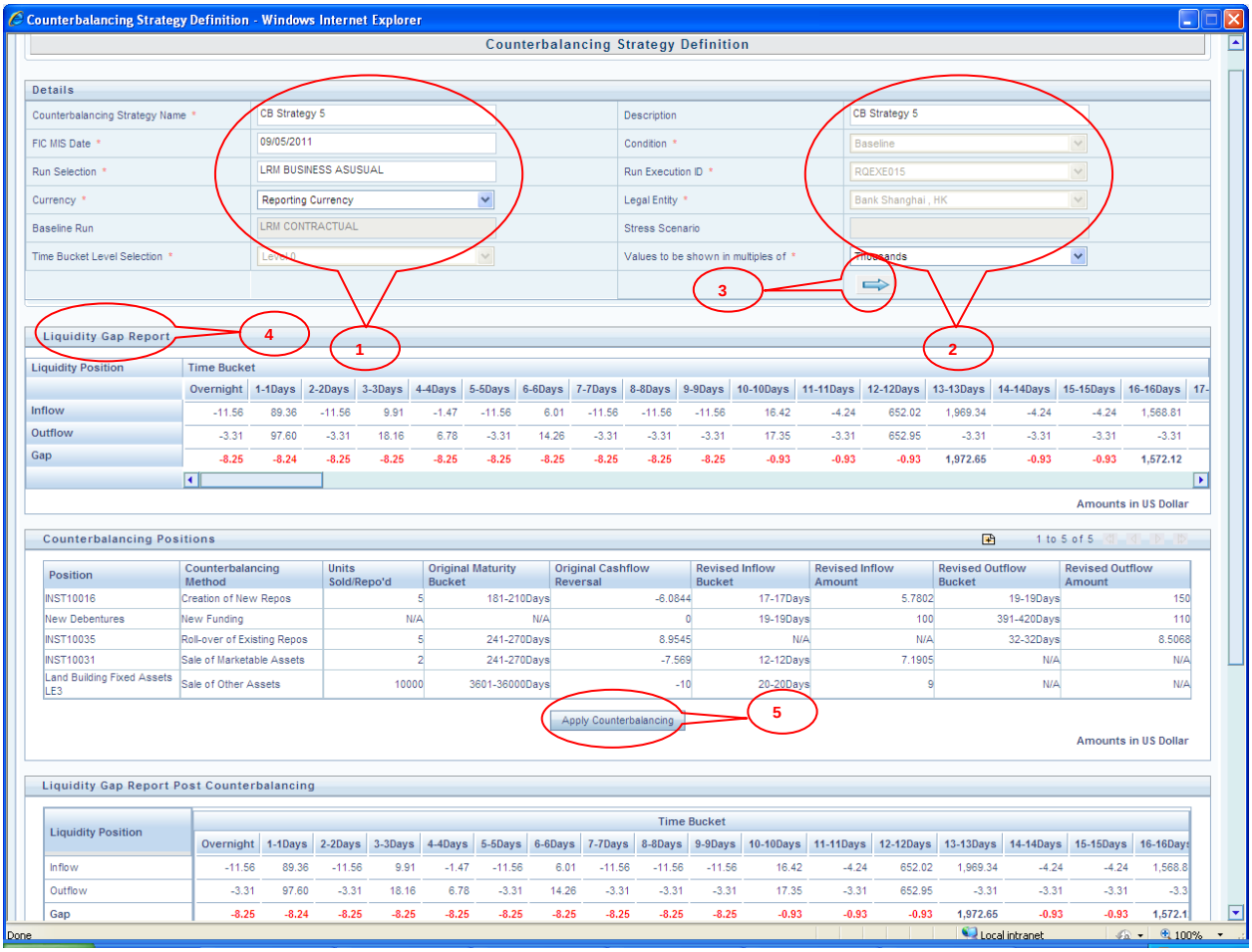


Figure 54: Counterbalancing Strategy Definition Screen 1

Screen Description	Counterbalancing Strategy Definition Screen allows you to define/Execute a new Counterbalancing Strategy.	
Reference number	**Tag**	**Description**
1	Counterbalancing Strategy Name	This section allows you to specify Counterbalancing Strategy Name.
	FIC MIS Date/ Execution Date	This button allows you to select the execution date of the Run over which the Counterbalancing Strategy needs to be executed,
	Run Selection	This button allows you to select the Run over which the Counterbalancing Strategy needs to be executed.
	Baseline Run	This button allows you to select the baseline Run over which the Counterbalancing Strategy needs to be executed. By clicking the selection button **Run Selection Browser** pops up which will allow you to select the Run.
	Currency	This dropdown allows you to select the **Reporting Currency** or **Local Currency** as an option. This will be executed on the selected Currency Type over the selected Run.

Screen Description	Counterbalancing Strategy Definition Screen allows you to define/Execute a new Counterbalancing Strategy.	
Reference number	**Tag**	**Description**
2	Description	This section allows you to specify the description of the Counterbalancing Strategy.
	Run Execution ID	This dropdown allows you to select the Run Execution ID of the selected Run over which Counterbalancing Strategy needs to be executed.
	Condition	This dropdown allows you to select the type of Run on which you want to apply the Counterbalancing Strategy. Options available in the dropdown are Baseline or Stress.
	Stress Scenario	If you have selected Stress run for executing the Counterbalancing Strategy then this dropdown allows you to select the Stress scenario over which Counterbalancing Strategy needs to be executed.
	Values to be shown in Multiples of	Click this dropdown to select to display the values in multiples of thousands, millions and billions
	Legal Entity	This dropdown allows you to select the Legal Entity over which the Counterbalancing Strategy needs to be executed.
3	Go	This button allows you to generate the Gap report of the selected Run before the Counterbalancing Strategy is applied.
4	Liquidity Gap Report	This section displays the Counterbalancing Gap Report of the selected Run. This grid is populated once you click **Go** Button.
5	Add Counterbalancing Position	This link will allow you to add a Counterbalancing Strategy. By clicking this link the Counterbalancing Position Add Screen is displayed where you can define the Counterbalancing Strategy to be applied.

Table 53: Counterbalancing Strategy Definition Screen 1

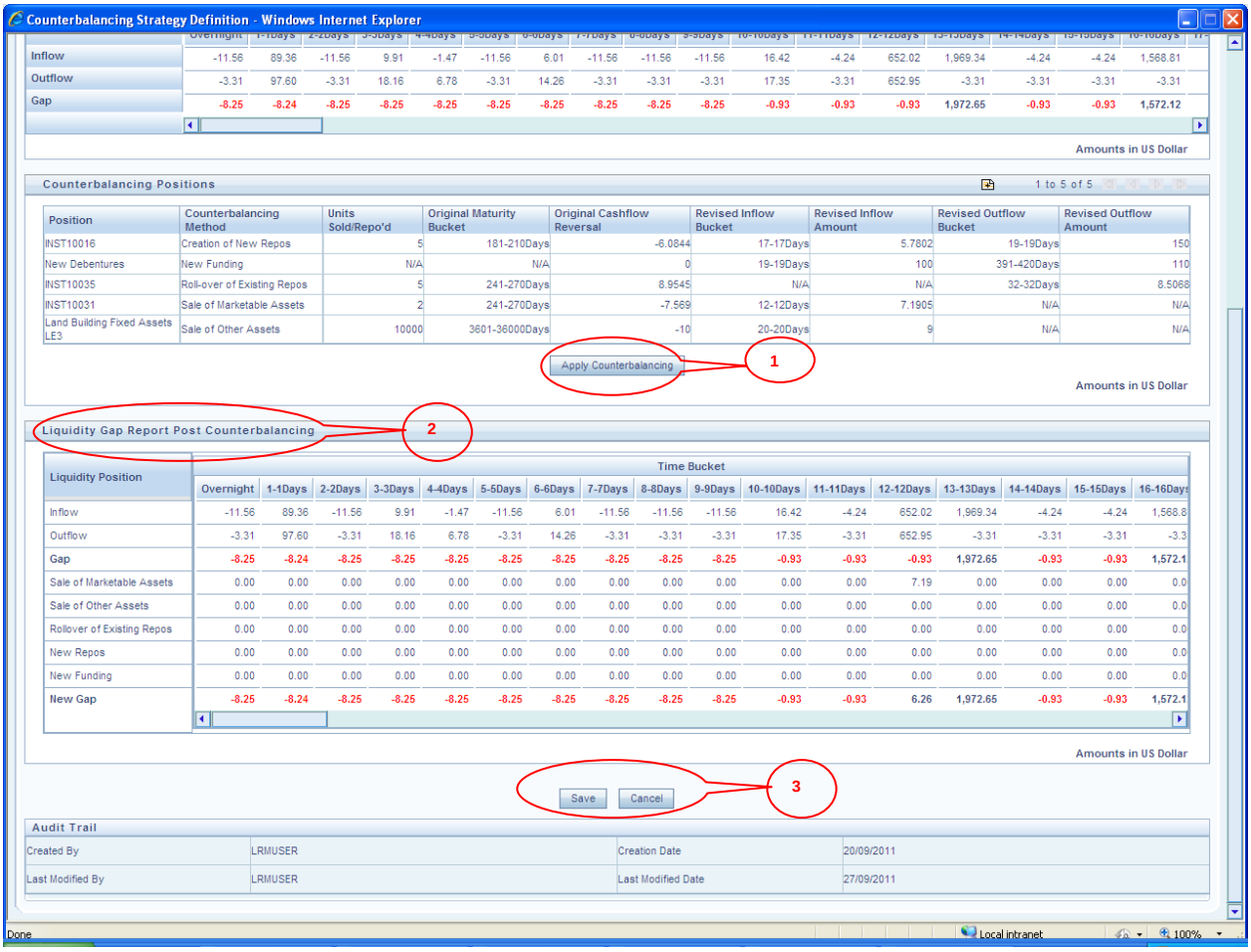


Figure 55: Counterbalancing Strategy Definition Screen 2

Screen Description	Counterbalancing Strategy Definition Screen allows you to define/Execute new Counterbalancing Strategy.	
Reference number	**Tag**	**Description**
1	Apply Counterbalancing	Once you have defined the Counterbalancing Strategy, this button allows you to generate a Gap Report of the selected Run after applying the Counterbalancing Strategy.
2	Liquidity Gap Report Post Counterbalancing	This section displays the Post Counterbalancing Gap Report of the selected Run. This grid is populated once you click the **Apply Counterbalancing** Button.
3	Save	This button saves the defined Counterbalancing Strategy.
	Cancel	This button discards all the changes made in this screen and takes you to **Counterbalancing Summary** Screen.

Table 54: Counterbalancing Strategy Definition Screen 2

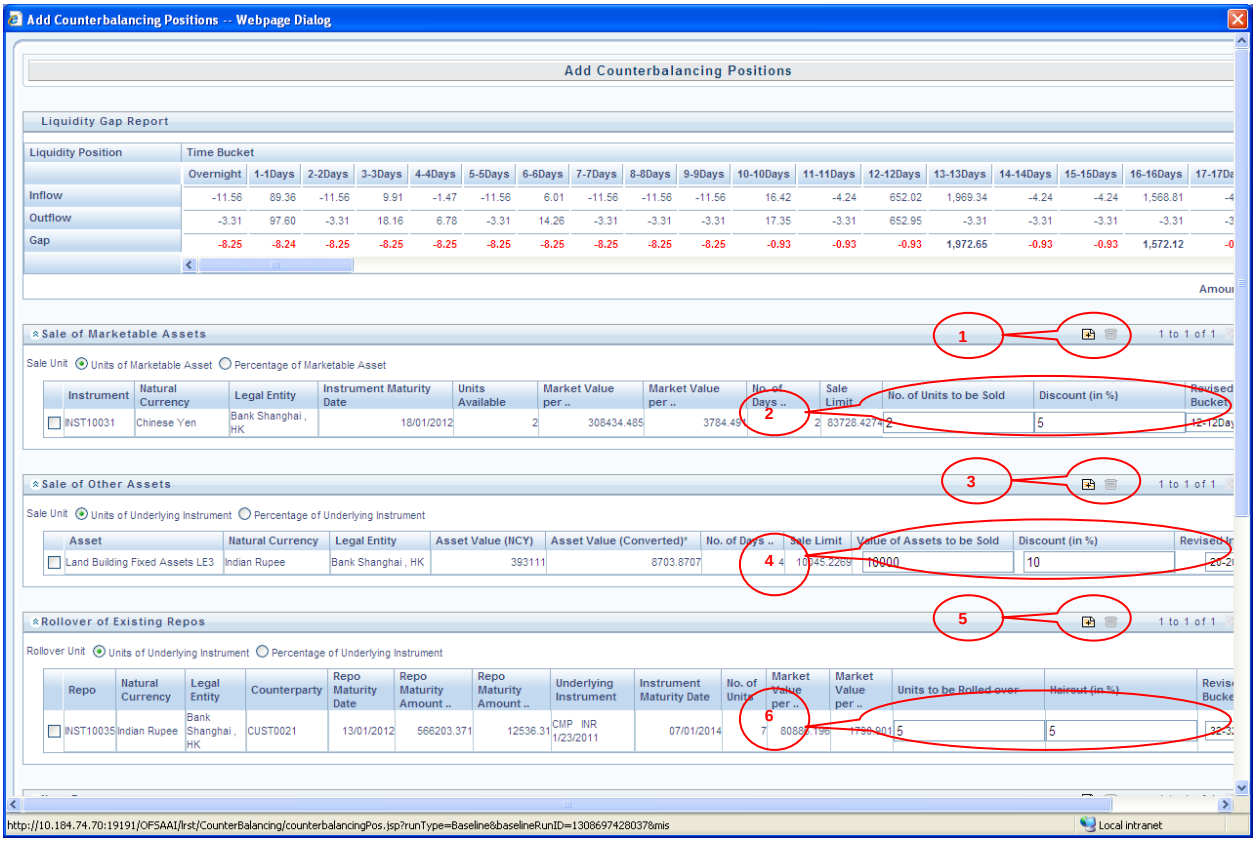


Figure 56: Counterbalancing Positions Add 1

Screen Description	Counterbalancing Position Add Screen allows you to add Counterbalancing Strategy in the LRM Application.	
Reference number	**Tag**	**Description**
1	Add	This link allows you to add **Sale of Marketable Assets** Counterbalancing Strategy. By clicking this link the Instrument Selection Browser screen is displayed where you can select the Instrument over which **Sale of Marketable Asset** Counterbalancing Strategy is to be applied.
	Delete	This button allows you to delete the selected Strategy.
2	Units to be Sold	State the number units of the instrument to be sold.
	Discount (in %)	Provide information on the discount on the price of the instrument. Discount should be entered in Percentage.
	Revised Inflow Bucket	Select the inflow bucket where the stated cash inflow will occur.
3	Add	This link allows you to add **Sale of Other Assets Counterbalancing** Strategy. By clicking this link the Non-Marketable Asset Selection Browser screen appears where you can select the Non-Marketable Asset over which **Sale of Other Assets Counterbalancing** Strategy is to be applied.
	Delete	This button allows you to Delete the selected Strategy.
4	Percentage of Assets to be Sold	You need to state the percentage of the units of instruments to be sold.
	Discount (in %)	You need to provide information on discount

Screen Description	Counterbalancing Position Add Screen allows you to add Counterbalancing Strategy in the LRM Application.	
Reference number	**Tag**	**Description**
		provided on the price of the instrument. Discount should be entered in percentage.
	Inflow Bucket	You need to select the inflow bucket where above stated cash inflow occurs.
5	Add	This link allows you to add **Rollover of Existing Repos** Counterbalancing Strategy. By clicking this link the **Repo Selection Browser** is displayed where you can select the Repo over which Rollover of Existing Repos Counterbalancing Strategy is to be applied.
	Delete	This button allows you to Delete the selected Strategy.
6	Units to be Rolled Over	You need to provide information on the number of units to be rolled over
	Revised Maturity Bucket	You need to specify the Revised Time Bucket into which the repo values are to be readjusted. Revised Maturity Bucket should fall within the range of the number of days to maturity of the underlying instrument.
	Haircut (in %)	You need to provide the Haircut

Table 55: Counterbalancing Positions Add 1

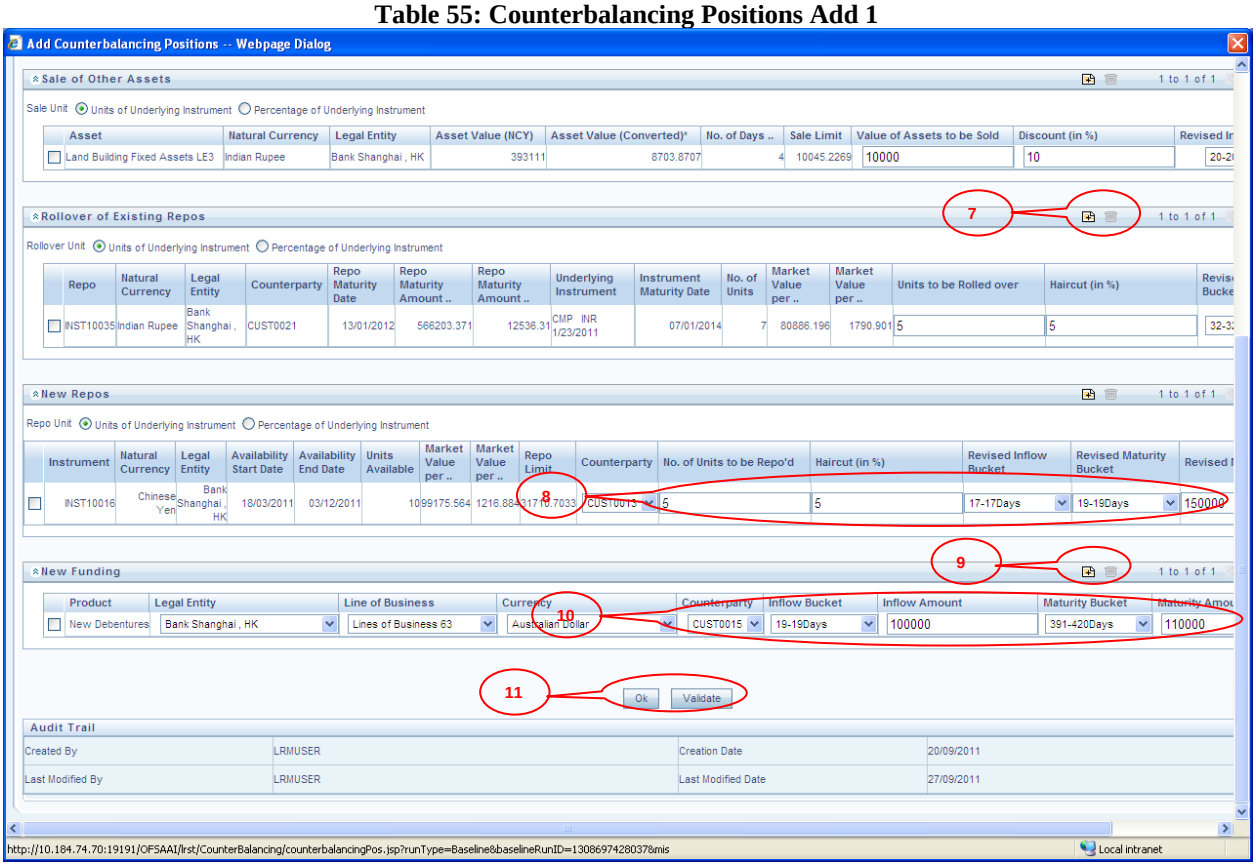


Figure 57: Counterbalancing Positions Add 2

Reference number	Tag	Description
7	Add	This link allows you to add **New Repos Counterbalancing** Strategy. By clicking this link the Instrument Browser screen is displayed where

Reference number	Tag	Description
		you can select the instrument over which **New Repos Counterbalancing Strategy** is to be applied.
	Delete	This button allows you to **Delete** the selected Strategy.
8	No and Units to be Repo'd	Specify the number of units to be repo'd.
	Haircut (in %)	Provide the Haircut in %.
	Revised Inflow Bucket	Specify the **Revised Inflow Bucket,** that is, in which bucket you are going to purchase the Instrument.
	Revised Maturity Bucket	Specify the Revised Maturity Bucket
9	Add	This link allows you to add **New Funding Counterbalancing Strategy**. By clicking this link the Product Browser screen is displayed where you can select the Product over which the New Funding Counterbalancing Strategy is to be applied.
	Delete	This button allows you to Delete the selected Strategy.
10	Inflow Bucket	You need to specify the Inflow Bucket that is in which bucket you are going to purchase the Instrument.
	Inflow Amount	You need to specify the amount you are going to purchase in a given bucket.
	Maturity Bucket	You need to specify the Maturity Bucket in which instrument is maturing
	Maturity Amount	You need to specify the Maturity Amount of the instrument.
11	Ok	This button allows you to save Counterbalancing Strategy and return to Counterbalancing Strategy Screen.
	Close	This button allows you to discard all the changes made in the current screen and return to Counterbalancing Strategy Screen.

Table 56: Counterbalancing Positions Add 2

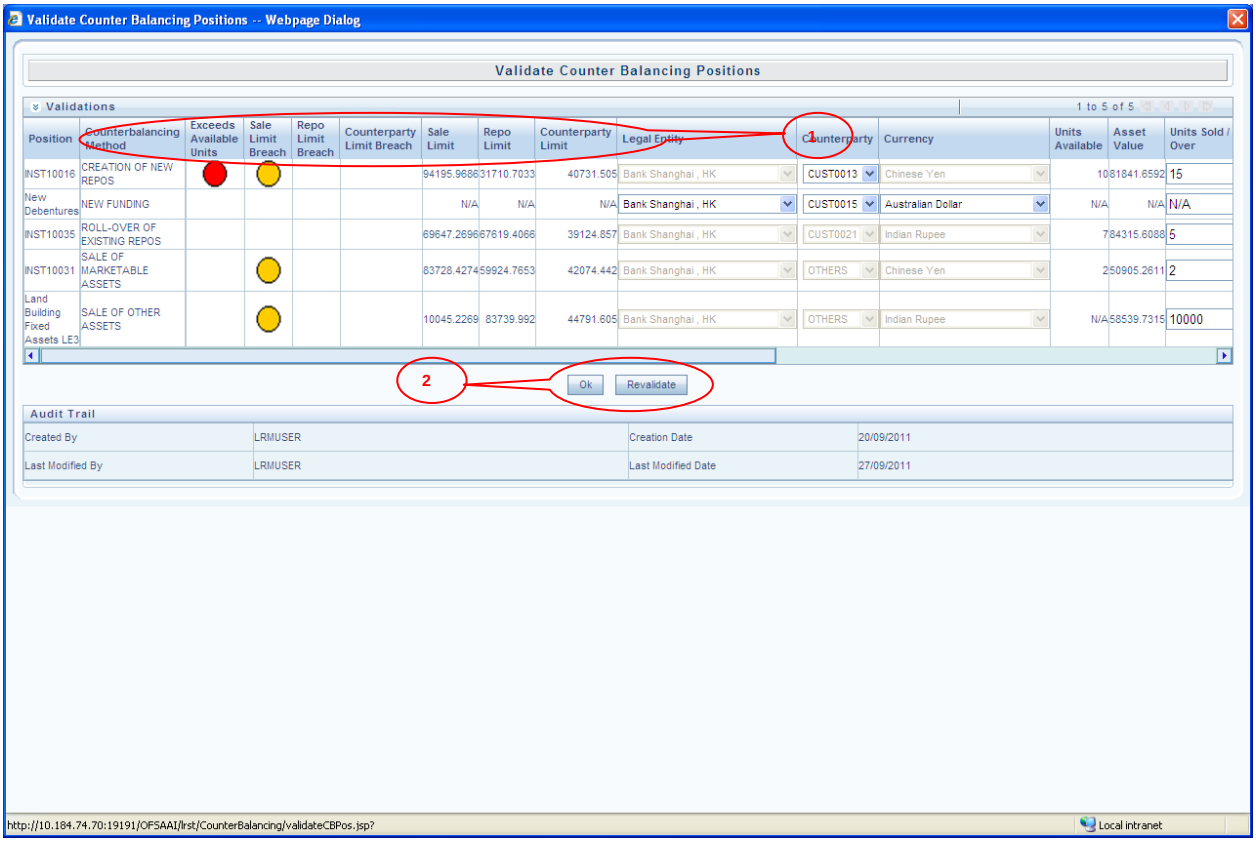


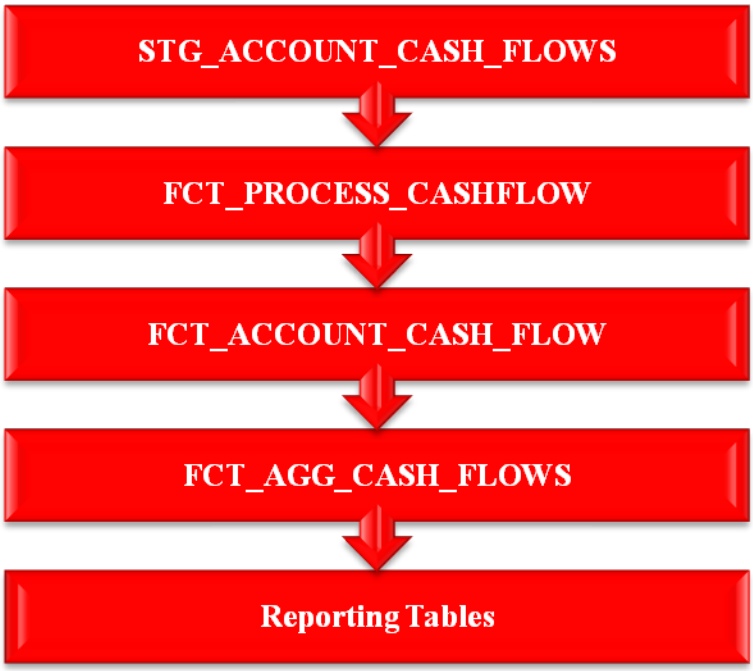
Figure 58: Validate Counterbalancing Positions

Screen Description	**Validate Counterbalancing Position** screen helps verify the counterbalancing positions updated in the **Add Counterbalancing Positions** screen	
Reference number	**Tag**	**Description**
1	Limit	The Limits are for the following : • Exceed Available Units • Sale Limit Breach • Repo Limit Breach and Counterparty Limit Breach. In case if they are any Errors as in case of creation of new repos then the breach would be displayed in RED. If they are just warnings then they are displayed in Orange. The definition would be allowed to save only if there are any warnings, In case there are any Errors the definition would not be allowed to be saved until the user changes the positions Units sold/Repo'd.
2	Revalidate	Once the positions are changed then you can click on Revalidate to verify if there is any breach.
	Ok	This will close the window and Add Counterbalancing Positions screen will be displayed.

Table 57: Validate Counterbalancing Positions

Annexure B: Understanding the LRM Data Flow

This section provides details on the movement of data from staging area or tables to the processing area or tables. There are various table to table (T2T) definitions and a few data transformations (DT) which are used for moving data from the staging tables to the processing tables. It specifies all the table names where cash flow data is moved from, processed and finally stored in the reporting tables.



Data on cash flows is provided as an input in the staging table **STG_ACCOUNT_CASH_FLOWS** which also contains cash flow dates for all the accounts. On execution of the T2T, data moves from **STG_ACCOUNT_CASH_FLOWS** to **FCT_PROCESS_CASHFLOW**. In **FCT_PROCESS_CASHFLOW** all the codes like Account Codes, Currency Codes as specified in the Stage table are converted into their corresponding skey (Surrogate Key from Dim tables). Hence, **FCT_PROCESS_CASHFLOW** is similar to **STG_ACCOUNT_CASH_FLOWS**, the only difference being of codes in the Stage table and skey in FCT table.
From **FCT_PROCESS_CASHFLOW** data moves to **FCT_ACCOUNT_CASH_FLOW** where all cash flow dates are converted into time buckets, that is, time bucket assignment takes place in this stage of the LRM application data flow.
For more information on Time Bucket, see "Time Bucketing" on page 10.
FCT_ACCOUNT_CASH_FLOWS table contains cash flows at Account and time bucket granularity. **FCT_PROCESS_CASHFLOW** table contains cash flow at Account and cash flow date granularity.
Cash flows from **FCT_ACCOUNT_CASH_FLOWS** moves into **FCT_AGG_CASH_FLOWS**. These cash flows are aggregated based on 48 dimensions which are as follows:

- Accounting Classification
- Asset Level
- Basel Customer Type
- Basel II Risk Weight
- Basel Issuer Type
- Basel Rating
- Callable Period
- Collateral Used to Cover Short Positions

- Commitment Status
- Component of a Major Index
- Country
- Currency
- Customer
- Customer Chanel
- Customer Financial Entity Flag
- Customer Type
- Delinquency Period
- Domestic Currency Indicator
- Effective Maturity
- Effective Residual Maturity
- Encumbrance Status
- Guarantor Type
- Illiquidity Status
- Instrument Type
- Interest Rate Type
- Issuer
- Issuer Financial Entity Flag
- Legal Entity
- Line of Business
- Listing Status
- Loan Renewable Status
- Loan Status
- Marketability Indicator
- Maturity
- Operational Relationship
- Product
- Product Type
- Rating
- Residual Maturity
- Revocability Status
- Secured Status
- Sold Exclusively in Retail Market
- Stability
- Time Bucket
- Underlying Asset Level

- Withdrawal Notice Period
- Withdrawal Penalty
- Cash flow Type

These dimensions are either attributes of a Cash flow or are attributes of an Account. Dimensions which are attributes of account are fetched from **FCT_COMMON_ACCOUNT_SUMMARY** and dimensions which are attributes of cash flows are fetched from **FCT_ACCOUNT_CASH_FLOWS**. Once data is loaded in the **FCT_AGG_CASH_FLOWS** then currency conversion module is executed which converts the cash flows from its Natural currency to the Local and Reporting Currency.

For more information on currency conversion, see "Currency Conversion" on page 11.

For Contractual Execution, data flows from **FCT_AGG_CASH_FLOWS** to the reporting tables and Gap reports of Unadjusted Cash flows is generated from reporting tables.

For BAU or Stress Execution, the data which was loaded into **FCT_AGG_CASH_FLOWS** is re-inserted in the same table against a new execution skey and currency conversion module is re-executed as Reporting Currency of the Contractual run and BAU or Stress run may be different.

For more information on currency conversion, see "Currency Conversion" on page 11.

Business Assumptions as defined by you are executed in **FCT_AGG_CASH_FLOWS** where the aggregated cash flows are stored. Once the assumptions are applied, rules for assumptions will adjust the cash flow in the reporting currency; hence currency conversion is re-executed which will convert adjusted cash flows from reporting currency to local and natural currency.

Once cash flows are adjusted in the **FCT_AGG_CASH_FLOWS** data is moved into the reporting tables and Gap reports of Adjusted Cash flow can be generated from these reporting tables.

Annexure C: Business Assumptions Data Maintenance

Adding Existing Dimension to the Assumption

The steps for configuring an existing dimension in the assumption are as follows:

1. Add existing dimension in the source hierarchy of the assumption rule.
2. Change **ANSI Join** in the associated dataset to include the newly added dimension table.

Adding New Dimension to the Assumption

The steps for configuring new dimension in the assumption are as follows:

1. New dimensions can be added by including the new dimensions table or creating an alias over the existing dimension table.
2. Create a hierarchy on the Dimension table or alias.

If it's a cash flow Attribute then a column needs to be added to the following tables:

- **STG_ACCOUNT_CASH_FLOWS**
- **FCT_PROCESS_CASHFLOW**
- **FCT_ACCOUNT_CASH_FLOWS**
- **FCT_AGG_CASH_FLOWS**
- **TEMP_AGG_CASH_FLOWS**
- **FSI_BEHAVIOR_ASSUMPTIONS**
- **TEMP_FSI_BEHAVIOR_ASSUMPTIONS**
- **FSI_BEHAVIOR_ASSUMPTIONS_FD** (data type should be VARCHAR2(500))
- **TEMP_FSI_BEHAVIOR_ASSMPT_FD**
  - **Column_NAME** (data type should be VARCHAR2(500) as it holds a hierarchy unique code)
  - **Column_NAME_DSC** (data type should be VARCHAR2(500))

Column Name should be the same across the following tables:

○**FCT_PROCESS_CASHFLOW**

○**FCT_ACCOUNT_CASH_FLOWS**

○**FCT_AGG_CASH_FLOWS**

○**TEMP_AGG_CASH_FLOWS**

○**FSI_BEHAVIOR_ASSUMPTIONS**

○**TEMP_FSI_BEHAVIOR_ASSUMPTIONS**

If it's an account attribute then a column needs to be added to the following tables:

- **FCT_COMMON_ACCOUNT_SUMMARY**
- **FCT_AGG_CASH_FLOWS**
- **TEMP_AGG_CASH_FLOWS**
- **FSI_BEHAVIOR_ASSUMPTIONS**
- **TEMP_FSI_BEHAVIOR_ASSUMPTIONS**

- **FSI_BEHAVIOR_ASSUMPTIONS_FD** (data type should be VARCHAR2(500))
- **TEMP_FSI_BEHAVIOR_ASSMPT_FD**
- **Column_NAME** (data type should be VARCHAR2(500) as it holds hierarchy unique code)
- **Column_NAME_DSC** (data type should be VARCHAR2(500))

Column_NAME is just a dummy name for the column. You need to specify an appropriate name.

Column Name should be the same across following tables:

- **FCT_COMMON_ACCOUNT_SUMMARY**
- **FCT_AGG_CASH_FLOWS**
- **TEMP_AGG_CASH_FLOWS**
- **FSI_BEHAVIOR_ASSUMPTIONS**
- **TEMP_FSI_BEHAVIOR_ASSUMPTIONS**

- Changes the appropriate T2Ts which is populating data from one table to another table.
- Changes in level flatting DT (FN_DT_LEVEL_FLATTEN_BAU_FD) which populates data from **FSI_BEHAVIOR_ASSUMPTIONS_FD** to **TEMP_FSI_BEHAVIOR_ASSUMPTIONS** table

  The list of changes required in the DT is as follows:

  - Add a new column in the cursor which fetches the data from **FSI_BEHAVIOR_ASSUMPTIONS_FD**.
  - There are a set of IF Clauses for each of the Dimensions which are part of the aggregate table. One or more IF clauses are required to be added so that the new column can be added as the Dimension.
- If the hierarchy of the Dimension is based on alias then the following entry is to be made in **SETUP_BA_ALIAS_FLAG_MAP**.

Column Name	Description of the Entry to be made
V_ALIAS_NAME	Alias name of the Table
V_FLAG_COL_NAME	Physical column name in the **FSI_BEHAVIOR_ASSUMPTIONS**

Table 58: Entry for Hierarchy of Dimension based on Hierarchy

- Add entry in **SETUP_MASTER**. The entry should be as follows:

Column Name	Description of the First Entry to be made	Description of the Second Entry to be made
V_COMPONENT_CODE	Following Format entry required **LRM#DIM<running_number>#**	Name of Dimension Table/Alias over which the corresponding Hierarchy has

Column Name	Description of the First Entry to be made	Description of the Second Entry to be made
		been created
V_COMPONENT_DESC	Following is the Entry required **Dimensions used in LRM**	Following is the Entry required **Dimension Code - Column Mapping**
V_COMPONENT_VALUE	Physical column name in the **FSI_BEHAVIOR_ASSUMPTIONS**	Physical column name in the **FSI_BEHAVIOR_ASSUMPTIONS_FD**

Table 59: Add entry in SETUP_MASTER

- Add dimension in the source hierarchy of the assumption's Rule.
- Change **ANSI Join** in the associated dataset to include the newly added dimension table.

Annexure D: Configuring Pre and Post Process steps in a BAU run.

The entries which explain the configuration of pre and post processing steps in a Business as Usual (BAU) Execution are as follows:

- Update entry in **SETUP_MASTER**. Entries should be as follows:
  - For post processing, update process code of new post process where **V_COMPONENT_CODE** equals to **RM_POSTPROCESS_CODE**.
  - For pre processing update process code of new pre process where **V_COMPONENT_CODE** equals to **RM_PREPROCESS_CODE**.

Annexure E: Best Practices in Configuring Behaviour Assumptions

The best practices in configuring Behaviour Assumptions are listed as follows:

- The Rules Framework of OFSAAI is the framework in which the Behaviour Assumption's are executed.
- The 'Behaviour Assumption' screen displays only those hierarchies which are selected in the underlying Rule. In other words, a filter at the UI level helps to display only those hierarchies that are already selected in the underlying Rule.
- In Rules, include only those hierarchies on which you want to configure the Behaviour Assumptions. Adding hierarchies in the Rule and not using them in the Behaviour Assumptions is as good as excluding them in the Rule, as the default behaviour is to select all the leaf values of Hierarchies participating in the underlying Dataset.
- The nodes selected in the Behaviour Assumption acts as filters on the Hierarchy chosen in the underlying Rules.
- Assumptions should be defined for selective nodes therefore it is best not to map the Assumption at the root node of the hierarchies. If Assumptions are defined at the root level of the hierarchy then it is as good as not selecting the hierarchy in the underlying Rule.
- While defining the underlying Rule of the 'Behaviour Assumptions', map the corresponding Business Processor at the root level of the source hierarchies. Though the Behaviour Assumption may specify behaviour at a higher level of the hierarchy, these Assumptions are applied only on the nodes chosen in the Rule, since the Rule is defined on specific nodes of the Hierarchy. Therefore, the function of the Behavior Assumption UI is to filter the data over and above the filters already applied by the underlying Rule and Dataset.

Annexure F: Multiple Segments

The configurations to be done to support multiple segments:

- Comma separated list of all the segments created for LRM needs to be updated in **V_COMPONENT_VALUE** of **SETUP_MASTER** table where **V_COMPONENT_CODE** equals to **LRMSEGM.** The entry should be as follows:

○ Time Bucket is common across all the segments.

○ Segment is not applicable to "Counterbalancing Strategy Definition", user can define counterbalancing strategy on the runs defined across LRM segments.

Annexure G: Time Bucket

User can define multiple time bucket definitions, but only one definition is applicable for LRM processing. The specific time bucket definition is configured by following **SETUP_MASTER** entries.

- 'Time Bucket as of date identifier' should be updated to the 'as of date of the time bucket' to be used for processing. 'As of date' should be updated in column **V_COMPONENT_VALUE** of **SETUP_MASTER** table where **V_COMPONENT_CODE** equals to **LRM_BCKT_AS_OF_DATE** in "YYYYMMDD" format (Default value is 19000123).
- 'Time Bucket Sys id' should be updated to the 'Sys id of the time bucket' to be used for processing. Sys id should be updated in column **V_COMPONENT_VALUE** of **SETUP_MASTER** table where **V_COMPONENT_CODE** equals to **LRM_BCKT_SYS_ID** (Default value is -999999).
- 'Time Bucket type identifier' should be updated to the 'bucket type identifier of the time bucket' to be used for processing. Bucket type identifier should be updated in column **V_COMPONENT_VALUE** of **SETUP_MASTER** table where **V_COMPONENT_CODE** equals to **LRM_BCKT_TYPE_ID** (Default value is LRM).

Annexure H: Configuring Limit Management

Limit Management in LRM Application is used to setup Liquidity Gap Limit. Following are the steps for configuring the limit defined in limit management application in LRM.

- Define limit using Limit Management Application. Please refer to Limit Management user guide for defining the limit management application.
- Once limit is defined, "SETUP_LIMIT_APP_VALUES" has to be updated. Following are the values to be updated in the table:

Column Name	Value to be update	Comment
n_limit_seq	Sequence to be populated	Sequence is the running number in the table, if there are no records then sequence will start from 1
v_dataset_code	DSLRM051	This is a pre-defined data set for Limit in LRM, with description as "Liquidity Gap Limit". DIM_ORG_STRUCTURE and DIM_RESULT_BUCKET are included in the dataset definition (by default), If user prefers to define limit on any other hierarchies, the dimensions on which those hierarchies are defined have to be included in the dataset. If user prefers to use any other data set for Limit updation, then, the corresponding data set value has to be updated in this column.
v_target_measure_code	Measure code created on n_gap_limit	Measure has to be created on the target column. Target column can be any column of the fact table included in dataset mentioned in v_dataset_code column. By default, LRM stores the limit in the following column of Fact Aggregate Cash Flow table FCT_AGG_CASH_FLOWS.N_GAP_LIMIT. If user prefers to use the same column a measure has to be created on the column and updated in this field. If user prefers to use some other column of the fact table selected in the above dataset then measure has to be created on the corresponding column and updated in the this field.
n_limit_def_sys_id	Limit definition System ID of the LRM limit created.	Limit Definition System ID is generated while defining Limit through Limit Management Application. Details of the Limit Definition System ID are available FSI_LIMIT_DEFINITION_DETAILS and FSI_LIMIT_DEFINITION_VALUES.
n_limit_template_sys_id	Limit template ID of the LRM limit created.	Limit Definition Template ID is generated while defining Limit template through Limit Management Application. Details of the Limit Definition Template ID are available FSI_LIMIT_DEFINITION_DETAILS and FSI_LIMIT_DEFINITION_VALUES.
v_appl_name	LRM	This field stores the Application name, for LRM Application, value of this field will be LRM.

Glossary

AASF	Available Amount of Stable Funding
BAU	Business as Usual
BCBS	Basel Committee for Banking Supervision
BCBS 188	Basel III: International framework for liquidity risk measurement, standards and monitoring
HQLA	High Quality Liquid Asset
ILAS	Individual Liquidity Adequacy Standards
LCR	Liquidity Coverage Ratio
Level 1 Assets	Level 1 Assets as per Basel III Guidelines are as follows: • Cash • Central bank reserves to the extent that can be drawn down during times of stress. • Marketable securities which satisfy the following conditions: ▪ Issuer type or Guarantor Type is one of the following: o Sovereign o Central Bank o Non-Central Government Public Sector Entity o Multi-lateral Development Bank o The Bank For International Settlements o The International Monetary Fund o The European Commission ▪ They are assigned a 0% risk-weight under the standardized Approach of Basel II ▪ Issuer type is not a bank or other financial services entity • Debt securities issued in the local currency of the legal entity in which the liquidity risk is being undertaken or the bank's country of domicile where the issuer type is sovereign or central bank and the risk weight assigned to the sovereign is greater than 0% • Debt securities issued in foreign currencies, to the extent that matches currency needs of bank's operations in that jurisdiction, where the issuer type is domestic sovereign or central bank and the risk weight assigned to the sovereign is greater than 0%
Level 2 Assets	Level 2 Assets as per Basel III Guidelines are as follows: • Marketable securities which satisfy the following conditions: ▪ Issuer type or Guarantor Type is one of the following:

	○ Sovereign ○ Central Bank ○ Non-Central Government Public Sector Entity ○ Multi-lateral Development Banks ▪ They are assigned a 20% risk-weight under the standardized Approach of Basel II ▪ Price has not decreased or haircut has not increased by more than 10% over a 30-day period during a relevant period of significant liquidity stress which is specified by the bank • Corporate Bonds and Covered Bonds which satisfy the following conditions ▪ Issuer type is a non-financial institution ▪ Issuer type is not the bank itself for which the computations are being carried out or any of its affiliated entities (in case of covered bonds) ▪ Credit rating by a recognized external credit assessment institution is equal to or greater than AA- or if it does not have an external rating, the probability of default as per the internal rating corresponds to a rating which is equal to or greater than AA- ▪ Price has not decreased or haircut has not increased by more than 10% over a 30-day period during a relevant period of significant liquidity stress which is specified by the bank
NSFR	Net Stable Funding Ratio
OFSAAI	Oracle Financial Services Analytical Applications Infrastructure
RASF	Required Amount of Stable Funding
Revised Time Buckets	Revised time bucket is the bucket into which the cash flows are to be moved from the original time bucket.
Unencumbered Assets	Unencumbered Assets are assets which can easily sold or mortgaged as these assets are free from debt with no legal defects in its title.

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