Oracle Financial Services Non Maturity Analysis Model





Oracle Financial Services Non Maturity Analysis Model, Release 25A

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1

Get Help

Topics:

- Get Help in the Applications
- Learn About Accessibility
- Get Support
- Get Training
- Join Our Community
- Share Your Feedback
- Before You Begin

1.1 Get Help in the Applications

Use Help icons to access help in the application.

Note that not all pages have Help icons. You can also access the Oracle Help Center to find guides and videos.

Additional Resources

- Community: Use Oracle Cloud Customer Connect to get information from experts at Oracle, the Partner Community, and other users.
- Training: Take courses on Oracle Cloud from Oracle University.

1.2 Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program. Videos included in this guide are provided as a media alternative for text-based topics also available in this guide.

1.3 Get Support

You can get support at My Oracle Support.

For accessible support, visit Oracle Accessibility Learning and Support.

1.4 Get Training

Increase your knowledge of Oracle Cloud by taking courses at Oracle University.

1.5 Join Our Community

Use Cloud Customer Connect to get information from industry experts at Oracle and in the Partner Community. You can join forums to connect with other customers, post questions, and watch events.

1.6 Share Your Feedback

We welcome your feedback about Oracle Applications User Assistance. If you need clarification, find an error, or just want to tell us what you found helpful, we did like to hear from you.

You can email your feedback to My Oracle Support.

Thanks for helping us improve our User Assistance!

1.7 Before You Begin

Refer to following Documents:

See What's New



Non Maturity Products Model Analysis

Non-Maturity Products Modeling helps you to understand the relation between market and bank rate, how much is core out of total available balance for the portfolio, and how long core will remain with the bank based on Decay Rate Profile.

Table 2-1 User Role and Privileges

Purpose	Role Code	Role Name	Function Code	Function Name
NMP Data Generation	RLNMDADMIN	Non Maturity Model Data Generation Admin Role	NMDATAADD	Add Non Maturity Model Data Creation Process
			NMDATARUN	Run Non Maturity Model Data Creation Process
			NMDATADEL	Delete Non Maturity Model Data Creation Process
			NMDATAEDIT	Edit Non Maturity Model Data Creation Process
			NMDATACOPY	Copy Non Maturity Model Data Creation Process
			NMDATAVIEW	View Non Maturity Model Data Creation Process
	RLNMDANALYST	Non Maturity Model Data Generation Analyst Role	NMDATAADD	Add Non Maturity Model Data Creation Process
			NMDATARUN	Run Non Maturity Model Data Creation Process
			NMDATADEL	Delete Non Maturity Model Data Creation Process
			NMDATAEDIT	Edit Non Maturity Model Data Creation Process
			NMDATACOPY	Copy Non Maturity Model Data Creation Process
			NMDATAVIEW	View Non Maturity Model Data Creation Process
	RLNMDAUDIT	Non Maturity Model Data Generation Auditor Role	NMDATAVIEW	View Non Maturity Model Data Creation Process

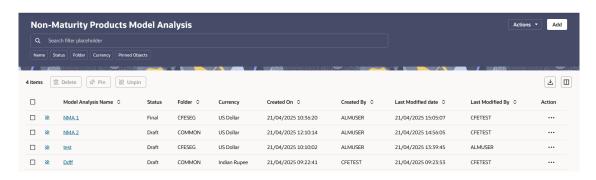
Table 2-1 (Cont.) User Role and Privileges

NMP Model Analysis	RLNMDLADMIN	Non Maturity Model Analysis Admin Role	NMMODELADD	Add Non Maturity Model Analysis
			NMMODELDELET E	Delete Non Maturity Model Analysis
			NMMODELEDIT	Edit Non Maturity Model Analysis
			NMMODELCOPY	Copy Non Maturity Model Analysis
			NMMODELVIEW	View Non Maturity Model Analysis
	RLNMDLANALYST	Non Maturity Model Analysis Analyst Role	NMMODELADD	Add Non Maturity Model Analysis
			NMMODELDELET E	Delete Non Maturity Model Analysis
			NMMODELEDIT	Edit Non Maturity Model Analysis
			NMMODELCOPY	Copy Non Maturity Model Analysis
			NMMODELVIEW	View Non Maturity Model Analysis
	RLNMDLAUDIT	Non Maturity Model Analysis Auditor Role	NMMODELVIEW	View Non Maturity Model Analysis

Non-Maturity Products Model Analysis Summary

This page is the gateway to all Non-Maturity Products Model Analysis rules and related functionality. You can navigate to other pages relating to Non-Maturity Products Model Analysis rules from this point.

Figure 2-1 Non-Maturity Products Model Analysis Summary Page



Search Non-Maturity Products Model Analysis Rule

Prerequisites: Predefined Non-Maturity Products Model Analysis rule

To search for a Non-Maturity Products Model Analysis rule, follow these steps:

Click **Search** after entering the search criteria. The search results are displayed in a table containing all the Non-Maturity Products Model Analysis rules that meet the search criteria.

Or

The other method to search a Non-Maturity Products Model Analysis rule is using the **Field Search** option. The Field Search is an inline wildcard UI search that allows you to enter value partially or fully and the rows that match the entered string in any of its column is fetched in the Summary table. Enter the **Name**, **Status**, **Folder**, or **Access Type** status of the Non-Maturity Products Model Analysis rule and click **Search**.

- Add: Click the Add icon on the page header to build a new Non-Maturity Products Model Analysis rule.
- Actions: Click Actions to refresh page or see help.
- Delete: Enables you to select and delete one or multiple rules in the table simultaneously.
- Pin/Unpin: Enables you to pin or unpin the selected rule
- **Export**: Allows you to download the summary page details in .cs format.
- Columns: Enables you to customize the list of columns.

The Non-Maturity Products Model Analysis summary table displays the following columns:

- Model Analysis Name: Name of the Non-Maturity Products Model Analysis rule's short name. Click Model Analysis Name link to view the details of Non-Maturity Products Model Analysis rule.
- Status: Status of the Non-Maturity Products Model Analysis rule.
- Folder: The folder where the Non-Maturity Products Model Analysis rule is saved.
- **Currency:** Displays the Currency for which Non-Maturity Products Model Analysis Rule is defined. One rule can be created only on one particular currency.
- Created On: The Date and Time when the Non-Maturity Products Model Analysis rule was created.
- Created By: The user who created the Non-Maturity Products Model Analysis rule.
- Last Modified By: The user who modified run the Non-Maturity Products Model Analysis
 rule.
- Last Modified Date: The Date and Time when the Non-Maturity Products Model Analysis
 rule was last modified.
- **Action:** Click this icon to view a list of actions that you can perform on the Non-Maturity Products Model Analysis rule.
 - View/Edit: Based on the user privilege assigned, you can either only view or edit existing Non-Maturity Products Model Analysis rules. To edit a rule, you must have Read/Write privilege.
 - Save As: You can reuse a Non-Maturity Products Model Analysis rule by saving it under a new name thus saving time and effort in entering data multiple times; it also leads to reduced data entry errors.
 - Delete: You can delete Non-Maturity Products Model Analysis rules that you no longer require. Note that only Non-Maturity Products Model Analysis rule owners and those with Read/Write privileges can delete Non-Maturity Products Model Analysis rules. A Non-Maturity Products Model Analysis rule that has a dependency cannot be deleted. A rule cannot be retrieved after deletion.



Also See:

• Create Non-Maturity Products Model Analysis

2.1 Creating Non-Maturity Products Model

To create a new Non-Maturity Products Model Analysis Rule, perform the following steps:

- 1. Navigate to the Non-Maturity Products Model Analysis page.
- 2. Click Add. The Create Non-Maturity Products Model Analysis page is displayed.

Figure 2-2 Create Non-Maturity Products Model Analysis



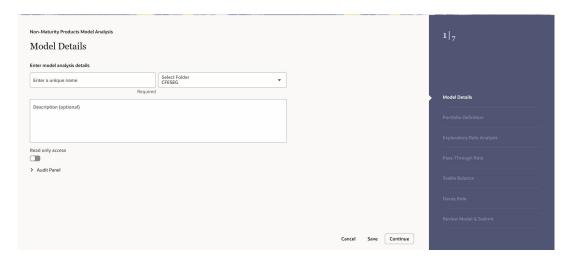
- 3. Follow the steps mentioned in below sections:
 - a. Model Details
 - b. Portfolio Definition
 - c. Exploratory Data Analysis
 - d. Pass-Through Rate
 - e. Stable Balance
 - Decay Rate
 - g. Review and Submit
- 4. Click **Submit/Save** after entering all details in above sections.

Step 1: Model Details

 From Non-Maturity Products Model Analysis, click Start. The Model Details page is displayed.



Figure 2-3 Model Details

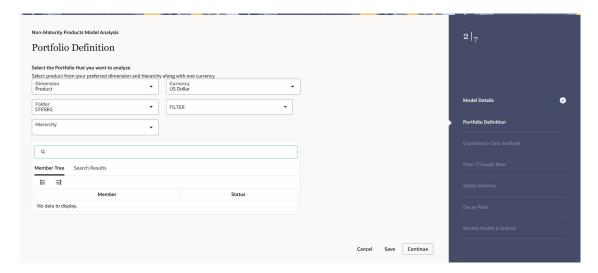


- 2. Enter the following details:
 - Name: Name of model. The Non-Maturity Products Model name should be unique. Any special characters (*, &, new line, and double quotes) are not allowed. You can enter maximum 120 characters.
 - Folder: Folder Name where you want to save the model.
 - **Description:** Description of model. The maximum limit of this field is 300 characters. Any special characters (*, &, new line, and double quotes) are not allowed. You can enter maximum 255 characters.
- Click Continue.

Step 2: Portfolio Selection

The Portfolio Selection window is displayed to set Portfolio.

Figure 2-4 Portfolio Selection



1. Enter the following details in Portfolio Selection section:

- Dimension: Select the dimension.
- Currency: Select the currency. The Currency drop-down displays the list of active currencies.
- Folder: Select the folder from which you want to pick the Hierarchy.
- Hierarchy: You can specify some parameters at product-currency combination.
 Hierarchies of selected folder will be listed and you can select one from the available list of hierarchies.
- · Filter: Select the filter.
- Select Product(s) from Member Tree of Assumption Browser. The Assumption Browser has following two tabs: Member Tree and Search Results
 - Member Tree: Member Tree tab shows the hierarchical structure and allows you
 to define rules by selecting the node members from the browser. Select Node and
 Click Menu icon next to it to view the available options.

Figure 2-5 Member Tree

Expand self, child and descendants

Expand selected member/branch

Select UnDefined self, child

Select UnDefined self, child and descendants

Select Defined self, child

Select Defined self, child and descendants

UnSelect self, child and descendants

Status of node is also displayed in Member Tree section, for example Selected, and so on. To select member hierarchy, following options are available:

- * **Expand self, child and descendants:** Allows to expand the selected node itself along with its child and descendants.
- * Expand selected member/branch: Allows to expand the selected node
- Select UnSelect self, child: Allows to unselect the selected node itself along with its child
- * Select UnSelect self, child and descendants: Allows to unselect the selected node itself along with its child and descendants.
- Select Defined self, child: Allows to select the selected node itself along with its child.
- * Select Defined self, child and descendants: Allows to select the selected node itself along with its child and descendants.
- * **UnSelect self, child and descendants:** Allows to unselect the selected node itself along with its child and descendants.

Use **Show Numeric Code Values (Left)** icon to view the code value left to the Node name.



Use **Show Numeric Code Values (Right)** icon to view the code value right to the Node name.

Here, you can perform the following tasks on the selected node(s):

- * Add
- * Edit
- * View
- * Delete
- Copy
- Search Results: You can also search the members based on the filters. This section shows the searched node(s). To search a member, follow these steps:
 - a. Navigate to **Assumption Browser** section of the Rule Definition page.
 - b. Enter the Member ID, Name, Status, or Is Leaf in Search Criteria.

Figure 2-6 Search Criteria



c. Click Search. The searched member(s) will be displayed in Search Results section of Assumption Browser.

Figure 2-7 Searching Members



Here, you can perform the following tasks on the searched node(s):

- * Add
- * Edit
- * View
- Delete
- * Copy

Click **Show Parentage icon** to view the Parent-child Node level hierarchy details of selected Node.

Use **Show Numeric Code Values (Left)** icon to view the code value left to the Node name.

Use **Show Numeric Code Values (Right)** icon to view the code value right to the Node name.

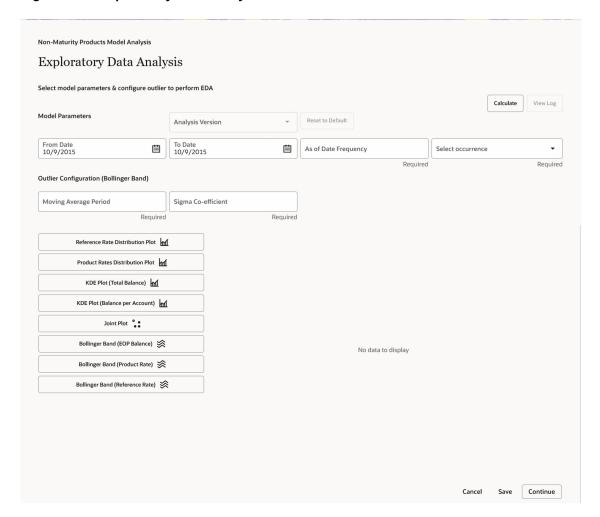
2. Click Continue to navigate to Exploratory Data Analysis section.



Step 3: Exploratory Data Analysis

The **Exploratory Data Analysis** window is displayed to define Market Rates. This window will help you to perform EDA calculations and get a glimpse of data being used for modelling.

Figure 2-8 Exploratory Data Analysis



- 1. Enter the following details in the Exploratory Data Analysis section:
 - Model Parameters (As of Date Range):
 - Analysis Versions: Shows the analysis version.
 - Model Parameters (As of Date Range): You can select a date range which will
 define the historical period within which data needs to be picked for Model
 creation. By default, the Date range is populated as below:
 - * From Date: Max (As of Date) available in Model input Table.
 - * To Date: Max [min (As of Date), From Date 10 Years].

Default values are populated from FSI AUDIT NM LOAD BATCH table.

As of Date Frequency: The default value of this field is one month. The As of
 Date Frequency defines on what regular intervals, data needs to be picked from
 the input table. For example, you can have historical period as last three years, in

those three years at what regular interval data needs to be picked up from history table that would be defined by **As of Date Frequency**.

- · Outlier Configuration (Bollinger Band):
 - Moving average period: The default value of this field is one month. The Moving
 Average period defines the historical term over which the moving average needs
 to be calculated for Bollinger band formation. This defines the period over which
 moving average gets calculated to create bollinger band.
 - Sigma Co-efficient: The default value of this field is 1. Sigma Co-efficient defines the outliers, any number which is (sigma coefficient * standard deviation) away from the mean, will not be considered for calculations. This field accepts Integer and Decimal values in the range 0 10. Sigma Co-efficients helps you to define the lower and upper bands for bollinger band graphs.
- 2. Click Calculate to perform Exploratory Data Analysis and get EDA plots. You can refresh the window using the Reset to Default button to check if the EDA is completed. When you open EDA window first time for a particular model, Version(EDA) field would not appear as there is no previous version to display. Subsequently, when first version is created and you go for second version, version (EDA) tab will start appearing with previous EDA versions. When EDA version is submitted, a message will appear with version number. A message is displayed in case last run version was failed. If run was successful and you again check this, the latest version would appear on the UI. The Reset to Default button resets the entered values to their default values.
- 3. Click Continue to navigate to Pass-Through Rate section.

Step 4: Pass-Through Rate

Pass Through Rate is based on linear regression between market and offered rate. For current accounts, the offered rate can be zero. In such cases, the pass-through rate will also be zero, as changes in the market rate do not affect the offered rate.

Pass-Through Rate

Derive and analyse the pass-through rates

Dust from 2020-01-31 a 2020-12-31 period with 1 M as of date frequency for 7 days moving everage having signs sor-efficient 2.5

Catalates

Vew Log

Advanced Details

Figure 2-9 Pass-Through Rate



Click Calculate to view all the evaluation parameters and quality plots. Pass Through Rate
calculations are submitted, a message is displayed with version number. This window
shows all the model quality parameters and graphs. At this stage, Pass through rate or
beta between market rate and deposit rate is calculated. You can zoom the graph to
enhance visibility.

The **Advanced Details** section helps you to evaluate the model fit.

The **Model Summary** section shows the details of Model parameters like R2, AIC, BIC and regression co-efficient. That is, how much change in market rate is passed on to the deposit rate.

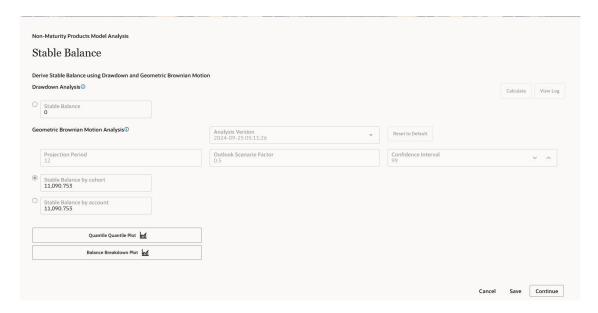
At any stage, if you want to come out of the model analysis module, click **Cancel** or **Save** button to go back to Non-Maturity products model summary screen.

2. Click Continue to navigate to Stable Balance section.

Step 5: Stable Balance

The Stable Balance section shows the Projection period.

Figure 2-10 Stable Balance



- 1. You can set the stable balance as required. Projection period can be only be positive integers which will act as multiplier to **As of Date Frequency**, for example, As of Date. To calculate Stable Balance, you can use following methods:
 - DrawdownAnalysis: TheDraw Down Analysis calculates each period's Run-offs in the
 historical period and subtracts the maximum Run-off from the most recent total
 balance to arrive at stable balance. This model performs calculations based on
 maximum Drawdown between two data points for given period.
 For example, analysis is done over past 5 years and monthly data points are given. If
 Balance is available for each data point, then system calculates balance reduction for
 each data point from previous data point. Finally, whatever will be the maximum
 balance reduction in two adjacent data points that is subtracted from point in time
 balance (Balance on latest As of Date) and remaining balance is the stable balance.
 - **Geometric Brownian Motion:** This approach will first calculate the past Run-offs volatility and assuming normal distribution of Run-offs, accept confidence interval as

user input, projection period for time adjustment, and outlook scenario factor (volatility multiplier) as input from the user.

This model works based on historical volatility and confidence interval selected in the UI. It assumes that the underlying data follows a normal distribution, and based on the confidence interval, X% of the balance lies within the specified range. This allows the system to determine the stable balance.

95% Confidence Interval – (-1.96 to +1.96)

90% Confidence Interval - (-1.645 to +1.645)

80% Confidence Interval – (-1.282 to +1.282)

Here, you can select the outlook scenario factor, which will be multiplied with historical volatility and subsequently used for **Geometric Brownian Motion** based stable balance calculations.

Geometric Brownian Motion outcome is based on both portfolio level balance volatility and account level balance volatility. You can select any of the stable balances, which are more suitable as per the given context.

The confidence interval slider field has a range of 0-100% and by default value as 95% and Outlook scenario factor (Volatility Multiplier) is set at 1 (Default Value). The range of outlook scenario factor is 0.01 to 1.99.

You can change any of the inputs and generate multiple versions.

- 2. After clicking Calculate, the stable balance would be shown at cohort/account level using both cohort level and account level volatility and saved against version.
 Stable balance can be calculated with multiple methods, so before proceeding to next step, you must select Stable Balance by Cohot or Stable Balance by account method to confirm one stable balance on which rest of the subsequent processing will take place.
 - When this section is displayed first time, after clicking the **Calculate**, the stable balance is calculated for both methods, **Drawdown analysis** and **Geometric Brownian Motion**.
 - In subsequent runs, if any of projection period, confidence interval or Scenario factor is changed, then new version will be generated only for **Geometric Brownian Motion**. When you click **Calculate** button, then a message is displayed: *GBM version xyz is submitted*. If version is failed, a message is displayed: *GBM version xx is failed* and UI will revert back to last successful version.
- Click Continue to navigate to Decay Rate section.

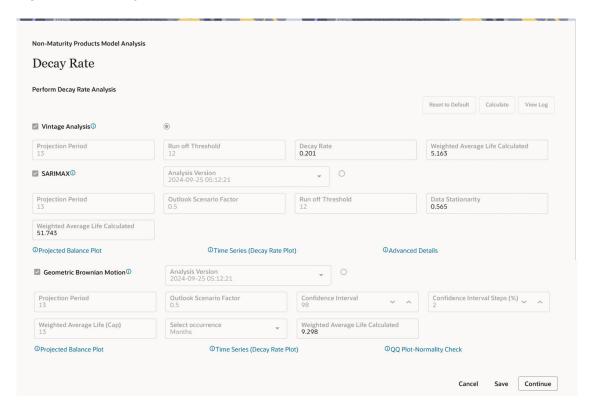
Step 6: Decay Rate

For Decay rate calculations, you can select any one of following three approaches:

- Vintage Analysis
- SARIMAX
- Geometric Brownian Motion



Figure 2-11 Decay Rate



Select the Decay Rate method:

 Vintage Analysis: This method calculates one decay rate value as per the various vintages and regular intervals over which data is being picked for the defined portfolio. The same decay rate is applicable to the whole projection period. The vintage run-off model aims to categorize deposit balances based on historical

The vintage run-off model aims to categorize deposit balances based on historical tranches, referred to as vintages. A vintage comprises all individual accounts for a non-maturing deposit account type that were opened within a specific time bucket, such as a month or week. Behavioral characteristics are applied to each vintage by calculating the monthly decay within each vintage. Run-off calculations are performed across data points and account origination buckets, with the final decay rate being the average of both dimensions for the selected portfolio.

Select the **Vintage Analysis** check-box if you want to include it in the calculation, or leave it unchecked to exclude it. Vintage analysis requires account-level data for the entire historical period, which may not be available initially, so you can opt to bypass this method. Other methods use portfolio or cohort-level data, which is generally easier to obtain. By default, the check-box is unchecked, indicating that this model is not part of the processing. You can set the projection period according to your needs.

• **SARIMAX:** This method creates a future balance profile based on historical balances, along with Run-off volatility multiplied by the Outlook scenario factor (default 1). Based on balance Run-offs, a decay profile is created.

Among the various approaches, the SARIMAX model (Seasonal Autoregressive Integrated Moving Average with exogenous variables) is a powerful tool for modeling and forecasting trends and seasonal variations in time series data. It also incorporates external variables to enhance prediction accuracy. This model is part of the ARIMA family and is built on three key components: autoregression (AR), moving average (MA), and integration (I).



- Autoregression (AR) uses past values of the time series to predict the current value.
- Moving average (MA) accounts for past prediction errors, applying a linear regression on the last "q" error values to forecast the present.
- Integration (I) makes the data stationary by accounting for differences between consecutive observations.

For data with seasonal variations, the SARIMA model is used, adding the "Seasonal" component to ARIMA, which captures patterns that repeat at regular intervals. Based on the decay rate in each period, the weighted average life is calculated by multiplying the run-off matrix with the time series.

Geometric Brownian Motion: Based on balance Run-off volatility and your inputs like
confidence interval and outlook scenario factor, the Decay Rates are calculated for
each subsequent period in projection period and decay profile is created. Based on the
Decay Rate Profile, Run-offs would be calculated and finally, a balance profile will be
created which will in turn help to calculate WAL.
 Based on the Decay Rates profile, the model will do Weighted Average Life (WAL)

Based on the Decay Rates profile, the model will do Weighted Average Life (WAL) calculations. If the WAL exceeds the specified regulatory cap, you can set a confidence interval range and steps (defaulting to 5%) for adjusting the confidence interval in each calculation. For example, if the range is 80-95%, the system will generate a Decay Rate Profile at 80%, 85%, 90%, and 95% intervals. Through an iterative process, it will attempt to calculate a Decay Rate Profile that brings the WAL within the regulatory cap set by the user.

If in a given confidence interval range, WAL is still more than regulatory WAL (Cap), a simple linear Decay Rate Profile is created.

The run-off threshold is a user-defined input that sets the minimum balance at which WAL calculations will stop, assuming the balance has reached zero at that point.

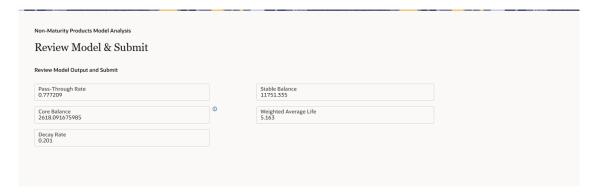


When this section is launched first time and you click **Calculate**, Decay Rate is calculated for all three methods, Vintage Analysis, SARIMAX, and Geometric Brownian Motion.

Click Continue to navigate to Review and Submit section.

Step 7: Review and Submit

Figure 2-12 Review and Submit Model





- 1. Navigate to **Preview and Submit** section. This section shows the Model details before confirming the model. Here, you cannot edit any details. If you want to update any details, click Model Summary to go back. When model is saved, it is always be in **Draft** status.
- 2. Click **Submit** to create the Non Maturity Products Model. The created process will be displayed on **Non Maturity Products Model Summary** page.

