

Oracle Financial Services Forecast Rates

User Guide

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ORACLE
Financial Services

Forecast Rates

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Document Control

Version Number	Revision Date	Change Log
1.0	June 2022	Created the first draft of the document.
2.0	September 2022	Updated the document for Behavior Pattern Rule

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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.

1.1.1 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](#)
- [Get started with Cash Flow Engine Cloud Service](#)

2 Forecast Rates

Forecast Rate Scenario Assumptions allow you to define future interest rates, future economic indicators, future currency exchange rates, future interest rate volatility, and select behavior pattern rule for cash flow calculation. Interest rate forecasts are used to project cash flows, including pricing new business, repricing existing business, calculating prepayments, and determining discount methods. Interest rate volatility forecast are used for option valuation. Economic Indicator forecasts are used to calculate cash flow for inflation-indexed instruments, included in Behavioral Modeling and scenario or stress analysis. Currency Exchange Rate Forecasts are used to account for the effects of currency fluctuations on income.

The Forecast Rate Assumptions use interest rate curve, volatility surface, economic indicator, active and reporting currencies, and behavior pattern rule.

This module describes how to create a Forecast Rates Assumption Rule to Forecast Cash Flows and, if you work with multiple currencies, to model relationships between Interest Rates and Exchange Rates.

Topics:

- [Forecast Rates Rule Summary Page](#)
- [Search Forecast Rate Rule](#)
- [Create Forecast Rate Rule](#)
- [View and Edit Forecast Rate Rule](#)
- [Copy Forecast Rate Rule](#)
- [Delete Forecast Rate Rule](#)

2.1 Forecast Rates Rule Summary Page

This page holds all Forecast Rate Rules and related functionality. You can navigate to other pages relating to the Forecast Rate Rule from this page.

The **Forecast Rate Summary** Page displays the following columns.

Table: Forecast Rate Rule Summary– Fields and Descriptions

Column	Description
Name	Displays the Forecast Rate Rule's short name. Mouse over the Name field to view the Code and Description details.
Reporting Currency	Displays the Reporting Currency selected in the Forecast Rates Rule.
IRRBB Shock	Displays Yes if IRRBB (Interest Rate Risk in Banking Book) scenario type is defined in the Forecast Rates Rule, Otherwise No is displayed.
No. of Scenario	Displays number of scenarios defined in the Forecast Rates Rule
Folder	Displays the Folder name where the Forecast Rate Rule is saved.
Last Modified By	Displays the Name of the user who last modified the Forecast Rate Rule.
Last Modified Date	Displays the Date and Time when Forecast Rate was modified last.






Column	Description
Access Type	Displays the access type of rule. It can be Read-Only or Read/Write.
Action	Displays the list of actions that can be performed on the Forecast Rate Rule. For more information, see Forecast Rule – Icons and Descriptions .

Figure 1: Forecast Rate Summary Page

Name	Reporting Currency	IRRBB Shock	No Of Scenarios	Folder	Last Modified By	Last Modified Date	Access Type	Action
RT-FR-Flat	US Dollar	NO	1	CFSEEG	MBALAKRISHNA	08/09/2022 06:27:10	Read/Write	...
RT-FR-Direct	US Dollar	NO	1	CFSEEG	CFETEST	02/09/2022 10:24:28	Read/Write	...

The **Action** column on the **Forecast Rate Summary** Page offers several actions that allow you to perform different functions. The following actions are available for the **Forecast Rate Summary** Page.

Table: Forecast Rate rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary Page to build a new Forecast Rate Rule.
Multiple Delete	Select one or more rules in the table and then click the (-) icon at the top right of the Summary Page to delete more than one rule at the same time.
Help	Click  icon to view the Forecast Rate Rule Help.
View/Edit	Click  in the Action column and select View/Edit to view or edit the contents of a Forecast Rate Rule in Read/Write format. Depending on user privileges the rule will open in either View or Edit Mode.
Save As	Click  in the Action column and select Save As to create a copy of an existing Forecast Rate Rule.
Delete	Click  in the Action column and select Delete to delete an existing Forecast Rate Rule.
Dependency Check	Click  in the Action column and select Dependency Check to generate a report on all rules that utilize your selected Forecast Rate.

2.2 Search Forecast Rate Rule

Search for a Forecast Rate Rule to perform any of the following tasks:


- View
- Edit
- Copy
- Delete
- Check Dependencies

Prerequisites

Predefined Forecast Rate Rule

Procedure

To search for a new Forecast Rate Rule, follow these steps:

1. Navigate to the **Forecast Rates Summary** Page.
2. Enter the **Code, Name, Description or Folder** of the Forecast Rate Rule and click **Search** . Only Forecast Rate Rules that match the search criteria are displayed.

2.3 Create Forecast Rate Rule

To create a new Forecast Rate Rule, follow these steps:

1. Navigate to **Forecast Rates Summary** Page.
2. Click **Add** icon. The **Forecast Rates Details** Page is displayed.
3. Enter the following Details.

Table: Forecast Rate Rule – Fields and Descriptions

Field	Description
Name	Enter the name of the Forecast Rate Rule.
Description	Enter the description of the Forecast Rate Rule. This is an optional field.
Folder	Select the Folder where the Forecast Rate Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/Write.
IRRBB Shock	Select this checkbox if you want to define IRRBB Scenario. This option is available only in Asset Liability Management Cloud Service. If selected, IRRBB standardized and enhanced approach scenario types can be created.
Reporting Currency	Currencies that were marked as 'Reporting Currency' in Rate Management appear for selection here. Select one Reporting Currency.

4. Click **Save**, if you want to save the Forecast Rate Rule and update it later.

2.3.1 Define Interest Rate Curve Forecast

The IRCs for all active currencies (and Reporting Currencies, a subset of the Active Currencies) are listed under Interest Rate Curve Section. The options under Interest Rate Code Forecast Method provide multiple ways to model the effects on Portfolio Cash Flows due to Interest Rate changes.

Figure 2: Interest Rate Curve Forecast Rates

You can define Interest Rate Forecast for the following methods:

Table: Forecast Rate rule – Methods and Descriptions

Method	Description
Flat	Forecast no change in the Interest Rate for all dates beginning with the As-of Date.
Direct Input	Type Interest Rates directly for any modeling period or Interest Rate term.

The following Interpolation Methods are available.

Table: Forecast Rate Rule – Interpolation Methods and Descriptions

Method	Description
Linear Interpolation	Linear interpolation uses Linear Yield Curve smoothing. Linear Yield Curves are continuous but not smooth; at each knot point, there is a kink in the yield curve. You may not want to use a Linear Yield Curve with a model that assumes the existence of a continuous Forward Rate Curve, due to the nonlinear and discontinuous knot points of a Linear Yield Curve.

Method	Description
Cubic Spline of Yields	<p>A cubic spline is a series of third-degree polynomials that have the form:</p> $y = a + bx + cx^2 + dx^3$ <p>These polynomials are used to connect the dots formed by observable data. The polynomials are constrained so they fit together smoothly at each knot point (the observable data point.) This means that the slope and the rate of change in the slope with respect to time to maturity have to be equal for each polynomial at the knot point where they join. If this is not true, there is a kink in the yield curve and they are continuous but not differentiable.</p> <p>Two more constraints make the Cubic Spline Curve unique. The first restricts the zero-maturity yield to equal the 1-day interest rate. The second restricts the yield curve at the longest maturity to be either straight ($y''=0$) or flat ($y'=0$).</p>
Quartic Spline	<p>Quartic interpolation requires a minimum of 4 knot points. The quartic interpolation equation can be represented as:</p> $Y = a + bX + cX^2 + dX^3 + eX^4$ <p>The end knot points satisfy equations for one curve and all intermediate points satisfy two curves. Therefore, in a scenario with a minimum number of knot points, there are 6 equations. For n number of knot points, the number of equations is $2n-2$. If n is the number of points to be interpolated, the order of the matrix to be formed is $5*(n-1) \times 5*(n-1)$. The matrix is formed according to the following logic:</p> <p>The second derivative at the endpoints and the first derivative of the last point is Zero. At the points other than the endpoints, the value of the first derivatives, second derivatives, and the third derivatives of the function are equal.</p>

In looking up the Forecast Rates, the Cash Flow Engine (where necessary) performs an interpolation between yield curve term points. For example, in determining a three-month rate from a yield curve that contains only a one-month rate and a six-month rate, the Cash Flow Engine performs an interpolation to determine the implied three-month rate. The Interpolation method used is defined by the selected interpolation method for the Interest Rate Curve.

You can generate the forecast rates for 360 calendar months starting from As-of-Date.

Following options are available for Interest Rate Curve Forecast Rule:

- [Define](#)
- [Copy Across](#)
- [Restore Default](#)
- [View](#)

2.3.1.1 Define

- **Flat Method**

- a. Select Interest Rate Code using corresponding checkbox and select **Forecast Method** as **Flat**.
 - b. Select the **Interpolation** method.
 - c. Input Minimum Rate, if required.
 - d. Click Define.
The status of the Interest Rate Code is changed to **Defined**.
- **Direct Input**
 - a. Select Interest Rate Code using corresponding checkbox and select **Forecast Method** as **Direct Input**.
 - b. Select the **Interpolation** Method.
 - c. Input Minimum Rate, if required.
 - d. Click **Define**.
The **Direct Input** window is displayed:
 - e. Enter data and click **Apply**.
 - f. The status of the Interest Rate Code is changed to **Defined**.

2.3.1.2 Copy Across

This allows you to copy Forecast Method and related details from one IRC to another.

For example, if you have 10 IRCs enabled in the application and you must input only one set of assumptions, then copy those assumptions across all enabled IRCs, instead of having to input 10 full sets, thereby saving a significant amount of input time.

- **Flat Method**
 - a. Select Interest Rate Code using corresponding checkbox and select **Forecast Method** as **Flat**.
- NOTE** You must select a defined IRC. For more information, see the [Define](#) section of Interest Rate Curve.
- b. Click **Copy Across**.
 - c. Click **Apply Copy Across**.
 - d. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Direct Input**
 - a. Select Interest Rate Code using the corresponding checkbox and select **Forecast Method** as **Direct Input**.

NOTE You must select a defined IRC. For more information, see the [Define](#) Section of Interest Rate Curve.

- b. Click **Copy Across**.
- c. Click **Apply Copy Across**.
- d. You can click **Cancel Copy Across** to cancel the Copy Across function.

2.3.1.3 Restore Default

Use this action to reset previously entered details to Undefined status.

- **Flat Method**
 - a. Select Interest Rate Code using corresponding checkbox and select **Forecast Method** as **Flat**.
 - b. Click **Restore Default**.
 - c. The status of the Interest Rate Code is changed to **Undefined**.
- **Direct Input**
 - a. Select Interest Rate Code using corresponding checkbox and select **Forecast Method** as **Direct Input**.
 - b. Click **Restore Default**.
 - c. The status of the Interest Rate Code is changed to **Undefined**.

2.3.1.4 View

After defining Forecast Method and other parameters for an IRC you can view the forecasted interest rates by clicking this button.

- **Flat Method**
 - a. Select Interest Rate Code using corresponding checkbox and select **Forecast Method** as **Flat**.
 - b. Click **View** to see the output table.
- **Direct Input**
 - a. Select Interest Rate Code using corresponding checkbox and select **Forecast Method** as **Direct Input**.
 - b. Click **View** to see the Output Table.

2.3.2 Define Economic Indicator Forecast Rule

The Economic Indicators (EI) defined previously are listed under EI Section. The options under EI Forecast Method provide multiple ways to model the effects on Portfolio Cash Flows due to changes in inflation index and other micro or macro-economic parameters.

The following Economic Indicator Methods are available.

Table: Forecast Rate Rule – Economic Indicator Methods and Descriptions

Method	Description
Flat	Forecast no change in the EI rate for all dates beginning with the As-of Date.
Direct Input	Type-specific Economic Index Rates to use in forecasting.

Figure 3: Economic Indicator Forecast Rates

Following options are available for Economic Indicator Forecast Rule:

- [Define](#)
- [Copy Across](#)
- [Restore Default](#)
- [View](#)

2.3.2.1 Define

- **Flat Method**
 - Select Economic Indicator Code using corresponding checkbox, select **Forecast Method** as **Flat** and enter minimum rate.
 - Click **Define**. The status of Economic Indicator Code is changed to **Defined**.
- **Direct Input**
 - Select Economic Indicator Code using corresponding checkbox, select **Forecast Method** as **Direct Input** and enter minimum rate.
 - Click **Define**.
The **Direct Input** window is displayed:
 - Enter data and click **Apply**.
 - The status of Economic Indicator Code is changed to **Defined**.

2.3.2.2 Copy Across

This allows you to copy Forecast Method and related details from one Economic Indicator Code to another.

For example, if you have 10 Economic Indicator Codes enabled in the application and you must input only one set of assumptions, then copy those assumptions across all enabled Economic Indicator Codes, instead of having to input 10 full sets, thereby saving a significant amount of input time.

- **Flat Method**
 - a. Select Economic Indicator Code using corresponding checkbox and select **Forecast Method** as **Flat**.

NOTE	You must select a defined Economic Indicator Code. For more information, see the Define section of Economic Indicator.
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- b. Click **Copy Across**.
 - c. Click **Apply Copy Across**.
 - d. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Direct Input**
 - a. Select Economic Indicator Code using corresponding checkbox and select **Forecast Method** as **Direct Input**.

NOTE	You must select a defined Economic Indicator Code. For more information, see the Define section of Economic Indicator.
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- b. Click **Copy Across**.
 - c. Click **Apply Copy Across**.
 - d. You can click **Cancel Copy Across** to cancel the Copy Across function.

2.3.2.3 Restore Default

Use this action to reset previously entered details to **Undefined** status.

- **Flat Method**
 - a. Select Economic Indicator Code using the corresponding checkbox and select **Forecast Method** as **Flat**.
 - b. Click **Restore Default**.

- c. The status of the Economic Indicator Code is changed to **Undefined**.
- **Direct Input**
 - a. Select Economic Indicator Code using the corresponding checkbox and select **Forecast Method** as **Direct Input**.
 - b. Click **Restore Default**.
 - c. The status of the Economic Indicator Code is changed to **Undefined**.

2.3.2.4 View

After defining forecast method and other parameters for an Economic Indicator Code you can view the forecasted interest rates by clicking this button.

- **Flat Method**
 - a. Select Economic Indicator Code using corresponding checkbox and select **Forecast Method** as **Flat**.
 - b. Click **View** to see the output table.
- **Direct Input**
 - a. Select Economic Indicator Code using corresponding checkbox and select **Forecast Method** as **Direct Input**.
 - b. Click **View** to see the output table.

2.3.3 Map Behavior Pattern Rule

The Behavior Pattern Rule section allows you to map a existing Behavior Pattern Rule to current forecast scenario.

The **BP Rule** drop-down list shows the list of existing Behavior Pattern Rule. Select any behavior pattern rule to map with the current forecast scenario. To map a Behavior pattern to all the forecast scenarios, use the **Apply to All Scenarios** check box (applicable only to Asset Liability Management Cloud Service). For more information about the Behavior Pattern Rule, see the Behavior Pattern Rule section.

To map Behavior Pattern Rule with Forecast Scenario, follow these steps:


1. Navigate to **Forecast Rate Summary** Page.
2. Navigate to the **Behavior Pattern Rule** section.
3. Select Behavior Pattern Rule from **BP Rule To Be Applied To Current Scenario** drop-down list. Enable **Apply to All Scenarios** check box if you want to apply the selected Behavior Pattern Rule to all scenarios.

4. Click **Apply**.

2.4 View and Edit Forecast Rate Rule

You can view existing Forecast Rate Rule, and edit existing Forecast rules, provided you have Read/Write privileges.


To view and edit a Forecast Rate Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Rate**.
2. Search for a Rule. For further information, see the [Searching for Rules](#) Section.
3. Click  in the **Action** column and select **View/Edit** to open the rule you want to update.
4. Update the rule details.
5. Click **Apply** or **Save**, depending on the rule type.

2.5 Copy Forecast Rate Rule

You can copy Forecast Rate rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Forecast Rate Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Rate**.
2. Search for a Rule.
For more information, see the [Searching for Rules](#) Section.
3. Click  in the **Action** column and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the rule copy.
5. Enter a unique Name for the new rule.
6. Enter a brief Description of the rule.
7. Click **Save**.

2.6 Delete Forecast Rate Rule

You can delete Forecast Rate Rules that are no longer required.


NOTE

A Forecast Rate Rule cannot be retrieved after deletion.

Restrictions on deleting Rules are:

- You cannot delete Forecast Rate Rules if you have only Read privileges. Only users with read/write privileges and Rule owners can delete Rules.
- You cannot delete a Forecast Rate that has a dependency.


To delete a Forecast Rate, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Rate**.
2. Search for a Rule. For more information, see the [Searching for Rules](#) Section.
3. Click  in the **Action** column and select **Delete**.

2.7 Dependency Check

You can check dependencies for rules to know where a particular Forecast Rate Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Rate**.
2. Search for a rule. For further information, see the [Searching for Rules](#) Section.
3. Click  in the **Action** Column and select **Dependency Check** to the rule that you want to check for.

NOTE

This is functionality will be released in future.

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