Oracle Financial Services

Transfer Pricing Rules User Guide

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Oracle Financial Services Transfer Pricing Rules User Guide, Release 22.12.01

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Use help icons to access help in the application.

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- Training: Take courses on Oracle Cloud from Oracle University.

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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, and are also available in this guide.

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You can get support at My Oracle Support.

For accessibility support, visit Oracle Accessibility Learning and Support.

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

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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 would 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

See the following Documents:

- See What's New
- Getting Started with Funds Transfer Pricing Cloud Service

2
Transfer Pricing Rules

Transfer Pricing Rules allow you to specify methodologies for Transfer Pricing your Product Portfolio. A Transfer Pricing Rule may contain a Transfer Pricing Methodology defined for a particular product or a set of methodologies defined for all products (Dimension Members) in a particular Product Hierarchy.

The Transfer Pricing Rule is a key component of the Transfer Pricing Process. The Transfer Pricing Process uses the Transfer Pricing Methodologies contained in the Transfer Pricing Rules to generate Transfer Rates. Consequently, before processing information for a new period, you need to review and validate the assumptions contained in your Transfer Pricing Rules.

> **Note:**
>
> If Transfer Pricing Assumptions are managed at the Parent/Node level, new Product Dimension Members will automatically inherit TP Method assignments.

If new members are added to the applicable Product Dimension, you need to update your Transfer Pricing Rules by defining appropriate methodologies for the new products.

2.1 Overview of Transfer Pricing Methodologies and Rules

The Transfer Pricing Methodologies supported by Oracle Funds Transfer Pricing Cloud Service can be grouped into the following categories:

Cash Flow Transfer Pricing Methods: Cash Flow Transfer Pricing Methods are used to Transfer Price Instruments that amortize over time. They generate transfer rates based on the Cash Flow characteristics of the instruments.

To generate Cash Flows, the system requires a detailed set of transaction-level data attributes, such as, Origination Date, Outstanding Balance, Contracted Rate, and Maturity Date, which resides only in the Instrument Tables. Consequently, Cash Flow Methods apply only if the Data Source is Account Tables. Data stored in the Management Ledger Table reflects only accounting entry positions at a particular point in time and does not have the required financial details to generate Cash Flows, therefore, preventing you from applying Cash Flow Methodologies to this data.

The Cash Flow Methods are also unique in that Prepayment Rules are used only with these methods. You can select the required Prepayment Rule when defining a Transfer Pricing Process.

Oracle Funds Transfer Pricing Cloud Service supports the following Cash Flow Transfer Pricing Methods:

- Cash Flow: Average Life
- Cash Flow: Duration
- Cash Flow: Weighted Term

- Cash Flow: Zero Discount Factors

Non-Cash Flow Transfer Pricing Methods: These methods do not require the calculation of Cash Flows. While some of the non-Cash Flow Methods are available only with the Account Tables Data Source, some are available with both the Account and Ledger Table Data Sources.

Oracle Funds Transfer Pricing Cloud Service supports the following Non-Cash Flow Transfer Pricing Methods:

- Moving Averages
- Straight Term
- Spread from Interest Rate Code
- Spread from Note Rate
- Redemption Curve
- Tractor Method
- Caterpillar
- Weighted Average Perpetual
- Unpriced Account

Oracle Funds Transfer Pricing Cloud Service also allows Mid-period Repricing. This option allows you to take into account the impact of high market rate volatility while generating transfer prices for your products. However, the mid-period Repricing option applies only to Adjustable-Rate Instruments and is available only for certain Non-Cash Flow Transfer Pricing Methods.

Note on Bulk Updates versus Row by Row Processing: Any Transfer Pricing Method that does not refer to individual account characteristics utilizes a bulk update to assign a single transfer rate to a group of instrument records. Any TP Method that needs to refer to individual account characteristics to process will execute on a row-by-row basis. In general, Bulk updates are faster than row-by-row processing.

The following Transfer Pricing Methods, when not defined through a conditional assumption and not utilizing Mid-Period Repricing, use Bulk Updates:

- Redemption Curve (Assignment Date = As-of-Date only)
- Moving Average
- Spread from Note Rate
- Spread from IRC (Assignment Date = As-of-Date only)

All other Transfer Pricing Methods like Tractor, Caterpillar, and Weighted Average Perpetual are processed row-by-row. When Conditional Assumptions or Mid Period Repricing are used, processing will always be row-by-row, regardless of the Transfer Pricing Method Selection.

2.1.1 Cash Flow: Average Life

The Average Life Method determines the average life of the instrument by calculating the Effective Term required to repay half of the principal or nominal amount of the instrument. The Transfer Pricing Rate is equivalent to the rate on the associated Interest Rate Curve corresponding to the calculated term.

Figure 2-1 Cash Flow: Average Life

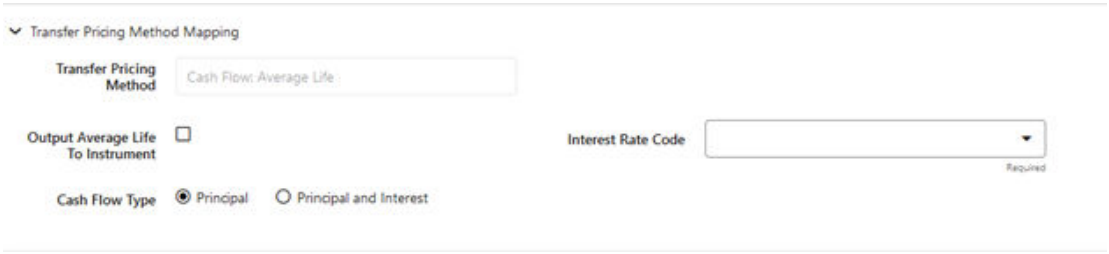


Figure 2-2 Cash Flow: Average Life Formula

$$\text{Average Life} = \sum_{i=1}^{n} \frac{P_i}{P} t_i$$

Where:

P is the principal

P_i is the principal repayment in coupon i, hence

$\frac{P_i}{P}$ is the fraction of the principal repaid in coupon i, and

t_i is the time from the start of coupon i

Oracle Funds Transfer Pricing Cloud Service derives the Average Life based on the Cash Flows of an instrument as determined by the characteristics specified in the Instrument Table and using your specified Prepayment Rate, if applicable. The average life formula calculates a single term, that is, a point on the yield curve used to transfer the price of the instrument being analyzed. The Average Life Calculation does not differentiate between fixed-rate and adjustable-rate instruments. It applies the same calculation logic to both. It computes the Average Life of the Loan (to maturity).

> **Note:**
>
> The Average Life Transfer Pricing Method provides the option to Output the result of the calculation to the Instrument Record (TP_AVERAGE_LIFE). This can be a useful option if you would like to refer to the Average Life as a reference term within an Adjustment Rule.

Users also have the choice to populate the TP_AVERAGE_LIFE column directly with a value computed outside of Oracle Funds Transfer Pricing Cloud Service. If this value is populated, the Funds Transfer Pricing Cloud Service Engine reads the TP_AVERAGE_LIFE and will look

up the Funds Transfer Pricing Rate for the given term. In this case, the Transfer Pricing Engine does not generate Cash Flows and will not re-compute the Average Life. It simply uses the value that is provided and lookup the appropriate Funds Transfer Pricing Rate from the specified TP Interest Rate Curve.

2.1.1.1 Cash Flow: Duration

The Duration Method uses the Macaulay Duration Formula:

Figure 2-3 Cash Flow: Duration Formula

$$\text{Duration} = \frac{\sum_{n=1}^{N}\left[\frac{CF_n}{(1+r)^m} \times t_n\right]}{\sum_{n=1}^{N}\left[\frac{CF_n}{(1+r)^m}\right]}$$

In this formula:

- N: Total number of payments from Start Date until the earlier of repricing or maturity
- CFn: Cash Flow (such as Regular Principal, Prepayments, and Interest) in period n
- r: Periodic Rate (Current Rate/Payments per year)
- m: Remaining term to Cash Flow/Active Payment Frequency
- tn: Remaining term to Cash Flow n, expressed in years

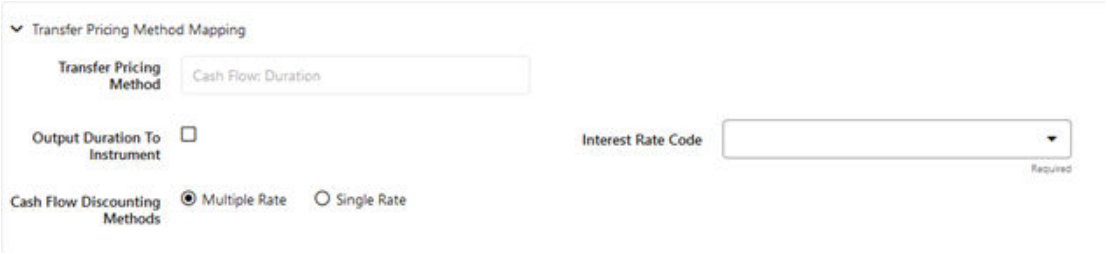
Oracle Funds Transfer Pricing Cloud Service derives the Macaulay duration based on the Cash Flows of an instrument as determined by the characteristics specified in the Instrument Table and using your specified Prepayment Rate, if applicable. The Duration Formula calculates a single term, that is, a point on the yield curve used to transfer price the instrument.

- Within the Duration Calculation, the discount rate or current rate, r, is defined in one of three ways, based on how the methodology is set up by the user:
- The current rate is defined as the Current Net Rate if the processing option, "Model with Gross Rates" is not selected and the Current Gross Rate if the option is selected. The current rate is used as a constant discount rate for each cash flow.
- The user may directly input while defining the TP Rule, a constant rate to use for discounts. If specified, this rate is used as a constant discount rate for each flow.
- The user can select to discount the Cash Flows using spot rates from a selected Interest Rate Curve. With this approach, a discount rate is read from the selected interest rate curve corresponding to the term of each cash flow.

Note:

NOTE: The Duration Transfer Pricing Method provides the option to Output the result of the calculation to the instrument record (TP_DURATION). This can be a useful option if you would like to refer to the duration as a reference term within an Adjustment Rule.

Figure 2-4 Cash Flow: Duration



Users also have the choice to populate the TP_DURATION column directly with a value computed outside of Oracle Funds Transfer Pricing Cloud Service. If this value is populated, the FTP engine reads the TP_DURATION and will look up the FTP Rate for the given term. In this case, the TP Engine does not generate Cash Flows and will not re-compute the DURATION. It simply uses the value that has been provided and look up the appropriate FTP Rate from the specified TP Interest Rate Curve.

2.1.2 Cash Flow: Weighted Term

The Weighted Term method builds on the theoretical concepts of duration. You can use the Cash flow Duration TP Method approach to the Cash Flow Weighted Term Method. Based on that, the following Cash Flow Discounting Methods are used:

- Multiple Rate
- Single Rate

For more information, see the Working with Transfer Pricing Rules Section.

As shown earlier, duration calculates a weighted-average term by weighting each period, n, with the present value of the Cash Flow (discounted by the rate on the instrument) in that period.

Since the goal of the Weighted Term Method is to calculate a Weighted Average Transfer Rate, it weights the transfer rate in each period, yn, by the present value for the Cash Flow of that period. Furthermore, the transfer rates are weighted by an additional component, time, to account for the length of time over which a transfer rate is applicable. The time component accounts for the relative significance of each strip Cash Flow to the total transfer pricing interest income/expense. The total transfer pricing interest income/expense on any cash flow is a product of that Cash Flow, the transfer rate, and the term. Long-term Cash Flows have a relatively larger impact on the average transfer rate. The Weighted Term method, with Discounted Cash Flow option selected, can be summarized by the following formula:

Figure 2-5 Cash Flow: Weighted Term Formula

$$\text{Weighted-Average} = \bar{y} = \frac{\sum_{n=1}^{N}\left[y_n \times \frac{CF_n}{(1+r)^m} \times t_n\right]}{\sum_{n=1}^{N}\left[\frac{CF_n}{(1+r)^m} \times t_n\right]}$$

In this formula:

- N: Total number of payments from Start Date until the earlier of repricing or maturity
- CFn: Cash Flow (such as Regular Principal, Prepayments, and Interest) in period n
- r: Periodic Rate (Current Rate/Payments per year)
- m: Remaining term to Cash Flow n/active payment frequency
- tn: Remaining term to Cash Flow n, expressed in years
- yn: Transfer Rate in period n

Within the Cash Flow Weighted Term method definition screen, users can select the Cash Flow type as either Principal + Interest (the default selection) or Principal Only. This selection impacts the CFn in the above formula.

Additionally, users can choose whether or not to discount the cash flows as described above. If the "Cash Flow" option is selected rather than "Discounted Cash Flow", the following simplified formula is applied:

Figure 2-6 Cash Flow: Weighted Term Formula without Discounted Cash Flow

$$\text{Weighted Average} - \bar{y} = \left(\frac{\Sigma_{n=1}^{N}\left[y_n \times CF \times t_n\right]}{\Sigma_{n-1}^{N}\left[CF \times t_n\right]}\right)$$

For this method, the following options are also provided:

- Cash Flow Weighted Rate
- Cash Flow and Terms Weighted Rate (by default, this will remain selected for all existing definitions)

If Transfer Rate needs to be weighed only by Cash Flow rather than both Cash Flow and the Cash Flow Weighted Rate can be selected, and the system will not consider terms (tn) for calculations.

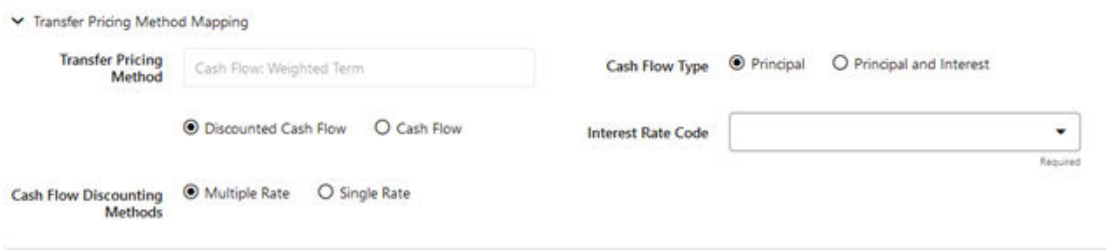
If Cash Flow and Terms Weighted Rate is selected, then both terms, as well as Cash Flow, will be used for Weighing Transfer Rate as per calculations shown above.

The discount rate or current rate, r, is defined in one of three ways, based on how the methodology is set up by the user:

- The current rate is defined as the current net rate from the instrument record unless the processing option, "Model with Gross Rates" is selected, in which case, the current gross rate is used. The current rate is used as a constant discount rate for each cash flow.
- The user may directly input while defining the Transfer Pricing Rule, a single constant rate to use for discounts. If specified, this rate is used as a constant discount rate for each cash flow.
- The user can select to discount the cash flows using spot rates from a selected Interest Rate Curve. With this approach, a discount rate is read from the selected Interest Rate Curve corresponding to the term of each Cash Flow.

> **Note:**
>
> When validating the Cash Flow Weighted Term Transfer Rate, FE 492 (Discount Factor) from detail Cash Flow output is useful. FE 490 (Discount Rate) however, may be incorrect in the detailed Cash Flow output if the Current Net Rate is specified as the discount rate. This condition does not affect the accuracy of the calculated discount factor, only the Audit Table Rate Output for FE 490. If multiple rate discounting (based on IRC) or a single custom rate is specified, then FE 490 will be correct.

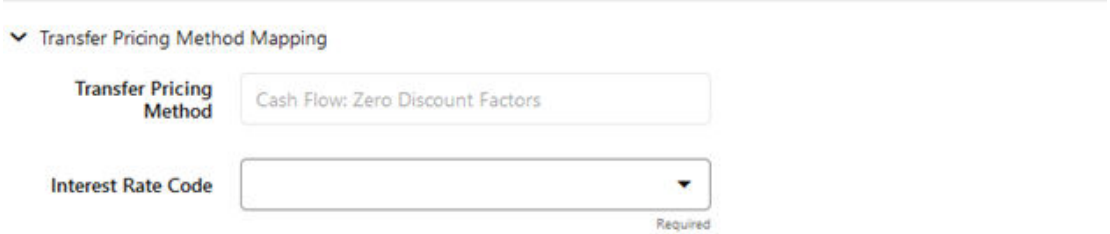
Figure 2-7 Cash Flow: Weighted Term



2.1.3 Cash Flow: Zero Discount Factors

The Zero Discount Factors (ZDF) Method takes into account common market practices in valuing fixed-rate amortizing instruments. For example, all Treasury Strips are quoted as discount factors. A discount factor represents the amount paid today to receive $1 at maturity date with no intervening Cash Flows (that is, zero-coupons).

Figure 2-8 Cash Flow: Zero Discount Factors



The Treasury Discount Factor for any maturity (as well as all other rates quoted in the market) is always a function of the discount factors with shorter maturities. This ensures that no risk-free arbitrage exists in the market. Based on this concept, one can conclude that the rate quoted for fixed-rate amortizing instruments is also a combination of some set of market discount factors. Discounting the monthly Cash Flows for that instrument (calculated based on the constant instrument rate) by the market discount factors generates the par value of that instrument (otherwise there is arbitrage).

ZDF starts with the assertion that an institution tries to find a funding source that has the same principal repayment factor as the instrument being funded. In essence, the institution strip funds each principal flow using its funding curve (that is, the Transfer Pricing Yield Curve). The difference between the interest flows from the instrument and its funding source is the net income from that instrument.

Next, ZDF tries to ensure consistency between the original balance of the instrument and the amount of funding required at origination. Based on the Transfer Pricing Yield used to fund the instrument, the ZDF solves for a Single Transfer Rate that would amortize the funding in two ways:

- Its principal flows match those of the instrument.
- The Present Value (PV) of the funding cash flows (that is, the original balance) matches the original balance of the instrument.

ZDF uses zero-coupon factors (derived from the original transfer rates, see the example below) because they are the appropriate vehicles in strip funding (that is, there are no intermediate Cash Flows between the origination date and the date the particular Cash Flow is received). The zero-coupon yield curve can be universally applied to all kinds of instruments.

This approach yields the following formula to solve for a weighted average transfer rate based on the payment dates derived from the instrument's payment data.

Figure 2-9 Zero Discount Factors = y =

$$100 \times \left[\frac{B_0 - \sum_{n=1}^{N}(B_{n-1} \times DTP_n) + \sum_{n=1}^{N}(B_n \times DTP_n)}{\sum_{n=1}^{N}(B_{n-1} \times DTP_n)} \right] \times p$$

In this formula:

- B0: Beginning balance at the time, 0
- Bn-1: Ending balance in the previous period
- Bn: Ending balance in the current period
- DTPn: Discount factor in period n based on the TP yield curve
- N: Total number of payments from Start Date until the earlier of repricing or maturity
- p: Payments per year based on the payment frequency; (for example, monthly payments gives p=12)

This table illustrates how to derive Zero Coupon Discount factors from monthly pay Transfer Pricing Rates.

Table 2-1 Deriving Zero-Coupon Discount Factors: An Example

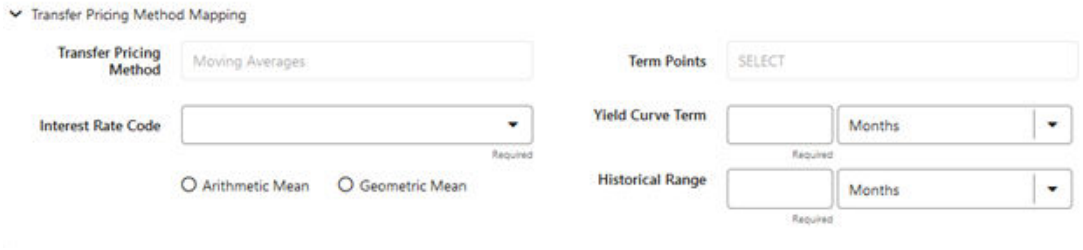
Term in Months	(a) Monthly Pay Transfer Rates	(b) Monthly Transfer Rate: (a)/12	(c) Numerator (Monthly Factor): 1+ (b)	(d) PV of Interest Payments: (b)*Sum((f)/ 100 to current row	(e) Denominator (1 - PV of Int Pmt): 1 - (d)	(f) Zero-Coupon Factor: [(e)/(c) * 100
1	3.400%	0.283%	1.002833	0.000000	1.000000	99.7175
2	3.500%	0.292%	1.002917	0.002908	0.997092	99.4192
3	3.600%	0.300%	1.003000	0.005974	0.994026	99.1053

> **Note:**
>
> For the ZDF method, the discount factor used for discounting cash flows is output as FE 490, after multiplied by 100.

2.1.3.1 Moving Averages

Under this method, a user-definable moving average of any point on the Transfer Pricing Yield Curve can be applied to a transaction record to generate the transfer prices. For example, you can use a 12-month moving average of the 12-month rate to transfer price of a particular product.

Figure 2-10 Moving Averages



The following options become available on the UI along with Arithmetic and Geometric mean, with this method:

- Interest Rate Code: Select the Interest Rate Code to be used as the Yield Curve to generate transfer rates.
- Assignment Date: The Assignment Date allows you to choose the date from which the Moving Average will be calculated. Choices available are the As of Date, Last Repricing Date, Origination Date, Commitment Start Date, TP Effective Date, or Adj Effective Date. If the selected date is null or 01-Jan-1900, then As of Date will be used as fallback logic.
- Yield Curve Term: The Yield Curve Term defines the point on the Interest Rate Code that is used.
- Historical Range: The Historical Term defines the period over which the average is calculated.

The following table illustrates the difference between the Yield Curve and Historical Terms.

Table 2-2 Yield and Historical Terms: An Example

Moving Average	Yield Curve Term	Historical Range
Six-month moving average of the 1-year rate	1 year (or 12 months)	6 months
Three-month moving average of the 6-month rate	6 months	3 months

The range of dates is based on the As-of-Date minus the Historical Term plus one, because the Historical Term includes the As-of-Date.

Table 2-3 Assignment Date and Transfer Rate Calculation

Icons	Description
As Of Date	If the As-of-Date is Nov 21, the Yield Curve Term selected is Daily, and the Historical Term selected is 3 Days, then, the system calculates the three-day moving average based on the rates for Nov 19, 20, and 21. The same logic applies to monthly or annual yield terms. As-of-Date is available only if the selected source is Ledger Table.
Last Repricing Date	If the Last Repricing Date is Nov 21, the Yield Curve Term selected is Daily, and the Historical Term selected is 3 Days, then, the system calculates the three-day moving average based on the rates for Nov 19, 20, and 21. The same logic applies to monthly or annual yield terms.
Origination Date	If the Origination Date is Nov 21, the Yield Curve Term selected is Daily, and the Historical Term selected is 3 Days, then, the system calculates the three-day moving average based on the rates for Nov 19, 20, and 21. The same logic applies to monthly or annual yield terms.
Commitment Start Date	If the Commitment Start Date is Nov 21, the Yield Curve Term selected is Daily, and the Historical Term selected is 3 Days, then, the system calculates the three-day moving average based on the rates for Nov 19, 20, and 21. The same logic applies to monthly or annual yield terms.
TP Effective Date	If the TP Effective Date is Nov 21, the Yield Curve Term selected is Daily, and the Historical Term selected is 3 Days, then, the system calculates the three-day moving average based on the rates for Nov 19, 20, and 21. The same logic applies to monthly or annual yield terms.

Table 2-3 (Cont.) Assignment Date and Transfer Rate Calculation

Icons	Description
Adjustment Effective Date	If the Adjustment Effective Date is Nov 21, the Yield Curve Term selected is Daily, and the Historical Term selected is 3 Days, then, the system calculates the three-day moving average based on the rates for Nov 19, 20, and 21. The same logic applies to monthly or annual yield terms.

> **Note:**
>
> If any of the above date values are 01-Jan-1900 or blank or null, then the Oracle Funds Transfer Pricing Cloud Service engine considers the As-of-Date for Transfer Rate calculation.

After you select the date, Oracle Funds Transfer Pricing Cloud Service computes the Historical Rate using the selected date. Oracle Funds Transfer Pricing Cloud Service takes the values of the yield curve points that fall within that range and does a straight average.

> **Note:**
>
> The Moving Averages method applies to either data source: Management Ledger Table or Account Tables.

2.1.4 Straight Term

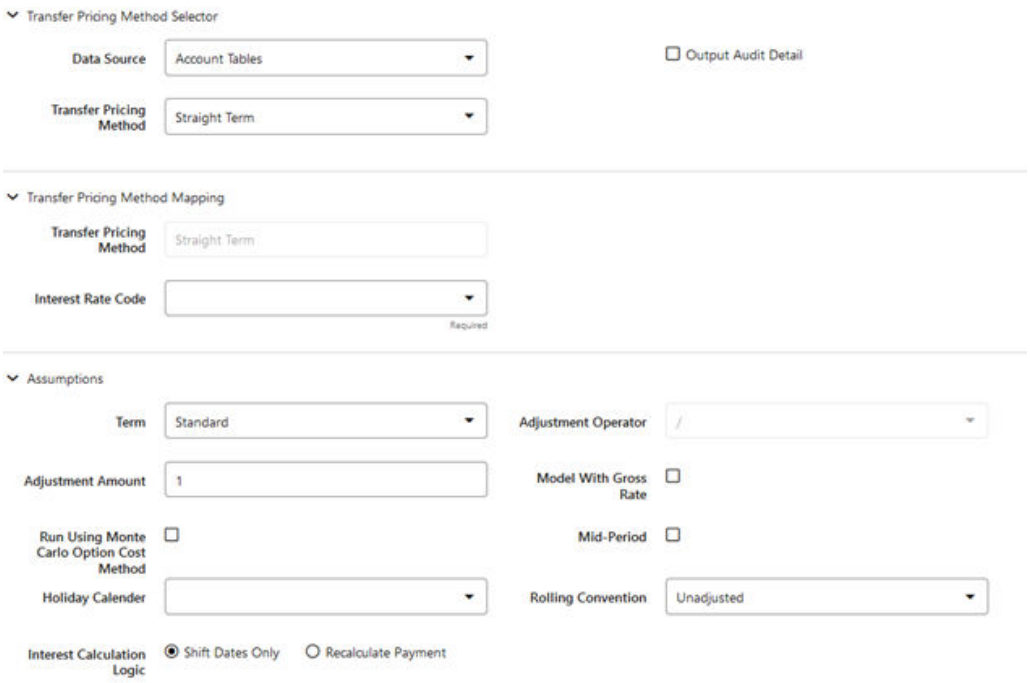
When you select the Straight Term method and Standard Term Approach, the Oracle Funds Transfer Pricing Cloud Service derives the Transfer Rate using the last Repricing Date and the next Repricing Date for adjustable-rate instruments, and the Origination Date and the Maturity Date for fixed-rate instruments.

- Standard Calculation Mode:
  - For Fixed Rate Products (Repricing Frequency = 0), use Yield Curve Date = Origination Date, Yield Curve Term = Maturity Date-Origination Date.
  - For Adjustable Rate Products (Repricing Frequency > 0)
  - For loans still in the tease period (tease end date > As-of-Date, and Tease End Date > Origination Date), use Origination Date and Tease End Date - Origination Date.
  - For loans not in the tease period, use the Last Repricing Date and Repricing Frequency.

> **Note:**
>
> For loans in the Tease period, the Next Reprice Date should reflect the end of the Tease Period and the Reprice Frequency should reflect the expected Reprice Frequency after the tease period ends.

- Remaining Term Calculation Mode:
  - For Fixed Rate Products, use As-of-Date and Maturity - As-of-Date.
  - For Adjustable Rate Products, use As-of-Date and Next Repricing Date - As-of-Date.

Figure 2-11 Straight Term



In addition to the standard logic used for determining the appropriate “Term”, users also have the option to select either Original Term or Repricing Frequency and also have the option to modify these terms using simple mathematical operators. These options can be useful in cases where the straight term method should be applied to the same record under different circumstances. For example, for calculating the base rate on an adjustable-rate instrument, the standard approach should be used. For the same instrument, users may further want to use the entire Original Term for applying a liquidity premium or other add-on rate. To support the second case, we give the option to directly specify the term to be used, and we further provide the option to modify the term using simple operators, such as +, -, *, /.

The following options become available in the application with this method:

- **Term**: Select from Standard, Original Term, or Reprice Frequency. Standard is the default selection and the resulting Term will follow the above logic. The Original

Term and Reprice Frequency options allow users to override the standard logic and specify which term to use.

- **Adjustment Operator**: When either Original Term or Reprice Frequency is selected as the Term, the Adjustment Operator becomes active. The term Adjustment is optional and gives users the ability to modify the term
- **Adjustment Amount**: This input works together with the Adjustment Operator to indicate how the term should be modified.
- **Interest Rate Code**: Select the Interest Rate Code to be used for Transfer Pricing the account.
- **Mid-Period Repricing Option**: Select the check box beside this option to invoke the Mid-Period Repricing option.
- **Holiday Calendar**: Select whether a Holiday Calendar is applicable for calculating the charges/credits or for calculating Economic Value.
- **Rolling Convention**: Select the appropriate Business Day Rolling Convention if a Holiday Calendar is selected.
- **Interest Calculation Logic**: Select the appropriate option to indicate how the interest payment should be adjusted when a Holiday Date is encountered.

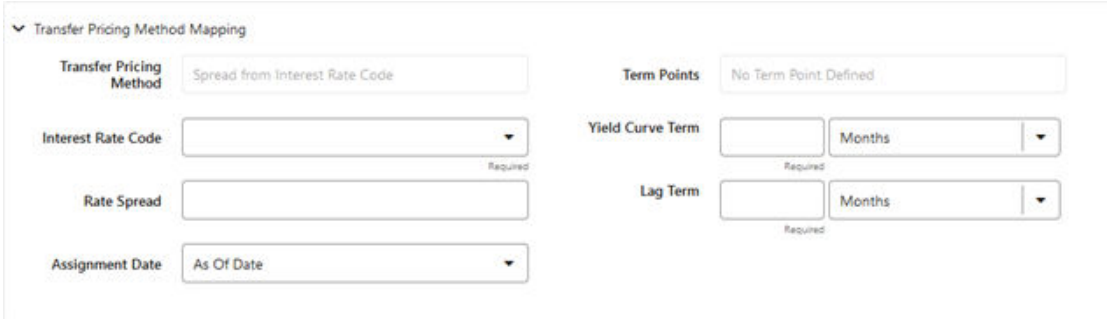
> **Note:**
>
> The Straight Term method applies only to accounts that use Account Tables as the Data Source.

For more information, see the Working with Transfer Pricing Rules section.

2.1.5 Spread from Interest Rate Code

Under this method, the Transfer Rate is determined as a fixed spread from any point on an Interest Rate Code.

Figure 2-12 Spread from Interest Rate Code



The following options become available on the application with this method:

- **Interest Rate Code**: Select the Interest Rate Code for transfer pricing the account.

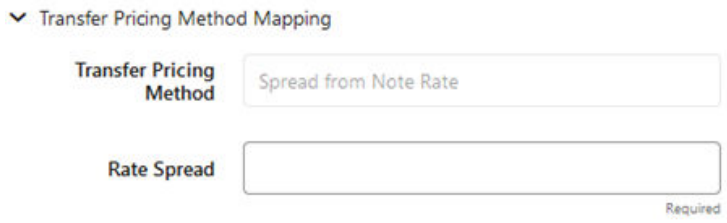
- **Yield Curve Term**: The Yield Curve Term defines the point on the Interest Rate Code that will be used to transfer price. If the Interest Rate Code is a single rate, the Yield Curve Term is irrelevant. Select Days, Months, or Years from the drop-down list, and enter the number.
- **Lag Term**: While using a Yield Curve from an earlier date than the Assignment Date, you need to assign the Lag Term to specify a length of time before the Assignment Date.
- **Rate Spread**: The transfer rate is a fixed spread from the rate on the Transfer Rate Yield Curve. The Rate Spread field allows you to specify this spread.
- **Assignment Date**: The Assignment Date allows you to choose the date for which the Yield Curve values are to be picked up. Choices available are the As-of-Date, Last Repricing Date, Origination Date, Adjustment Effective Date, or TP Effective Date.
- **Mid-Period Repricing Option**: Select the check box beside this option to invoke the Mid-Period Repricing option.

> **Note:**
>
> The Spread From Interest Rate Code Method applies to either data source: Ledger Table or Account Tables.

2.1.6 Spread from Note Rate

To generate transfer prices using this method, you need to provide just one parameter: a Rate Spread. This spread is added or subtracted from the Coupon Rate of the underlying transaction to generate the final transfer rate for that record.

Figure 2-13 Spread from Note Rate



While entering the Rate Spread, ensure to input it with the appropriately positive or negative sign, as illustrated in the following table. The first row describes a situation where you are transfer pricing an asset and want to have a positive matched spread for it (the difference between the contractual rate of the transaction and the transfer rate is positive). Here, you should enter a negative rate spread.

Table 2-4 Example of Rate Spread

Account Type	Matched Spread	Sign of Rate Spread
Asset	Negative	Positive (Profitable)
Asset	Positive	Negative (Unprofitable)
Liability or Equity	Positive	Positive (Profitable)
Liability of Equity	Negative	Negative (Unprofitable)

The following option becomes available in the application when you select this method:

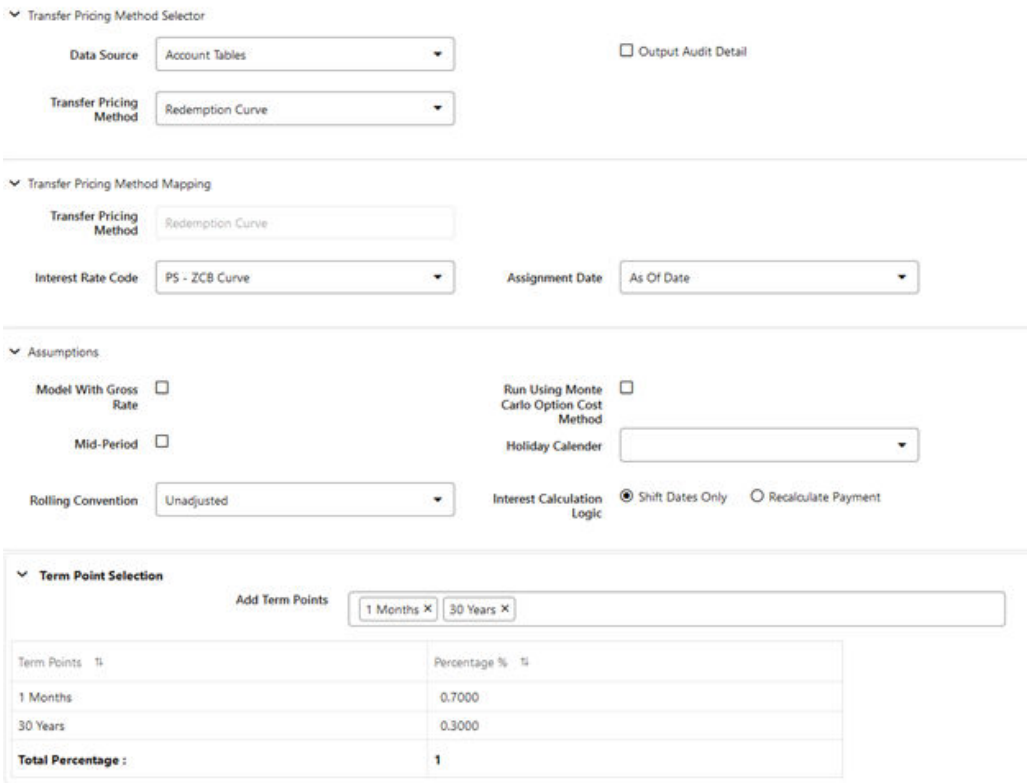
- **Mid-Period Repricing Option**: Select the check-box beside this option to invoke the Mid-Period Repricing option.

> **Note:**
>
> The Spread From Note Rate Method applies only to accounts that use Account Tables as their data source.

2.1.6.1 Redemption Curve

This method allows you to select Multiple-Term Points from your Transfer Pricing Yield Curve and calculate an average transfer rate based on the weights you assign to each Term Point.

Figure 2-14 Redemption Curve



The following options become available in the application with this method:

- **Interest Rate Code**: Select the Interest Rate Code, which you want to use as the Transfer Pricing Yield Curve.
- **Assignment Date**: The Assignment Date allows you to choose the date for which the Yield Curve values will be picked up. Choices available are the As-of-Date, Last Repricing Date, Origination Date, Adjustment Effective Date, or TP Effective Date.
- **Percentages or Term Points**: See Redemption Curve.
- **Mid-Period Repricing Option**: Select the check-box beside this option to invoke the Mid-Period Repricing option.

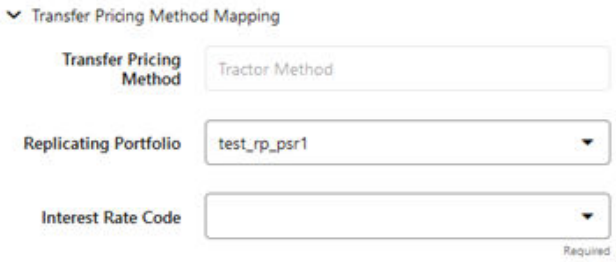
> **Note:**
>
> The Redemption Curve method applies to either data source: Ledger Table or Account Tables.

2.1.7 Tractor Method

The Tractor Method extends the concept of Strip Funding to instruments that do not have contractual Cash Flows. These products are known as perpetual or non-maturity products and hence do not generate contractual Cash Flows. The process of

determining transfer rates requires adopting the strip funding approach by splitting these products into Core and Volatile portions based on statistically established Behavioral Profiles. With this method, the volatile portion is considered to have an overnight maturity and the core portion is assigned a longer maturity (through Replicating Portfolio) which is comprised of a series of balance strips corresponding to the maximum tenor of the portfolio (on the origination of the portfolio, original strips will have shorter maturities). Each strip is assigned a transfer rate corresponding to its Origination Date and corresponding Term. The historical, active strips are retained for the portfolio and the Portfolio Transfer Rate is determined based on the Weighted Average Transfer Rate of the strips comprising the portfolio. The Weighted Average Rate from the strip portfolio is written back to all instrument records that are mapped to this portfolio through the Transfer Pricing Rule.

Figure 2-15 Tractor Method



The characteristics of the replicating portfolio used by the Tractor Method are defined through Replicating Portfolio Module. The following example illustrates the behavior of a small 3-day portfolio rolling across 4 days.

Table 5:

Table 2-5 Replicating Portfolio

31-Jan-11						
Strip	**Start**	**Maturity**	**Balance**	**TP Rate**	**Date Rolled**	**Comment**
0A	31-Jan-11	1-Feb-11	100	5.00%	1-Feb-11	
0B	31-Jan-11	2-Feb-11	100	5.10%	3-Feb-11	
0C	31-Jan-11	3-Feb-11	100	5.20%	3-Feb-11	Matures and rolls to 3A
1A	1-Feb-11	4-Feb-11	100	5.30%		
2A	2-Feb-11	7-Feb-11	100	5.40%		
3A	3-Feb-11	8-Feb-11	100	5.50%		Rollover strip, TP's by the engine
Day 1						
1-Feb-11	Daily Rollover					
Strip	Start	Maturity	Balance	Rate	Date Rolled	Comment
0A	31-Jan-11	1-Feb-11	100	5.00%	1-Feb-11	Matures and rolls to 1A
0B	31-Jan-11	2-Feb-11	100	5.10%		

Table 2-5 (Cont.) Replicating Portfolio

31-Jan-11						
Strip	**Start**	**Maturity**	**Balance**	**TP Rate**	**Date Rolled**	**Comment**
0C	31-Jan-11	3-Feb-11	100	5.20%		
1A	1-Feb-11	4-Feb-11	100	5.30%		Rollover strip, TP's by the engine
	Day 1 Maturity Profile					
	Total	Day 1	Day 2	Day 3		
		2-Feb-11	3-Feb-11	4-Feb-11		Tractor TP Rate
	300	100	100	100		5.20%
Day 2						
2-Feb-11	Daily Rollover					
0A	31-Jan-11	1-Feb-11	100	5.00%	1-Feb-11	
0B	31-Jan-11	2-Feb-11	100	5.10%	2-Feb-11	Matures and rolls to 2A
0C	31-Jan-11	3-Feb-11	100	5.20%		
1A	1-Feb-11	4-Feb-11	100	5.30%		
2A	2-Feb-11	7-Feb-11	100	5.40%		Rollover strip, Transfer Priced by the engine
	Day 2 Maturity Profile					
	Total	Day 1	Day 2	Day 3		
		3-Feb-11	4-Feb-11	7-Feb-11		Tractor TP Rate
	300	100	100	100		5.30%
Day 3						
3-Feb-11	Daily rollover, and new business (reduction of 530)					
0A	31-Jan-11	1-Feb-11	100	5.00%	1-Feb-11	
0B	31-Jan-11	2-Feb-11	100	5.10%	3-Feb-11	
0C	31-Jan-11	3-Feb-11	100	5.20%	3-Feb-11	Matures and rolls to 3A
1A	1-Feb-11	4-Feb-11	100	5.30%		
2A	2-Feb-11	7-Feb-11	100	5.40%		
3A	3-Feb-11	8-Feb-11	100	5.50%		Rollover strip, Transfer Priced by the engine

Table 2-5 (Cont.) Replicating Portfolio

31-Jan-11						
Strip	**Start**	**Maturity**	**Balance**	**TP Rate**	**Date Rolled**	**Comment**
3B	3-Feb-11	4-Feb-11	10	5.50%		New Business strip, Transfer Priced by the engine
3C	3-Feb-11	7-Feb-11	10	5.50%		New Business strip, Transfer Priced by the engine
3D	3-Feb-11	8-Feb-11	10	5.50%		New Business strip, Transfer Priced by the engine
	Day 3 Maturity Profile					
	Total	Day 1	Day 2	Day 3		
		4-Feb-11	7-Feb-11	8-Feb-11		Tractor TP Rate
	270	90	90	90		5.39%
Day 4						
4-Feb-11	Daily rollover					
0A	31-Jan-11	1-Feb-11	100	5.00%	1-Feb-11	
0B	31-Jan-11	2-Feb-11	100	5.10%	2-Feb-11	
0C	31-Jan-11	3-Feb-11	100	5.20%	3.-Feb-11	
1A	1-Feb-11	4-Feb-11	100	5.30%	4-Feb-11	Matures and rolls to 4A
2A	2-Feb-11	7-Feb-11	100	5.40%		
3A	3-Feb-11	8-Feb-11	100	5.50%		
3B	3-Feb-11	4-Feb-11	-10	5.50%	4-Feb-11	Matures and rolls to 4A
3C	3-Feb-11	7-Feb-11	-10	5.50%		
3D	3-Feb-11	8-Feb-11	-10	5.50%		
4A	4-Feb-11	9-Feb-11	90	5.60%		Rollover strip, Transfer Priced by the engine
	Day 4 Maturity Profile					
	Total	Day 1	Day 2	Day 3		
		7-Feb-11	8-Feb-11	9-Feb-11		Tractor TP Rate
	270	90	90	90		5.50%

This example assumes a business day calendar is enabled with the following business days defined:

- Business Day
- Calendar
- 31-Jan-11
- 1-Feb-11
- 2-Feb-11
- 3-Feb-11
- 4-Feb-11
- 7-Feb-11
- 8-Feb-11
- 9-Feb-11
- 10-Feb-11
- 11-Feb-11

2.1.8 Caterpillar

The Caterpillar Method extends the concept of Strip Funding to instruments that do not have contractual Cash Flows. These products are known as Perpetual or Non-Maturity Products and therefore do not generate contractual Cash Flows. The process of determining Transfer Rates requires adopting the 'Strip Funding Approach' by splitting these products into 'Core' and 'Volatile' portions based on statistically established Behavioral Profiles. With this approach, the volatile portion may be considered as an overnight funding strip and the core portion can be dealt with by an assumed maturity structure defined through a Behavior Pattern. For example, statistical analysis may imply that the Savings Account portfolio behaves 20% as volatile and 80% as the core of which the maturity is likely to be 3 months. Therefore, the Funding Strips that would get created are 20% 1 month, and 80% 3 months.

Figure 2-16 Caterpiller

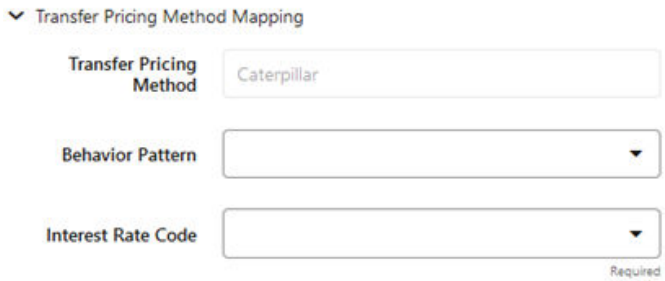


Table 2-6 BEHAVIORAL PATTERN: 20% 1 Month; 80% 3 Months

		Production			IRC			
Period	**EOP Balance**	**1M**	**2M**	**3M**	**1M**	**2M**	**3M**	**TP Rate**
Month 1	4000	800		3200	4.00%	4.25%	4.50%	4.40%
Month 2	7000	760	3200	3040	4.50%	4.75%	5.00%	4.72%
Month 3	8500	3652	3040	1808	5.00%	5.25%	5.50%	4.92%
Month 4	9000	3870	1808	3322	5.50%	5.75%	6.00%	5.52%
Month 5	8000	2382	3322	2296	6.00%	6.25%	6.50%	6.03%

In the example, we assume that once a funding strip is assigned a certain Transfer Rate based on its original term, the rate remains constant until the strip matures. Each strip is funded for the original term based on the yield curve in effect at the start of the strip. In month 4, when the balance is 9000, the strips still outstanding from earlier months are 3040 as a 3-month term strip, created in month 2 at 5% having a remaining term 1-month; (3870-3040) 1-month term strip created in month 4, 1808 3-month term strip created in month 3 with the 2-month remaining term, and 3322 3-month term strip created in month 4. The weighted average rate of these strips comes to 5.52% as the example shows.

In summary:

Month 4 Transfer Rate = (3040*5% + (3870-3040)*5.5% + 1808*5.5% + 3322*6%) / 9000 = 5.52%

> **Note:**
>
> The Caterpillar Method must not be run more than once for a given date as this may corrupt the historical data. The strip data for this method is stored in the database in the CATERPILLAR_INTER_NEXTGEN table.

2.1.9 Weighted Average Perpetual

This method calculates the simple Weighted Average of the applicable balance based on maturity bands defined through a Behavior Pattern. In the following example, the end-of-period balance as of Jan 31 is split into Core and Volatile strips, and the relevant rates are applied to arrive at the Weighted Average Transfer Rate.

Figure 2-17 Weighted Average Perpetual

Table 7:

Table 2-7 BEHAVIORAL PATTERN: 20% 1 Month; 80% 3 Months

Run Date	EOP Balance	1M Strip	3M Strip	1M Rate	3M Rate	TP Rate
Jan 31	100000	20000	80000	3.10%	3.50%	3.42%
Feb 28	200000	40000	160000	3.25%	3.60%	3.53%
Mar 31	300000	60000	240000	3.20%	3.55%	3.48%

Transfer Rate = (20000*3.10% + 80000*3.50%) / 100000 = 3.42%

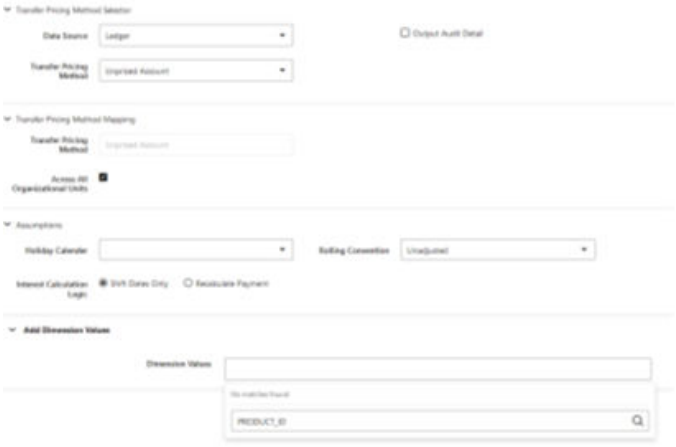
- **Behavior Pattern**: Select the Behavior Pattern that is associated with the Product/ Currency combination being defined.
- **Interest Rate Code**: Select the Interest Rate Code, which you want to use as the Transfer Pricing Yield Curve.

> **Note:**
>
> The Weighted Average Perpetual method applies to both Instrument Balances and Ledger Balances.

2.1.10 Unpriced Account

Under the Unpriced Account Method, the transfer rate for the account is defined as the Weighted Average of the Product Dimension Members. While using the unpriced account methodology, you can specify whether the Weighted Average of transfer rates has to be taken across all organizational units or for accounts only within that organizational unit.

Figure 2-18 Unpriced Account



The following options become available in the application with this method:

- **Add Dimension Values**: This allows you to select the Product Dimension Members whose Weighted Average Transfer Rate will be assigned to the product being defined.

> **Note:**
>
> You should not base an unpriced account on another unpriced account.

- **Across all Organization Units**: This allows you to specify whether the Weighted Average of transfer rates should be taken across all organizational units. If this option is not selected, the Weighted Average Rate will be calculated for each Org Unit. To calculate for each individual Org Unit, you must also select the Org Unit Dimension under Migration Dimensions in the Transfer Pricing Process.

> **Note:**
>
> The Unpriced Account Method applies only to accounts that use the Ledger Table as their Data Source.
> Users must provide assumptions on the Transfer Pricing Process, "Migration" Screen, choosing the applicable Dimensions, while using the Unpriced Account Method irrespective of Ledger Migration being selected or not.
>
> If any Dimension is selected as Migration Dimension like GL Account ID, Weighted Average Rate would consider that too and WAR/Charge credit will only be calculated for combinations that are present in both Source and Target Product IDs'.
>
> If Source and Target Product IDs' have different values for Migration Dimensions like GL Account ID, and then do not select that dimension (GL Account ID) as Migration Dimension."
>
> For more information on Migration screen parameters, see the Transfer Pricing Process chapter.

2.1.11 Transfer Pricing Methods and the Mid-Period Repricing Option

The Mid-Period Repricing option allows you to take into account the impact of high market rate volatility while generating transfer rates for your products. However, the Mid-Period Repricing option applies only to adjustable-rate instruments and is available only for the following non-Cash Flow Transfer Pricing Methods:

- Straight Term
- Spread from Interest Rate Code
- Spread from Note Rate
- Redemption Curve

The rationale behind Mid-Period Repricing is as follows. If you do not select the Mid-Period Repricing option, Oracle Funds Transfer Pricing Cloud Service computes the transfer rate for an adjustable-rate instrument based upon its last Repricing Date. The assumption behind this method of calculation is that the input transfer rate for a month should be the daily average transfer rate for that entire month. Consequently, all instruments repricing in that month derive their transfer rates from the same (average) Transfer Pricing Yield Curve. However, this approach misstates the transfer rate, in periods when the interest rate level has moved substantially since the last repricing.

Take the example of a one-year adjustable-rate loan, which reprices on the 15th of the month, and that transfer rates have moved up 200 basis points since the last reprice. In this case, the theoretically pure transfer rate for the first half of the month should be 200 basis points lower than the transfer rate for the second half of the month. To apply such theoretical accuracy to your transfer pricing results, you should select the Mid-Period Repricing option.

2.1.12 Defining Transfer Pricing Methodologies Using Node Level Assumptions

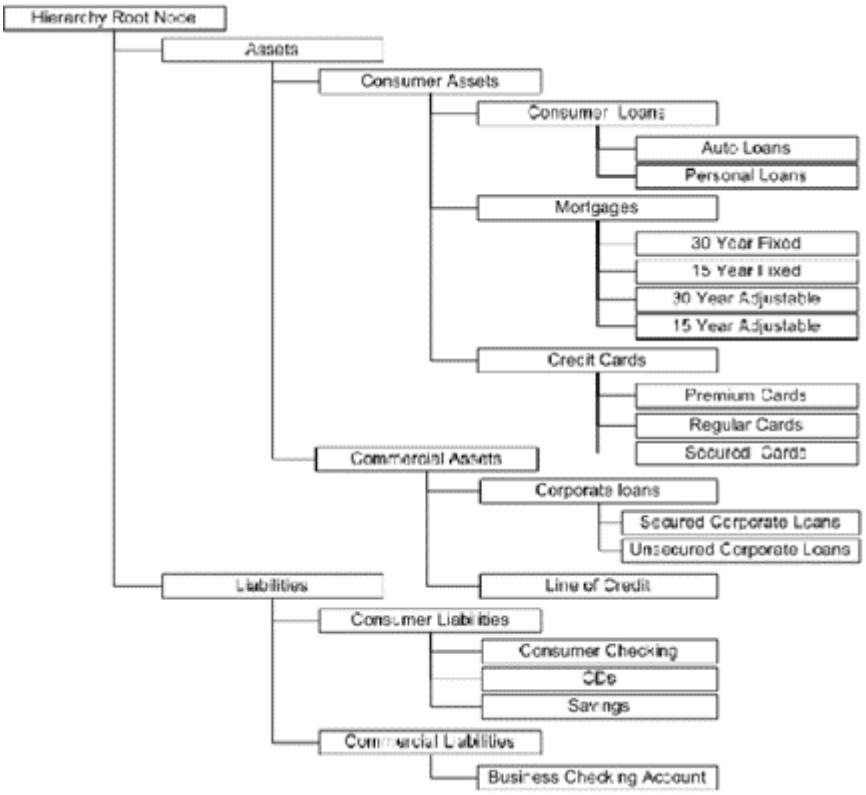
In Oracle Funds Transfer Pricing Cloud Service, your product portfolio is represented using the Product Dimension specified in your FTP Application Preferences. Node Level Assumptions allow you to define Transfer Pricing, Prepayment, and Adjustment Assumptions at any level of the Product Dimension Hierarchy. The Product Dimension supports a Hierarchical Representation of your Chart Of Accounts, therefore, you can take advantage of the Parent-Child relationships defined for the various nodes of your Product Hierarchies while defining Transfer Pricing, Prepayment, and Adjustment Assumptions. Child nodes for which no assumptions are specified automatically inherit the methodology of their closest Parent node. Conversely, explicit definitions made at a Child level will take precedence over any higher-level Parent node assumption.

Node level Assumptions simplify the process of applying rules in the user interface and significantly reduce the effort required to maintain Business Rules over time as new products are added to the product mix. It is also not required for all rules to assign assumptions to the same nodes. Users may assign assumptions at different levels throughout the Hierarchy.

> **Note:**
>
> While creating a new rule, if you perform any activities (such as Conditional Assumption Creation, Defining Products, Search, Copy Across, and so on) in the Assumption window and click the Cancel button, the Rule will be saved with basic Rule definition and displayed in Rule Summary Page.

The Behavior of Node Level Assumptions: The following graphic displays a Sample Product Hierarchy:

Figure 2-19 Sample Product Hierarchy



For example, if you want to transfer price this Product Hierarchy using the Spread from Interest Rate Code Transfer Pricing Method except for the following products:

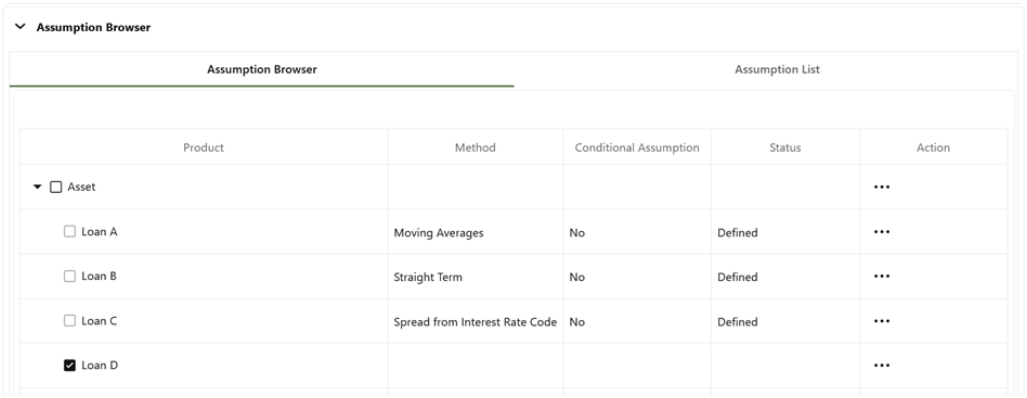
- **Mortgages**: You want to transfer price these using the Zero Discount Factors Cash Flow based method.
- **Credit Cards**: You want to transfer price all but secured credit cards using the Spread from Note Rate Method.

To transfer price in this manner, you need to attach Transfer-Pricing Methods to the nodes of the Product Hierarchy as follows:

- **Hierarchy Root Node**: Spread from Interest Rate Code
- **Mortgages**: Zero Discount Factors Cash Flow

- **Credit Cards**: Spread from Note Rate
- **Secured Credit Cards**: Spread from Interest Rate Code

Figure 2-20 Assumption Browser



The Transfer Pricing Method for a particular product is determined by searching up the nodes in the hierarchy. Consider the Secured Credit Cards in the previous example. Since the Spread from IRC is specified at the leaf level, the system does not need to search any further to calculate the transfer rates for the Secured Credit Cards. However, for a Premium Credit Card, the system searches up the Hierarchical Nodes for the first node that specifies a method. The first node that specifies a method for the Premium Credit Card is the Credit Card node and it is associated with the Spread from Note Rate method.

> **Note:**
>
> Not specifying assumptions for a node is not the same as selecting the "Do Not Calculate" method. Child nodes for which no assumptions are specified automatically inherit the methodology of their closest parent node. Therefore, if neither a child node nor its immediate parent has a method assigned, then the Oracle Funds Transfer Pricing Cloud Service searches up the nodes in the hierarchy until it finds a parent node with a method assigned, and uses that method for the child node. If there are no parent nodes with a method assigned then the application triggers a processing error stating that no assumptions are assigned for the particular product/currency combination. However, if the parent node has the "Do Not Calculate" method assigned to it then the child node inherits "Do Not Calculate", preventing the need for calculation and a processing error.

All parameters that are attached to a particular methodology (such as Interest Rate Code) are specified at the same level as the method. If multiple Interest Rate Codes are to be used, depending on the type of the product, the method would need to be specified at a lower level. For instance, if you want to use IRC 211178 for Consumer Products and IRC 3114 for Commercial Products, then the Transfer Pricing Methodologies for these two products need to be specified at the Commercial Products and Consumer Products nodes.

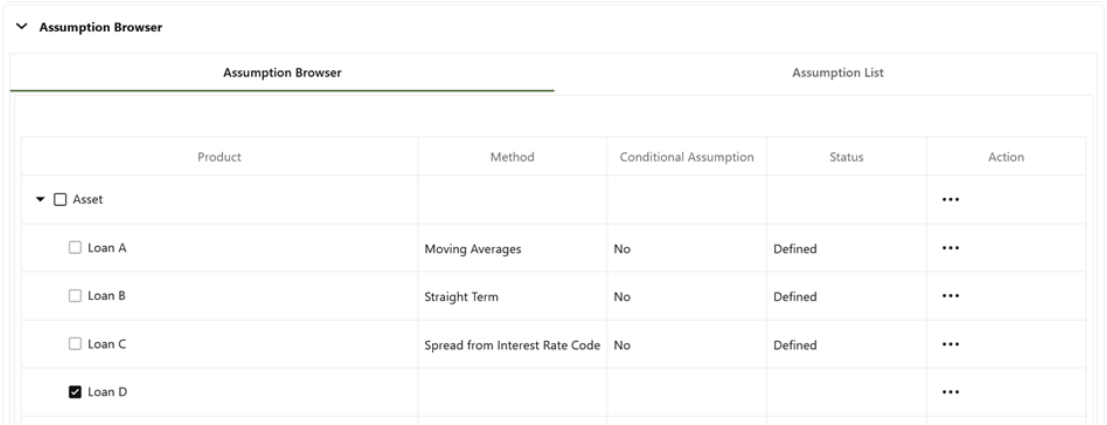
You need not specify Prepayment Assumptions at the same nodes as Transfer Pricing Methods. For example, each Mortgage category can have a different prepayment method while the entire Mortgage node uses the Zero Discount Factors Cash Flow Method for transfer pricing.

2.1.13 Associating Conditional Assumptions with Assumption Rules

Oracle Funds Transfer Pricing Cloud Service extends the setup and maintenance of assumptions by allowing users to integrate conditional logic (optional) into the setup of Transfer Pricing, Prepayment, and Transfer Pricing Adjustment methods. The Caterpillar Method under Transfer Pricing Rules will not be available for selection under Conditional Assumptions.

The Conditional Assumption UI is accessed from the Assumption Browser by selecting the Conditional Assumption icon.

Figure 2-21 Assumption Browser



The conditional logic is defined using Data Filters and/or Maps. These existing objects provide the building blocks for defining Conditional logic. For example, each Data Filter can provide the logic for a specific condition. In the following example, the Where clause is “Adjustable Type Code = 'Adjustable Rate'”. This type of Data Filter can be selected within the Conditional Assumption UI.

For more information on working with Filter, see the Filters document.

For example, you can use the Org Unit column to drive the assignment of Transfer Pricing Methods for all members of a particular Organization. You can create one Conditional Assumption to convey the entire Transfer Pricing Methodology logic and attach it to the top-level node of the Org Unit hierarchy. All nodes below the top-level node inherits the same Transfer Pricing assumption.

The logic included in a Conditional Assumption determines the specific Transfer Pricing method, Prepayment assumption, or Adjustment Rule that the system assigns to each instrument record at Run time.

The Conditional Assumption screen allows users to select explicit conditions (from Data Filters and/or Hierarchy Filters), apply methods, and rule selections to each condition directly. The Filter Conditions are processed by the engine in the order that they appear on the screen. After a condition is satisfied, the related assumption is applied. The following figure displays a representative Conditional Assumption using a Data Filter:

Figure 2-22 Conditional Assumptions

> **Note:**
>
> If an instrument record does not meet any of the conditions, then the rule logic reverts to the standard assumption that is directly assigned to the Product / Currency combination.

Conditional Assumptions can be applied only to detailed account records (data stored in the Instrument Tables).

2.2 Working with Transfer Pricing Rules

The procedure for working with and managing the Transfer Pricing Rule is similar to that of other Oracle Funds Transfer Pricing Cloud Service assumption rules. It includes the following steps:

- Searching for Transfer Pricing Rules
- Creating Transfer Pricing Rules
- Viewing and Editing Transfer Pricing Rules
- Copying Transfer Pricing Rules
- Deleting Transfer Pricing Rules

As part of creating and editing Transfer Pricing Rules, you can also define Transfer Pricing Methodologies. See:

- Defining Transfer Pricing Methodologies
- Defining the Redemption Curve Methodology
- Defining the Unpriced Account Methodology

Oracle Funds Transfer Pricing Cloud Service provides you with the option to copy, in total or selectively, the product assumptions contained within the Transfer Pricing, Prepayment, and Adjustments Rules from one currency to another currency or a set of currencies.

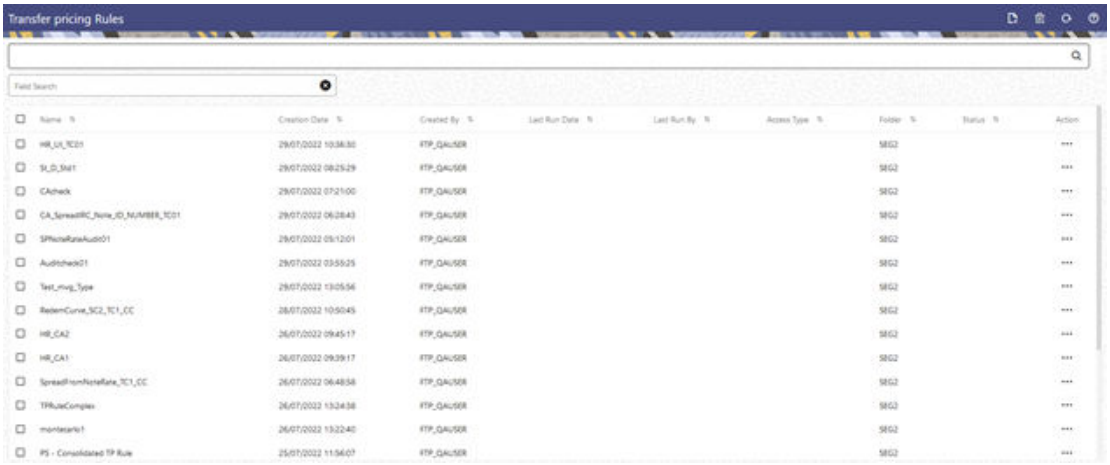
2.3 Creating Transfer Pricing Rules

You create a Transfer Pricing Rule to map Transfer Pricing Methodologies for your products.

To create a Transfer Pricing Rule, from the LHS menu, select **Assumption Specification**, and then select **Transfer Pricing Rules**.

The Transfer Pricing Rules Summary Screen is displayed showing a set of Transfer Pricing Rules. Using search criteria, you can control the set of rules that are displayed. When you Add, Edit, or View a rule, a detailed screen is displayed.

Figure 2-23 Transfer Pricing Rules Summary Screen



2.4 Navigating in the Summary Screen

When you first navigate to the Transfer Pricing Rules Summary Screen, the rules stored within your current default Folder are presented in a Summary Table. The Transfer Pricing Rules Summary Screen has the following panes: Search and Transfer Pricing Rule.

The title bar of the summary page provides several actions for the user. They are:

- **Add**: Click Add icon to build a new Transfer Pricing 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.
- **Refresh**: Click Refresh to refresh the Summary Page.
- **Help**: Click the Help icon to view the Transfer Pricing Rule Help Page.

2.4.1 Search Pane

There are two Search options provided to search the Transfer Pricing Rule on the Summary Page.

To search the Transfer Pricing Rule, perform the following steps:

1. Click the **Search** icon on the Search pane to collapse (display) the Criteria Window.
2. Enter the Transfer Pricing Rule **Name** or **Description** and click **Search** to display the Transfer Pricing Rule that match the criteria.
3. Click **Cancel** to remove the filter criteria on the Search Window and refresh the window.
4. Click **Search** after entering the search criteria.
   The search results are displayed in a table containing all the Transfer Pricing Rule that meet the search criteria.

5. The other method to search a Transfer Pricing Rule is using the **Field Search** option. The Field Search is an inline wildcard 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.

2.4.2 Transfer Pricing Rule Pane

The Transfer Pricing Rule Pane presents a table containing all Transfer Pricing Rule that meet your search criteria.

The Transfer Pricing Rule Summary page displays the following columns.

- **Name**: Displays the short name of the rule.
- **Creation Date**: Displays the date and time when user created the rule.
- **Created By**: Displays the Name of the user who created the rule.
- **Access Type**: Displays the access type of the rule - Read/Write or Read Only property of a Static Table Driver rule. Only the creator of a rule may change its Access Type.
- **Folder**: Displays the folder name where the rule is stored.
- **Action**: Displays the list of actions that can be performed on the rule.

The Action column on Transfer Pricing Rule Summary page offers the following actions that allow you to perform different functions. The following actions are available for the Transfer Pricing Rule.

- **View**: Click View in the Action column and select View to view the contents of a Transfer Pricing Rule in read/write format.
- **Edit**: Click Edit in the Action column and select Edit to edit the contents of a Transfer Pricing Rule in read/write format.
- **Delete**: Click Delete in the Action column and select Delete to delete an existing Transfer Pricing Rule.

You may select or deselect all the Transfer Pricing Rule rules in the summary table by clicking the check box in the upper left-hand corner of the summary table directly to the left of the Name column header.

Complete standard steps for this procedure.

In addition to the standard steps for creating rules, the procedure for creating a Transfer Pricing Rule involves one extra step. You need to select a product hierarchy. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between the nodes allows the inheritance of methodologies from Parent nodes to Child nodes.

2.5 Defining Transfer Pricing Methodologies

The assignment of Transfer Pricing Methodologies is part of the Create or Edit Transfer Pricing Rules process where assumptions about Transfer Pricing Methodologies are made for product-currency combinations. When you click Save in the Create Transfer Pricing Rules Process, the rule is saved and the Transfer Pricing Rule Summary Page is displayed. However, the Transfer Pricing Methodology has not yet been defined for any of your products at this point. You start defining your methodologies for the product-currency combinations before clicking Save.

The Transfer Pricing Rule supports the definition of Assumptions for combinations of two dimensions: Product and Currency.

You can define Transfer Pricing Methodologies for your entire product portfolio one currency at a time. For example, your portfolio is comprised of products denominated in two currencies (US Dollar and Japanese Yen) and that you want to specify different Transfer Pricing Assumptions and/or different Transfer Pricing Yield Curves, for each product group. Using the Currency selection drop-down list, you can first define Assumptions for the products denominated in US Dollars and then proceed with defining Assumptions for the Yen-based products.

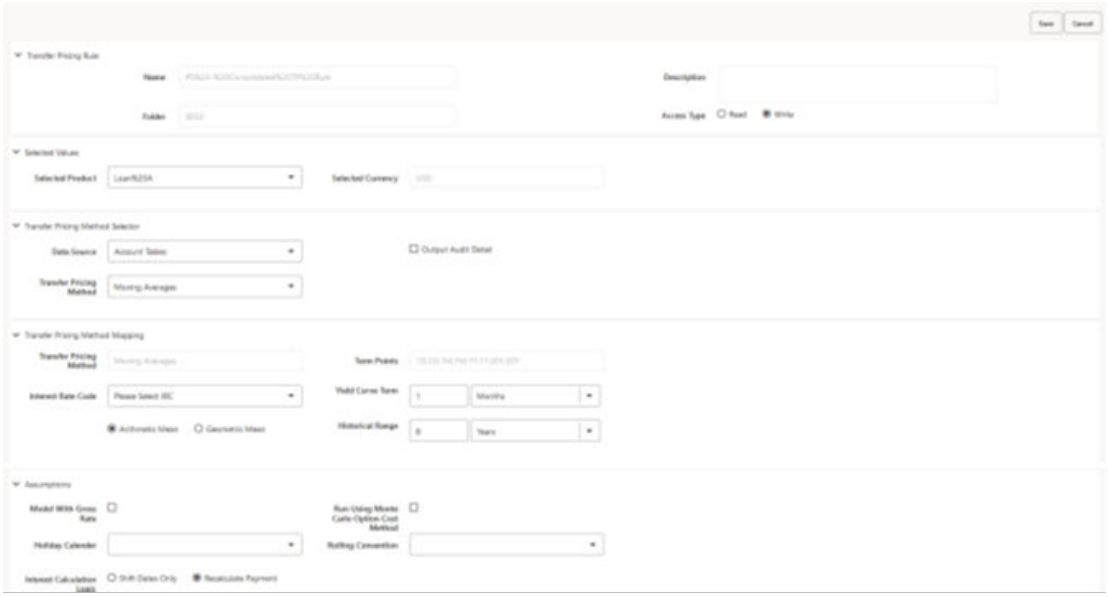
After you have created a Transfer Pricing Rule, you can assign Transfer Pricing Methodologies to product-currency combinations in either of the following two ways:

- By creating a conditional assumption using conditional logic. For more information, see Associating Conditional Assumptions with Assumption Rules.
- Directly on the Transfer Pricing Methodology Page, as described here.

2.5.1 Defining Assumptions with the Default Currency

For cases where you have the same assumption (Method and IRC) which is applicable to all currencies or multiple currencies, you can define rules for the combination of Product and Default Currency. To define assumptions for the Default Currency, select a Product from the Hierarchy and Default Currency from the currency list and proceed with the assumption definition. When processing data, the TP engine will first look for an assumption that exactly matches the product or currency of the instrument record. If not found, the engine will then look for the combination of the product and the Default Currency. This is a useful option to utilize during setup when the same product exists across multiple currencies and shares the same TP Assumption and Interest Rate Code.

Figure 2-24 Transfer Pricing Rule Definition (Edit Mode)



Default Currency setup example: If you have two instrument records of the same product, each with a different currency, for example, 1 is 'USD' and the other is 'AUD', you have two configuration choices. You can either:

- Define the assumptions individually for each product-currency combination using direct input or copy across.
- You can create one assumption for the combination of Product and Default Currency. When you use Default Currency, the TP Engine will apply this assumption to ALL currencies (unless a direct assumption is available for the product + currency processed). In the case where users have many individual currencies that utilize the same TP Method and reference IRC rates, this is a useful option because you only have to define the assumption 1 time and it applies to many different Product + Currency combinations.

For defining assumptions with Default Currency, you must perform the basic steps for creating or updating Transfer Pricing Rules.

Procedure:

The following table describes the key terms used for this procedure.

Table 2-8 Fields in the Transfer Pricing Rule Definition Screen

Term	Description
Yield Curve Term	Defines the point on the yield curve that the system references to calculate Transfer Rates.
Historical Term	Specifies the period over which the average is to be taken for the Moving Averages Method.
Lag Term	Specifies a yield curve from a date earlier than the Assignment Date for the Spread from Interest Rate Code Method.
Rate Spread	The fixed positive or negative spread from an Interest Rate Code or Note Rate is used to generate transfer rates in the Spread from Interest Rate and Spread from Note Rate Methods.
Model with Gross Rates	This option becomes available when you select Account tables as the data source and allows you to specify whether modeling should be done using the net or gross interest rate on the instrument. This option is only applicable when the Net Margin Code is also set to one, for example, Fixed. Gross rates are selected while modeling the effect of serviced portfolios where the underlying assets are sold but the organization continues to earn servicing revenue based on the original portfolio.
Mid Period	This option applies to Adjustable-Rate instruments only. It dictates whether the transfer rate is based on the Last Repricing Date, Current Repricing Period, Prior Repricing Date, or some combination thereof.
Audit Trail	Select to generate Audit Trail Output for specific product/ currency combination.
Assignment Date	This is the effective date of the yield curve.

Table 2-8 (Cont.) Fields in the Transfer Pricing Rule Definition Screen

Term	Description
Percentage/Term Points	The term points that the system uses to compute the Redemption Curve Method results. A percentage determines the weight assigned to each term point when generating results.
Add Dimension Values	Allows you to select the products that you want to use as source values when you transfer price using the Unpriced Account Method.
Across All Organization Units	When this option is enabled, the Transfer Price is calculated as a weighted average across all organization units for the matching product value and currency, and any optional migration dimensions selected in the Transfer Pricing Process Rule. Otherwise, the Transfer Price is calculated from accounts only within a particular Organizational Unit.
Holiday Calendar	Holiday Calendars are defined in the Holiday Calendars UI. In the Holiday Calendar, you can specify weekend days and Holiday Dates as applicable.
Rolling Convention	Rolling Conventions allow you to specify how dates falling on specified weekends or holidays should be handled.
Interest Calculation Logic	The Interest Calculation Logic Assumption allows you to specify whether to simply the date of the computed Cash Flow or to shift the date and recalculate the interest payment amount.

To define the assumptions with the default currency, do the following:

1. Navigate to the Assumption Browser Page.
2. Select a **Product Hierarchy**.
3. Select a **Currency**.
4. The list of currencies available for selection is managed with Currency module and reflects the list of Active currencies.
5. Expand the hierarchy and select one or more members (leaf values and/or node values) from the product hierarchy.
6. Click the **Add** icon to begin mapping Transfer Pricing Methods to the list of selected product dimension members. The system displays a list of all the products (for which you can define assumptions) or currencies (that are active in the system).
7. From the Transfer Pricing Method Selector Page, select the appropriate data source: **Account Tables** or **Ledger Table**.
8. Select the Transfer Pricing Method for the selected product member.

> **Tip:**
>
> The Transfer Pricing Methodologies are available depend on the selected data source. See: Transfer Pricing Combinations.

Depending on the Transfer Pricing Method selected, certain required and optional parameter fields are displayed. You can update these fields as required. See Required Parameters for a Transfer Pricing Methodology. See also:

- Defining the Redemption Curve Methodology
- Defining the Unpriced Account Methodology

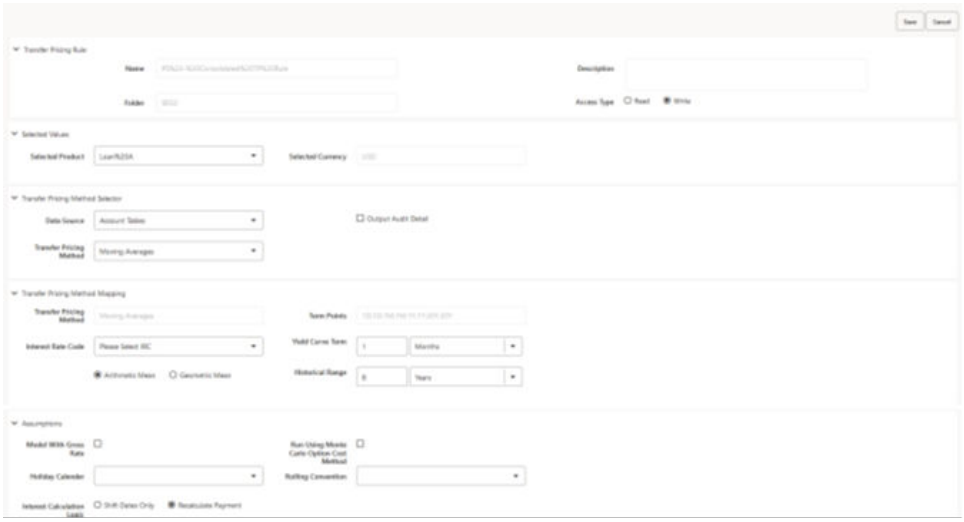
9. Select **Output Audit Trail** to output the audit data at the time of processing.
10. Specify the desired **Option Cost** Methodology. This option is available only when the data source is Account Tables. You can specify an Option Cost Methodology as follows:
    a. Select Run using Monte Carlo Option Cost Method. The Target Balance drop-down list is displayed.
    b. Select the required balance type. You can select any one of the following as the designated target balance for option cost calculations:
        - Par Balance
        - Book Balance
        - Market Value (Note: the Market_Value_c column should be populated if you make this selection, either by an Oracle ALM Process or via direct load from an external source).
11. Select the Holiday Calendar. The screen displays the Holiday Calendar inputs only for Cash Flow TP Methods – Duration, Average Life, Weighted Term, and Zero Discount Factors. The default assumption is None, meaning the Holiday Calendar adjustments are turned off. If a Holiday Calendar is selected, Holiday Calendar adjustments will be enabled and the following two additional inputs will be required:
    - Rolling Convention
        - Following Business Day: The Payment Date is rolled to the next business day.
        - Modified following Business Day: The Payment Date is rolled to the next business day unless doing so would cause the payment to be in the next calendar month, in which case the payment date is rolled to the previous business day.
        - Previous Business Day: The Payment Date is rolled to the previous business day.
        - Modified previous Business Day: The Payment Date is rolled to the previous business day unless doing so would cause the payment to be in the previous calendar month, in which case the payment date is rolled to the next business day.
    - Interest Calculation Logic
        - Shift Dates Only: If a future Payment Date (as computed by the Cash Flow Engine (CFE)) falls on a designated holiday (including weekends), the

CFE will shift the Payment Date from the holiday as per the rolling convention. No changes will be made to the payment amount or accrual amount; this is simply shifting the date on which the Cash Flow will post. The subsequent Payment Dates resume according to the original schedule.

– Recalculate Payment: This option includes the same Holiday Calendar definition as in the Shift Dates Only option, but it also takes one additional step to recalculate the interest payment amount (and interest accruals) based on the actual number of days in the (adjusted) payment period. The instrument records use the payment frequency (term and multiplier) and the Re-Price frequency (term and multiplier) in association with the Next/Last Payment Date and Next/Last Re-Pricing Date to determine when the cash flow will post. The CFE logic is enhanced to acknowledge Holiday Dates and re-compute the payment/interest amount given the change in days. In addition, the engine gets back on the scheduled track of payment events after a holiday event occurs in one (or many sequential) events.

> **Note:**
>
> Holiday Calendar adjustments can also be applied to the Tractor TP Method. For this method, the Holiday Calendar assumptions are defined within the Behavior Pattern > Replicating Portfolio UI.

Figure 2-25 Transfer Pricing Rule Definition (Edit Mode)



12. Select **Economic Value**. This section displays the inputs required for calculating Economic Value. These assumptions are optional and the section appears only when the "Economic Value inputs to be defined" check box is selected.
The following inputs are required for calculating Economic Value:

    - **Cash Flow Interest Type**: Select the interest rate to use for calculating the Interest Cash Flow. This Interest Amount, together with the Principal Amount will be discounted and used to arrive at the Economic Value of the instrument Record.
    - **Interest Only**: Select this option if you want to exclude the Principal Cash Flow from the Economic Value Calculation.

- **Exclude Accrued Interest**: Select this option if you want to exclude accrued interest, (interest computed from last payment date to As-of-Date) from the Economic Value Calculation. This will provide you with a clean price.
- **Interest Rate Code**: Select the Interest Rate Code to be used for discounting the Cash Flows.
- **Interest Rate Spread**: Input any applicable spread to be added on top of the IRC Rate.

> **Note:**
>
> Economic Value Calculations are now supported for account rate tiers as well.

13. Click **Apply**.
    At this point, you can:
    - Continue defining additional methodologies for other product-currency combinations contained in your selection set, by repeating the above procedure.
    - Complete the process by clicking Cancel or by answering NO to the confirmation alert after applying the assumptions for each Product or Currency combination in your selected set.
14. From the Assumption Browser Page, click Save.
    The new assumptions are saved and the Transfer Pricing Rule Selector Page is displayed.

> **Note:**
>
> Oracle Funds Transfer Pricing Cloud Service provides you with the option to copy, in total or selectively, the product assumptions contained within the Transfer Pricing, Prepayment, and Adjustment Rules from one currency to another currency or a set of currencies. For more information, see Copying Assumptions across Currencies.

2.5.1.1 Availability of Transfer Pricing Methodologies

(Required) <Enter a short description here.>

The availability of Transfer Pricing Methodologies depends on the data source that you select: Account Table or Ledger Table. The following table describes the Transfer Pricing Methodologies available for each of these data sources and displays whether that methodology requires the selection of a Transfer Pricing Interest Rate Code.

> **Note:**
>
> The Interest Rate Code LOV is filtered by the selected Currency.

Table 2-9 Transfer Pricing Combinations

Transfer Pricing Methodology	Data Source: Account Table	Interest Rate Code	Behavior Pattern	Holiday Calendar
Do Not Calculate	Yes			
Cash Flow: Average Life	Yes	Yes		Yes
Cash Flow: Duration	Yes	Yes		Yes
Cash Flow: Weighted Term	Yes	Yes		Yes
Cash Flow: Zero Discount Factors	Yes	Yes		Yes
Moving Averages	Yes	Yes		
Straight Term	Yes	Yes		
Spread from Interest Rate Code	Yes	Yes		
Spread from Note Rate	Yes			
Redemption Curve	Yes	Yes		
Tractor Method	Yes	Yes	Yes	Yes
Caterpillar	Yes	Yes	Yes	
Weighted Average Perpetual	Yes	Yes	Yes	
Unpriced Account				

Note:

Not specifying assumptions for a node is not the same as selecting the Do Not Calculate Methodology. Child nodes for which no assumptions are specified automatically inherit the methodology of their closest Parent node. Therefore, if neither a Child node nor its immediate Parent has a method assigned, the application searches up the nodes in the hierarchy until it finds a Parent node with a method assigned, and uses that method for the Child node. However, if no Parent node has a method assigned then the application triggers a processing error stating that no assumptions are assigned for the particular product/currency combination. However, if the Parent node has the method Do Not Calculate assigned to it then the Child node inherits Do Not Calculate, obviating the need for calculation and for a processing error.

2.5.1.2 Required Parameters

You cannot define a Transfer Pricing Methodology successfully unless you specify the required parameters. The following table displays the parameters associated with each Transfer Pricing Method and specifies whether they are required or optional. The optional parameter fields display default values. However, you may decide to change the values for the optional Parameters Methodologies, such as the Redemption Curve or the Unpriced Account Methods.

Table 2-10 Required Parameters for a Transfer Pricing Methodology

Transfer Price Method	Yield Curve Term	Historical Range	Lag Term	Rate Spread	Assignment Date	Mid Period	Term Points	Dimension Values
Cash Flow: Average Life								
Cash Flow: Weighted Term								
Cash Flow: Duration								
Cash Flow: Zero Discount Factors								
Moving Averages	Required	Required						
Straight Term						Optional		
Tractor Method								
Spread from IRC	Required		Required	Required	Required	Optional		
Spread from Note Rate				Required		Optional		
Redemption Curve					Required	Optional	Required	
Caterpillar								
Do not Calculate								
Weighted Average Perpetual								
Unpriced Account								Required
Tractor Method								

2.6 Defining the Redemption Curve Methodology

As part of the process for defining the Redemption Curve Methodology, you must select as many Term Points from your selected Transfer Pricing Yield Curve as are needed and allocate the percentage weighting for each of those points. The prerequisite for defining the Redemption Curve Methodology is performing basic steps for creating or updating a Transfer Pricing Rule.

To add the term steps, do the following:

1. Click **Add New Term Points** to display the Add New Term Points Page.
2. Select the **Transfer Pricing Yield Curve Points** as required.
   The Term Point Selection section is displayed.
3. Update the Percentage Value for each Term Point.

> **Note:**
>
> The sum of all the percentages for all Term Points must add up to 100.

4. To remove a Yield Curve Point from the Percentages/Term Points table, select the term point(s) and click the **Delete** icon.

2.6.1 Defining Tractor Methodology

The prerequisites for defining a Tractor Methodology are:

- Creating a Replicating Portfolio.
- Generating (and maintaining) the Portfolio. Volatile and Core Instrument strips will be created in the FSI_M_REP_PORTFOLIO_STRIPS table.

To define and use a Tractor TP Method:

1. Define the Transfer Pricing Rule and select the Tractor Method from the list of available TP Methods for relevant Product Dimension Members.
2. Select the appropriate Replicating Portfolio.
3. Select the Transfer Pricing Interest Rate Code.
4. Define a Transfer Pricing Process and Run using the TP Rule.
   - TP Process Transfers Price the non-zero portfolio strips using a Straight Term Method.
   - TP Process computes a weighted average TP Rate for the portfolio and will update all instruments mapped through the TP Rule to this method.

2.6.2 Defining Unpriced Account Methodology

When defining an Unpriced Account Methodology, you need to select the Product Dimension Members (products) whose weighted average transfer rate will be assigned to the product or

currency combination being defined. The prerequisite for defining the Unpriced Account Methodology is performing basic steps for creating or upgrading a Transfer Pricing Rule.

To add the Dimension Values, do the following:

1. Click the **Dimensional Values** icon to display the Hierarchical Add Members Page.
2. Search and select the required Dimension Members. Specify whether the weighted average of Transfer Rates has to be taken across all Organizational Units or for accounts only within that Organizational Unit.

> **Note:**
>
> You must also select the Organization Unit Dimension along with any other applicable dimensions under Migration Dimensions on the Migration tab of the TP Process when using this method.

3. Click **Apply**.

   The Transfer Pricing Assumption Browser Page is displayed.

2.7 <Enter Topic Title Here>

This functionality provides you with the option to copy, in total or selectively, the product assumptions contained within the Transfer Pricing, Prepayment, and Adjustment Rules from one currency to another currency or a set of currencies.

Copy of assumptions across currencies enhances the usability of Oracle Funds Transfer Pricing Cloud Service in a multi-currency environment. For example, if you have 10 currencies enabled in the application, you need to input only one set of assumptions and then copy those assumptions across all enabled currencies, instead of having to input 10 full sets, thereby saving a significant amount of input time.

This functionality also reduces the risk associated with data input errors, as you need to audit inputs for a single set of assumptions before executing the copy procedure. The copy across the currencies process requires users to select a replacement Transfer Pricing Yield Curve for each target currency. These currency-specific IRC's replace the IRC selection made for each product in the Source Currency Selection Set.

You must define Transfer Pricing, Prepayment, and (or) Adjustment Rules related to product assumptions.

To copy the assumptions across currencies, do the following:

1. Navigate to the appropriate (Transfer Pricing, Prepayment, or Adjustment Rule) Assumption Browser.
2. Select **Source currency**.
3. Select defined product assumptions individually using the check boxes corresponding to each product (or Node on the hierarchy).
4. Click the **Copy Across Currencies** icon.

5. On the Copy Across Currencies Page, select the listed currencies either individually using the corresponding check boxes or in total using **Select All**.
6. Specify an Interest Rate Code for each selected currency. This is necessary because each Interest Rate Code is specific to a single currency. When copying product assumptions across currencies, you must define the interest rate code for each target currency to replace the interest rate code used for the source currency assumptions. For Transfer Pricing Rules that use the Redemption Curve Method, users should pay careful attention to the structure of the Interest Rate Codes selected for the Target Currencies to ensure they contain all of the Term Points used in the definition of the source assumptions. If the selected target Interest Rate Code structures are missing required Term Points, the UI will display a notification regarding the missing Term Points, and assumptions cannot be copied until the user takes corrective action.
7. Click **Apply** to initiate the copy process and to return to the Assumption Browser Page.

> **Note:**
>
> You can review the results of the copy process from the Assumption Browser by selecting a different currency and following the usual navigation to view or edit assumptions. The application displays new assumptions for each product that was included in the original source selection. The copy process replaces pre-existing assumptions for any product-currency combination that is included in the target selection.

8. Click **Save** on the Assumption Browser Page to save the assumptions to the database.