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PeopleSoft EPM 9.1: Applications Fundamentals for Financial Services Industry

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PeopleSoft EPM 9.1: Applications Fundamentals for Financial Services Industry
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Preface

Understanding the PeopleSoft Online Help and PeopleBooks

The PeopleSoft Online Help is a website that enables you to view all help content for PeopleSoft Applications and PeopleTools. The help provides standard navigation and full-text searching, as well as context-sensitive online help for PeopleSoft users.

PeopleSoft Hosted Documentation

You access the PeopleSoft Online Help on Oracle's PeopleSoft Hosted Documentation website, which enables you to access the full help website and context-sensitive help directly from an Oracle hosted server. The hosted documentation is updated on a regular schedule, ensuring that you have access to the most current documentation. This reduces the need to view separate documentation posts for application maintenance on My Oracle Support, because that documentation is now incorporated into the hosted website content. The Hosted Documentation website is available in English only.

Locally Installed Help

If your organization has firewall restrictions that prevent you from using the Hosted Documentation website, you can install the PeopleSoft Online Help locally. If you install the help locally, you have more control over which documents users can access and you can include links to your organization's custom documentation on help pages.

In addition, if you locally install the PeopleSoft Online Help, you can use any search engine for full-text searching. Your installation documentation includes instructions about how to set up Oracle Secure Enterprise Search for full-text searching.

See *PeopleTools 8.53 Installation* for your database platform, "Installing PeopleSoft Online Help." If you do not use Secure Enterprise Search, see the documentation for your chosen search engine.

Note: Before users can access the search engine on a locally installed help website, you must enable the Search portlet and link. Click the Help link on any page in the PeopleSoft Online Help for instructions.

Downloadable PeopleBook PDF Files

You can access downloadable PDF versions of the help content in the traditional PeopleBook format. The content in the PeopleBook PDFs is the same as the content in the PeopleSoft Online Help, but it has a different structure and it does not include the interactive navigation features that are available in the online help.

Common Help Documentation

Common help documentation contains information that applies to multiple applications. The two main types of common help are:

- Application Fundamentals

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- Using PeopleSoft Applications

Most product lines provide a set of application fundamentals help topics that discuss essential information about the setup and design of your system. This information applies to many or all applications in the PeopleSoft product line. Whether you are implementing a single application, some combination of applications within the product line, or the entire product line, you should be familiar with the contents of the appropriate application fundamentals help. They provide the starting points for fundamental implementation tasks.

In addition, the *PeopleTools: PeopleSoft Applications User's Guide* introduces you to the various elements of the PeopleSoft Pure Internet Architecture. It also explains how to use the navigational hierarchy, components, and pages to perform basic functions as you navigate through the system. While your application or implementation may differ, the topics in this user's guide provide general information about using PeopleSoft Applications.

Field and Control Definitions

PeopleSoft documentation includes definitions for most fields and controls that appear on application pages. These definitions describe how to use a field or control, where populated values come from, the effects of selecting certain values, and so on. If a field or control is not defined, then it either requires no additional explanation or is documented in a common elements section earlier in the documentation. For example, the Date field rarely requires additional explanation and may not be defined in the documentation for some pages.

Typographical Conventions

The following table describes the typographical conventions that are used in the online help.

Typographical Convention	***Description***
Bold	Highlights PeopleCode function names, business function names, event names, system function names, method names, language constructs, and PeopleCode reserved words that must be included literally in the function call.
Italics	Highlights field values, emphasis, and PeopleSoft or other book-length publication titles. In PeopleCode syntax, italic items are placeholders for arguments that your program must supply. Italics also highlight references to words or letters, as in the following example: Enter the letter *O*.
Key+Key	Indicates a key combination action. For example, a plus sign (+) between keys means that you must hold down the first key while you press the second key. For Alt+W, hold down the Alt key while you press the W key.
`Monospace font`	Highlights a PeopleCode program or other code example.
. . . (ellipses)	Indicate that the preceding item or series can be repeated any number of times in PeopleCode syntax.

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Typographical Convention	*Description*
{ } (curly braces)	Indicate a choice between two options in PeopleCode syntax. Options are separated by a pipe (|).
[ ] (square brackets)	Indicate optional items in PeopleCode syntax.
& (ampersand)	When placed before a parameter in PeopleCode syntax, an ampersand indicates that the parameter is an already instantiated object. Ampersands also precede all PeopleCode variables.
⇒	This continuation character has been inserted at the end of a line of code that has been wrapped at the page margin. The code should be viewed or entered as a single, continuous line of code without the continuation character.

ISO Country and Currency Codes

PeopleSoft Online Help topics use International Organization for Standardization (ISO) country and currency codes to identify country-specific information and monetary amounts.

ISO country codes may appear as country identifiers, and ISO currency codes may appear as currency identifiers in your PeopleSoft documentation. Reference to an ISO country code in your documentation does not imply that your application includes every ISO country code. The following example is a country-specific heading: "(FRA) Hiring an Employee."

The PeopleSoft Currency Code table (CURRENCY_CD_TBL) contains sample currency code data. The Currency Code table is based on ISO Standard 4217, "Codes for the representation of currencies," and also relies on ISO country codes in the Country table (COUNTRY_TBL). The navigation to the pages where you maintain currency code and country information depends on which PeopleSoft applications you are using. To access the pages for maintaining the Currency Code and Country tables, consult the online help for your applications for more information.

Region and Industry Identifiers

Information that applies only to a specific region or industry is preceded by a standard identifier in parentheses. This identifier typically appears at the beginning of a section heading, but it may also appear at the beginning of a note or other text.

Example of a region-specific heading: "(Latin America) Setting Up Depreciation"

Region Identifiers

Regions are identified by the region name. The following region identifiers may appear in the PeopleSoft Online Help:

- Asia Pacific
- Europe
- Latin America

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- North America

Industry Identifiers

Industries are identified by the industry name or by an abbreviation for that industry. The following industry identifiers may appear in the PeopleSoft Online Help:

- USF (U.S. Federal)
- E&G (Education and Government)

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Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Using and Managing the PeopleSoft Online Help

Click the Help link in the universal navigation header of any page in the PeopleSoft Online Help to see information on the following topics:

- What’s new in the PeopleSoft Online Help.
- PeopleSoft Online Help acessibility.
- Accessing, navigating, and searching the PeopleSoft Online Help.
- Managing a locally installed PeopleSoft Online Help website.

PeopleSoft EPM Related Links

My Oracle Support

PeopleSoft Information Portal on Oracle.com

PeopleSoft Training from Oracle University

PeopleSoft Video Feature Overviews on YouTube

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Send us your suggestions Please include release numbers for the PeopleTools and applications that you are using.

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Chapter 1

Getting Started with Application Fundamentals for Financial Services Industry

Common Elements Used in Application Fundamentals for Financial Services Industry

This section lists common elements used in PeopleSoft Application Fundamentals for Financial Services Industry.

SetID	Provides the ID code for a tableset. A tableset is a group of tables (records) necessary to define your company's structure and processing options.
Effective Date	Establishes the date on which the row in the table becomes effective. It determines when you can view and change the information. Pages and batch processes that use the information use the current row.
Status	Indicates whether a row in a table is active. You cannot select inactive rows on pages or use them for running batch processes.
Description	Enables you to enter up to 30 characters of free-form text to describe what you are defining.
Run Control ID	Identifies specific run control settings for a process or report.
Report ID	Identifies the report.
Program Name	Provides the PeopleSoft Enterprise Performance Management program name for which you are running the report or process.
When	Specifies the frequency with which you want to run a process. You can select *Once,Always,* or*Don't.*
Last Run On	Indicates the date on which the report or process was most recently run.
As Of Date	Indicates the most recent date for which the report or process includes data.
Scenario ID	Provides an identifier for a specific scenario.
Model ID	Provides an identifier for a model. A model uniquely identifies the types of data that you want to include in a scenario. For

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	example, you might want to review revenue by region, which would be a broad scope. Or, if you use PeopleSoft Activity-Based Management, you might want to review only the activities that relate to a certain application for certain types of resources, which would be a narrow scope.
Fiscal Year	Specifies the fiscal year for your scenario or process.
Period andAccounting Period	Specifies the accounting period for the object or process.
Job ID	Specifies an instance of an engine.

Financial Services Industry Applications Overview

PeopleSoft has an integrated suite of applications for the financial services industry. These applications, which run within the PeopleSoft Enterprise Performance Management framework, are designed to help calculate and measure the economic profitability of an organization's customers, products, channels, and operating units. These are the PeopleSoft Financial Services Industry applications:

- PeopleSoft Funds Transfer Pricing

  Provides the ability to attribute a net interest margin to sources and uses of funds within a financial institution based on several industry standards and best practice methodologies. Funds Transfer Pricing is also used to calculate the cost of allocated capital, which can then be factored into the profitability of that application or activity.

- PeopleSoft Risk-Weighted Capital

  Allocates capital based on the risk of activities and portfolio balances. The risk-weighted capital amount is typically calculated as a function or based on the *unexpected* loss for an activity or instrument. With Risk-Weighted Capital, you can determine, for each instrument or business activity in your organization, the equity capital that you should allocate for the associated risk or earnings volatility. You can also calculate the normalized*expected* loss, which can be used instead of actual losses to analyze economic profit and loss. In addition, Risk-Weighted Capital can be used to address significant portions of the Basel II capital accords, particularly regarding credit risk processing.

The Financial Services Industry applications address profitability management by establishing an environment that specifically targets the business requirements of the financial services industry. You can set up the individual financial products or instruments within the system, apply specific processing and calculation rules, and then run the system to measure the values of the balance sheet and off-balance sheet items. You can also measure the sensitivity of those values under alternative economic and operating assumptions.

Financial Services Industry Business Processes

The Financial Services Industry applications are part of the PeopleSoft Cash Management business process.

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Financial Services Industry Applications Integrations

PeopleSoft Financial Services Industry applications integrates with the EPM Warehouse:

- Charts integration.
- Currency conversion integration.

Charts Integration

Many of the PeopleSoft Financial Services Industry application pages contain charts. To use charts, you must:

- Install the PeopleSoft Enterprise Performance Management charting tool to enable the PeopleSoft Financial Services Industry application pages to use the chart feature.
- Navigate to EPM Foundation, EPM Setup, Installation Analysis & Options, Installation Options, Web Services and set the following options:
  - Select the Chart Server check box to enable you to use the basic charting features.
  - Select the Applets check box to enable applets that several applications use to provide enhanced and interactive charting abilities.

    Warning! Applets download code to the client workstation.

Many charts are interactive. Depending on the chart type, you can:

- Click a data point to view information about it, such as the *x* and*y* values and a description.
- Rotate the chart by clicking an axis and dragging with your mouse.
- Move the chart floor by clicking and dragging the floor's surface.
- View details when you move your mouse over a point.

Currency Conversion Integration

All records contain amount fields for base currency and transaction currency. A company uses base currency to generate consolidated financial reports. If the company has multinational operations, then the business operations transacted in foreign currencies are converted to the base currency for consolidation. The analytic applications and support modules use both of these fields for processing and posting results.

To ensure that PeopleSoft Financial Services Industry applications and the financial services industry environment use the appropriate amount fields in their processing, set up your datamaps and constraints correctly in the warehouse. These are the four types of amount fields:

- Base Currency Equivalent Amount (frequently identified with a*BCE_AMT* suffix—for example—FI_PAYMENT_BCE_AMT).
- Posted Base Amount (POSTED_BASE_AMT).
- Posted Transaction Amount (POSTED_TRANS_AMT).

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- Posted Total Amount (POSTED_TOTAL_AMT).

  This is the total base currency amount for all foreign currency ledger accounts with the same key.

Note: Every amount or balance in the instrument and balance record has a field for the amount expressed in the transaction currency and another field for the amount expressed in base currency equivalent units. PeopleSoft Financial Services Industry applications and the financial services industry environment use both the base currency equivalent units, and the transaction currency amount fields, with the exception of the Cash Flow engine and FPM, both of which always use the transaction amount.

Financial Services Industry Implementation

PeopleSoft Setup Manager enables you to generate a list of setup tasks for your organization based on the features that you are implementing. The setup tasks include the components that you must set up, listed in the order in which you must enter data into the component tables, and links to the corresponding Product Documentation.

Other Sources of Information

In the planning phase of your implementation, take advantage of all PeopleSoft sources of information, including the installation guides and troubleshooting information. A complete list of these resources appears in the preface in *Product Documentation and the Online Library* with information about where to find the most current version of each.

See the product documentation for *PeopleTools: PeopleSoft Setup Manager* and *PeopleTools: PeopleSoft Component Interfaces*

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Chapter 2

Navigating in Financial Services Industry Applications

Navigating in Financial Services Industry Applications

PeopleSoft Financial Services Industry provides custom navigation center pages that contain groupings of folders that support a specific business process, task, or user role.

Note: In addition to the custom navigation center pages, PeopleSoft provides menu navigation and standard navigation pages.

See the product documentation for *PeopleTools: PeopleSoft Applications User's Guide*

Pages Used to Navigate in Financial Services Industry Applications

Financial Services Industries Navigation Pages

The Financial Services Industries custom navigation pages are geared to the person in the organization who is focused on all aspects of financial services industries applications, including business processes and data setup. This table lists the custom navigation pages that are used to navigate in Financial Services Industry applications.

Page Name	*Navigation*	*Usage*
Financial Services Industries	Main Menu, Financial Services Industries	Access primary Financial Services Industries menu options and activities.
Funds Transfer Pricing Center	Click Funds Transfer Pricing Center on the Financial Services Industries main page.	Access the Funds Transfer Pricing Center page.
Risk-Weighted Capital Center	Click Risk-Weighted Capital Center on the Financial Services Industries page.	Access the Risk-Weighted Capital Center page.
Regulatory Reporting Center	Click Regulatory Reporting Center on the Financial Services Industries page.	Access the Regulatory Reporting Center, Reporting Setup Center, Results Center, FRS Product Codes, FRS Profit/Loss Codes, Reporting Business Unit, Runtime Parameters, Instrument Level Ledger, Performance Ledger, and Global Consolidation Ledger pages.

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Page Name	***Navigation***	***Usage***
Models and Parameters Setup	Click Models and Parameters Setup on the Financial Services Industries main page.	Access the Models and Parameters Setup page.
Product Portfolio	Click Product Portfolio on the Financial Services Industries page.	Access the Product Portfolio page.
Financial Rules	Click Financial Rules on the Financial Services Industries page.	Access the Financial Rules page.
Funds Transfer Pricing Rules	Click Funds Transfer Pricing Rules on the Financial Services Industries page.	Access the Funds Transfer Pricing Rules page.
Risk-Weighted Capital Rules	Click Risk-Weighted Capital Rules on the Financial Services Industries page.	Access the Risk-Weighted Capital Rules page.
Analysis and Processing	Click Analysis and Processing on the Financial Services Industries page.	Access the Analysis and Processing page.
Reports	Click Reports on the Financial Services Industries page.	Access the Reports page.

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Chapter 3

Understanding Application Fundamentals for the Financial Services Industry

Financial Services Industry Applications

The financial services industry environment is a collection of rules that support the valuation of the financial services industry balance sheet and off-balance sheet items; they measure the sensitivity of those values under alternative economic and operating assumptions. Many of these rules define financial application behavior and their attributes; for example, term to maturity, accrual basis, compounding frequencies, and so on. Other rules define interest rate environments, customer behavioral models, service fee models, and so on.

Here are the rules and processes that create the financial services industry environment:

- Financial calculation rules.

  Establishes how the PeopleSoft Financial Services Industry applications calculate specific financial measures or application results for each instrument pool. This may include processing rules for stratification, behavioral models, application pricing, forecasting, funds transfer pricing, and risk-weighted capital. This is the core functionality of the PeopleSoft Financial Services Industry system.

- Product definitions.

  Specifies many of the cash flow characteristics of financial instruments. Some attributes include type of balance, term, interest calculations, payment frequency, and dates. PeopleSoft Financial Services Industry applications use product definitions for processing.

- Service fees modeling.

  Models noninterest revenues and expenses in earnings simulations.

- Behavioral modeling.

  Models the interest rate sensitivity of customers with respect to loan prepayment, loan charge-off, deposit growth and runoff, and rate lock options.

- Cash flow modeling.

  Models cash flows for an instrument or application. You can graph and view the results online, as well as write the results to the database. You can interactively explore assumptions affecting cash flows, such as the rate environment, terms, and payment characteristics of the instrument, and the effects of the behavioral model.

- Pricing indices definition.

  Defines indices underlying the market-based interest rates that are representative of bank management's pricing strategy for loans and deposits. Pricing indices are one of the core-supporting

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components of PeopleSoft Financial Services Industry applications. Indices are used for multiple purposes, such as repricing and behavioral modeling. There are two parts to using pricing indices in PeopleSoft Financial Services Industry: pricing and repricing instruments and products, and providing benchmark rates to the behavioral models.

- Product ratings definition.

  Creates customized product attributes to calculate risk capital or expected losses at a product-specific level.

- Negative amortization.

  Calculates settings that go into effect for certain products when the payment does not cover the interest on the loan and the amount of the loan (principle) is increasing over time.

- Seasonality groups.

  Define cyclical patterns that may be factored into the interest rate behavior models or application forecasts.

- Model definitions.

  Define various runtime parameters on a model-ID level. Such parameters are product, balance sheet, and income statement trees. By using different trees, you can run applications on different sets of data. Other parameters that are set on the model ID level are cash flow settings, error log settings, and engine-specific settings for PeopleSoft Funds Transfer Pricing and PeopleSoft Risk-Weighted Capital.

- Yield curve generation.

  Creates curves based on generic or market data, using rules for defining source data, and flexible interpolations for determining rates between data points. Curves may be built exclusively from market data (that is, Treasury, LIBOR, and so on) or may be the result of a mathematical operation. An evaluator component provides discount factors, spot rates, and forward rates.

- Stratification.

  Aggregates the volume of financial instruments (individual instances of an application) to a manageable scale for processing purposes.

- Balance sheet and income statement rules.

  Specify the application tree nodes and account nodes for the balances that PeopleSoft Financial Services Industry applications process. These rules define how to reconcile the instrument balances and position balances to the ledger account balances.

- Reconciliation rules.

  Enable you to reconcile a variety of instrument balances to the ledger.

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Integration with Enterprise Performance Management Warehouses

PeopleSoft Financial Services Industry analytic applications (PeopleSoft Risk-Weighted Capital and PeopleSoft Funds Transfer Pricing) draw data from the Enterprise Performance Management (EPM) Warehouse for their processing and post results back to the EPM Warehouse tables for reporting. After loading the data from a source system, the EPM Warehouse validates, enriches, stores, and moves the data for multidimensional reporting and analysis.

This section discusses:

- Performance ledger, products, and instruments.
- Performance ledger versus average daily balance ledger.
- Instrument table population.

Performance Ledger, Products, and Instruments

The analytic applications can process data at either a summary level, using performance (PF) ledger data, or at a detail level, using instrument or treasury position data. The primary table for PF ledger balances is PF_LEDGER_ F00, containing data that originates from the general ledger. PF ledger balances are typically current, end-of-period balances, that are used for management profitability reporting, as opposed to GAAP reporting. You can think of the relationship between the PF ledger, product definitions, and instrument balances, as a type of hierarchy. The PF ledger is the highest level in the tree hierarchy. Many of the PF ledger accounts consist of application balances that roll up to the balance sheet accounts in the PF Ledger table, and the products are made up of individual instrument balances.

Use the financial product definition pages to define the characteristics and processing rules used by the financial analytic applications for all of the instruments you define. The product definitions specify the types of financial products that the institution sells or carries in its portfolio, for example, mortgages, auto loans, and foreign exchange contracts. The instruments are the specific financial obligations, contracts, and accounts. A product or application defines the attributes of a generic instrument, specifically its behavior in terms of cash flow. An instrument is a specific instance of a product. The instrument records are the institution's specific individual financial obligations, and one of the key defining attributes on the instrument record is its product ID. In terms of the bank's balance sheet, the product or instrument can be an asset (loans, lines of credit), or a liability (checking accounts, certificates of deposit), or an off-balance sheet item (derivative contracts, foreign exchange contracts).

In some cases, it makes sense to define analytic application rules and process them at the PF ledger account level. Several types of balance sheet accounts are not application-specific, for example, fixed assets, cash, accounts receivable, and accounts payable. However, these account balances can still represent a significant source or use of funds and should have an internal funding credit or charge allocated to them. For most product specific balances, analyze and report at the product or instrument detail, where individual attributes (such as credit risk), or cash flow characteristics (such as loan prepayments) require individual treatment.

To minimize processing time and enhance efficiency, instruments can be aggregated into instrument pools by the Stratification application engine, using criteria and stratification rules that you define. The instrument pool is viewed and treated like a synthetic instrument and can be used by the cash flow generator as a proxy for all of the instruments that were aggregated into the instrument pool.

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PF Ledger Versus Average Daily Balance Ledger

The PF Ledger table stores current end-of-period balances. The Average Daily Balance (ADB) Ledger table (PF_LED_ADB_F00) stores average daily balances. You may prefer to use average daily balances for such calculations as monthly funds transfer charges or risk-weighted capital allocations for accounts whose balances fluctuate throughout the month (for example, cash and credit cards). PeopleSoft Financial Services Industry analytic applications enable you to choose either PF ledger or ADB ledger type balances for your processing.

Note: PF ledger is the master table that stores all account balances, and it is the sole basis for selection of rows (balances) for processing. Once a balance sheet rule processes an account, it does not process it again. The reason for this is to prevent any possibility of double-counting a balance that may be included in more than one basis ID. Similarly, a balance sheet rule can process a ledger row as either an ADB or a PF ledger type of balance, but never both.

Instrument Table Population

You load the data warehouse tables with financial instrument details from the source systems. The instrument details are stored in the FI_INSTR_F00 table. Because a product defines a type of instrument in generic terms, the product definitions (or templates) may be used as default values for instrument details in the FI_INSTR_F00 table. This may be done in cases where the source data are not available or when the analysis at hand does not warrant the loading of individual instrument details. In such cases, generic product descriptions may be sufficient. If you use product templates to populate the FI_INSTR_F00 table, the following data must be provided at a minimum from the source system:

- Instrument ID.
- Initial and current balances of the instrument.
- Start and end dates.
- Customer ID.
- Product ID.
- Current interest rate.

Note: If you want to do instrument level profitability reporting from the PF ledger, make sure that you use only 18 characters to uniquely identify each instrument ID. Use only 18 of the available 20 characters in FI_INSTRUMENT_ID. The reason is that when you run the PF_EDIT program prior to posting data to PF_LEDGER, it checks that each of these instrument IDs appears in the PF_OBJ_TBL, which can only handle field sizes up to 18 characters.

See Financial Performance Measures Process.

Common Enterprise Performance Management Warehouse Metadata and Functions

PeopleSoft Financial Services Industry applications commonly use metadata and functions from the EPM Warehouse. Brief definitions of this metadata and functions are as follows:

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Models	Enable replication of an organization's business processes for analysis of cost flow through customers, departments, and channels.
Scenarios	Point to a model ID and define the business rules, economic assumptions, and chunking selection for processing.
TableMaps	Define the physical relationships between data warehouse tables and are the foundation for datamaps.
DataMaps	Enable you to define a logical view of the physical EPM Warehouse tables by bringing together information from the different tables specified in a tablemap and defining them as if they were one entity or table.
Filters	Enable you to define what subset of data gets processed by or uses a specific business rule. Not every row of data may be necessary to process your data. Filters enable you to select only those rows that you want.
Constraints	Enable you to define business rules for processing and also let you create and reuse filters. Filters are a base for building constraints, and constraints are based on datamaps.
DataSets	Provide a user defined set of information for various engines restricting the columns used and returned rows using constraints.
User Defined Functions	Enable you to define functions one time through a common interface, then use them throughout many of the analytic applications. For example, PeopleSoft Risk-Weighted Capital uses them to build risk functions and the yield curve environment uses them to build pricing index functions.

Related Links

Financial Services Industry Implementation

Common Financial Services Industry Concepts

Here are some common concepts for PeopleSoft Financial Services Industry applications:

Historic and Forecasted Scenarios

As a general guideline, when you process historic scenarios, you use instrument-level data, whereas when you process forecasted scenarios, you use product-level data. There are, however, exceptions to this guideline. PeopleSoft gives you the flexibility, through the Attributes Options field on the Model Definition page, to determine whether processes access product or instrument-level data. The system stores instrument-level data in the FI_INSTR_F00 table and its child tables. The system stores product-level data in the FI_PRODUCT_TBL table and its child table FI_PRODUCT_SEQ.

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Accrual Basis

PeopleSoft Financial Services Industry applications, features, or both, may need you to define an accrual basis. The accrual basis measures the number of days between two dates (start date and end date) and the number of years (or portions thereof) between two dates. The system counts the days between the start date and the end date, and then divides this number by the appropriate divisor, depending on the accrual method that you select. Each of the start dates and the end dates has a specified year, month, and day.

Your choices are:

- 30/360
- 30N/360
- 30E/360
- Actual/Actual
- Actual/360
- Actual/365

These procedures explain how the accrual basis is determined for each of these options.

30/360

1. If the start date falls on the 31st of the month, then treat it as the 30th of the month.
2. If the end date falls on the 31st of the month, and the start date is the 30th of the month, then treat the end date as the 30th of the month.
3. Multiply 360 times the difference between the years of the start date and end date.
4. Multiply 30 times the difference between the months of the end date and the start date.
5. Count the days between the end date and the start date.
6. Add the results of steps 3, 4, and 5 above.
7. Divide the sum by 360.

30N/360

1. If the end date falls on the last day of February, then treat the end date as the 30th of the month.
2. If the start date falls on the last day of February, then treat the start date as the 30th of the month.
3. All of the rules for 30/360 apply (steps 3 to 7 above).

30E/360

1. If the end date falls on the 31st of the month, then treat it as the 30th of the month.
2. If the start date falls on the 31st of the month, then treat it as the 30th of the month.
3. Multiply 360 times the difference between the years of the end date and the start date.
4. Multiply 30 times the difference between the months of the end date and the start date.

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5. Count the days between the end date and the start date.
6. Add the results of steps 3, 4, and 5 above.
7. Divide the sum by 360.

Actual/Actual

1. Count the days between the start date and the end date, dividing them into two segments: number of days that fall in a leap year, and number of days that fall in a non-leap year.
2. Divide the number of days in the non-leap year by 365.
3. Divide the number of days in the leap year by 366.
4. Add the ratios in steps 2 and 3 above.

Actual/360

1. Count the days between the start date and the end date.
2. Divide by 360.

Actual/365

1. Count the days between the start date and the end date.
2. Divide by 365.

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Chapter 4

Understanding Common PeopleSoft Financial Services Industry Processes

Financial Performance Measures Process

One of the primary business processes for PeopleSoft Risk Weighted Capital and PeopleSoft Funds Transfer Pricing is the Financial Performance Measures process (FPM). Running this process enables the financial rules and calculations to be processed so that PeopleSoft Risk Weighted Capital and PeopleSoft Funds Transfer Pricing can use this data. The FPM process uses the Stratification engine (FI_SE) and Cash Flow Generator (FI_CASHFLOW) in a specific sequence to process and retrieve additional data.

All business processes are invoked using a jobstream. The following lists the basic process flow:

1. The FPM jobstream enables you to invoke the Stratification engine for aggregating instruments into pools.
2. The FPM process instructs the Cash Flow Generator to calculate the expected future cash flows for the instruments in the pool and to calculate the financial measures for the pool.
3. The FPM process makes an online call to the Yield Curve Generator process for any products or instruments needing an interest rate during processing.

   The Pricing Index Model generates the interest rates and pricing indexes for the cash flows scheduled based on the interest rate reprice dates.
4. The behavioral models calculate the effects on cash flows resulting from such events as prepayments, exercised rate lock options, and charge-offs.
5. The Curve Evaluator generates discount rates for cash flows.

   It also creates a cash flow schedule based on the interest payment schedule and interest rate reprice schedule created in the Product Definitions module.
6. The Cash Flow Generator accesses the beginning principal balance for each payment period from the Instrument Balance table (FI_IBAL_R00) or from the Instrument Pool Balance table (FI_POOLBAL_R00).

Using all these engines, the FPM process calculates financial measures, such as net present value, convexity, measures of duration, interpolation of interest rates, cash flows, calculation of net interest margin, and reconciliation of ledger account balances to their corresponding instrument or treasury position balances.

For added flexibility, you also have the option to run the Stratification application engine and Cash Flow Generator application engine separately. Run the Stratification application engine to aggregate instrument data into pool tables. You can then run the Cash Flow Generator application engine separately, using as input the instrument pools aggregated by the stratification application engine. Or, run the Cash Flow

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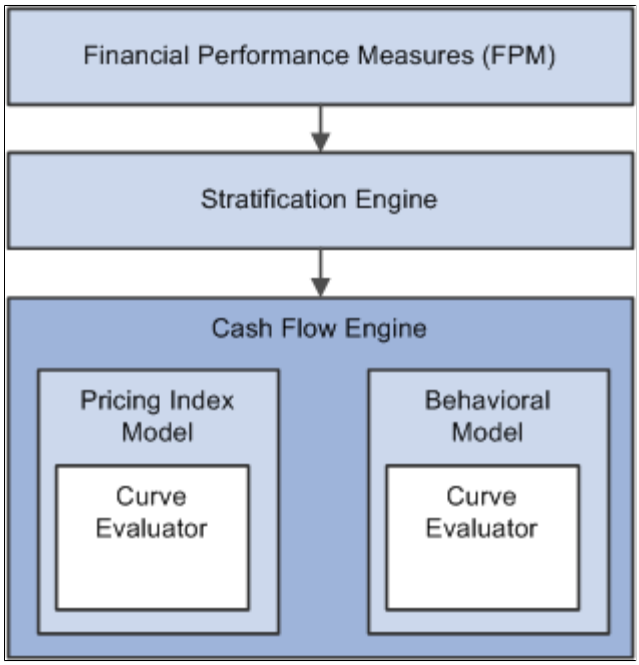
Generator application engine and the FPM process without prior stratification of instrument data into pools.

Note: The Cash Flow Generator can project cash flows both for instruments currently in the portfolio, as well as instruments forecasted to be originated at some future date. Cash flow calculations for nonforecasted data are based on data available in the FI_INSTR_F00 table and its child tables. Cash flow calculations for forecasted data are based on the rules from the Financial Products page. These rules describe the cash flow characteristics of the instruments, including type of balance, par amount, term, interest calculations, and interest dates.

Image: Basic FPM process flow

The following diagram provides a graphical representation of the basic FPM process flow, beginning with the FPM process, then the Stratification engine, and the Cash Flow engine:



Basic Processes

Now, you've set up all of the relevant pages for stratifying your data. Next, run the Stratification application engine to generate the instrument pools and aggregate individual instrument data into these pools. Do this by running a jobstream that includes the Stratification application engine in its processing, such as the FPM process or by running the Stratification application engine separately.

After you stratify your instrument data into pools, FSI application engines and the PeopleSoft Financial Services Industry applications then use these instrument pools:

- The Cash Flow Generator uses these instrument pools to efficiently process large volumes of instrument data.
- PeopleSoft Funds Transfer Pricing uses these pools to set up funds transfer pricing rates for a group of instruments.

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If stratification is requested, PeopleSoft Funds Transfer Pricing calls the Stratification application engine when the funds transfer pricing rate is based upon the results of the Cash Flow Generator, duration, average life, or strip funding.

- PeopleSoft Risk-Weighted Capital uses these instrument pools when calculating normalized loss or risk-weighted capital allocations for a group of instruments.

Note: The jobstreams listed are for the sample data PeopleSoft delivers. You can create your own jobstreams. The following table lists the basic business processes and their associated jobstreams.

Process	*Description*	*Jobstream*	*Engines Used*	*Job IDs*
FPM	Run as needed to calculate financial measures for instruments. It is designed to be run every reporting period. The FPM process combines the Stratification engine and the Cash Flow Generator into a single jobstream.	FPM	FI_FPM PF_MERGE	FPM SE_MERGE1
Stratification	Run the Stratification engine as needed only to aggregate instrument data into pool tables. You can then run the Cash Flow Generator separately, using as input the instrument pools aggregated by the Stratification engine.	STRAT	FI_SE PF_MERGE	STRAT SE_MERGE3
Cash Flow	Run as needed to generate cash flows for large volumes of instrument data using as input the instrument pools aggregated by the Stratification engine.	CASHFLOW	FI_CASHFLOW PF_MERGE	CASHFLOW CF_MERGE
Balance Sheet Reconciliation	Run as needed to calculate the difference between ledger accounts and their corresponding product or treasury position balances.	FI_RCN_BS	FI_RCN_BS PF_MERGE	FI_RCN_BS FIMERG01
Net Interest Margin Report (NIM)	Run as needed to generate net interest margin data.	FI_NIM	PF_MERGE FI_NIM	FI_NIM FIMERG02

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Process	Description	Jobstream	Engines Used	Job IDs
Portfolio Forecast	Run as needed to forecast multiple periods, product balances, target balances, and funds transfer pricing rates.	FI_FCSTFTP	FI_FCSTFTP	FI_FCSTFTP
Forecast RWC	Run as needed to forecast multiple periods, product balances, target balances by the Risk-Weighted Capital Forecast application engine.	FI_FCSTRWC	FI_FCSTRWC	FI_FCSTRWC
Credit Risk	Run as needed to generate credit risk reporting.	FI_RWC_CR	PF_MULT_CURR FI_RWC_CR PF_MERGE	FI_CURR FI_RWC_CR CR_MERGE
Monthly	Run for fiscal year or accounting period.	FI_MONTHLY	FI_RCN_BS FI_FPM FI_NIM	FI_RCNRP FPM2 FI_NIMRP
Stratification (SE Report)	Run as needed to generate instrument pools for reporting purposes.	SE_REPT	FI_REPORT PF_MERGE	SE_REPT SE_MERGE2
Instrument-Level Reconciliation	Run as needed to calculate the difference between ledger accounts and their corresponding instrument-detail level data.	FI_RECON	FI_RECON PF_MERGE	FI_RECON FI_RCN_MRG
Instrument-Level Batch Cleanup	Run as needed to clean up batch processing.	FI_DELBTCH	FI_DELBATCH	FI_DELBTCH
Error Reprocessing	Run as needed to clean up errors in the reprocessing.	FI_ERRPROC	FI_ERR_PROC PF_MERGE	FI_ERRPROC FI_ERRMERG
Instrument-Level Posting	Run as needed to post instrument-level data to the instrument ledger.	FI_POST	FI_POST	FI_POST
Instrument-Level Unpost	Run as needed to unpost instrument-level data to the instrument ledger.	FI_UNPOST	FI_UNPOST	FI_UNPOST

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Additional Processes

In addition to the basic business processes, you will use two other processes:

- Currency Conversion application engine (to convert currencies).
- Audit Utility (to audit your setup).

Currency Conversion Engine

Data is migrated into PeopleSoft EPM Warehouse from various sources, with amounts denominated in different currencies. Prior to running your PeopleSoft Financial Services Industry applications, you may want to use the Currency Conversion application engine to convert currency amounts in the data warehouse tables from/to base currency amounts to/from transaction amounts. These conversions can occur at any time, using user-defined conversion parameters.

You may need to run the Currency Conversion application engine at three points:

- Prior to running PeopleSoft Financial Services Industry applications in the instrument tables (FI_INSTR_F00, FI_IBAL_R00, and FI_ISTATUS), where the applications access their balance amounts for processing.
- After running PeopleSoft Financial Services Industry applications in the PF (performance) Journal table (PF_JRNL), which is the central point through which all PeopleSoft Financial Services Industry application output data must pass to get to the PF Ledger table.

  This converts:

  - Break fund fixed charges in base currencies, needing conversion to transaction currencies (in the FI_IBFCHRG_R00 table).
  - Break fund economic loss calculations that are in transaction currencies only, because they are based on cash flows that use transaction currencies.

    These need to be converted to the base currencies (in the FI_IBFCHRG_R00 table).
  - Fixed funds transfer pricing adjustments in base amounts only, needing conversion to transaction currencies (in the FTP_CALC_IN_F00, FTP_CALC_AC_F00, and FTP_CALC_PS_F00 tables).

- When you run PeopleSoft Funds Transfer Pricing on forecasted pools, conversion may need to occur after running the Portfolio Forecast application engine, which populates the FI_POOLBAL_R00 table with pool amounts stated in transaction currency, if the forecast which generated the pools was currency-specific.

Audit Utility

The Audit Utility identifies metadata errors in the PeopleSoft Financial Services Industry environment and applications. The Audit Utility does not need to be set up in a jobstream and can be run at any time. Any problems identified by the Audit Utility may require assistance from a software developer or data warehouse administrator. The information provided typically helps a systems person resolve issues.

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You can run the Audit Utility for any or all PeopleSoft Financial Services Industry applications. For each of your selections, the Audit Utility checks that there are no problems with the business rules.

See "Auditing PeopleSoft EPM Objects *(PeopleSoft 9.1: Enterprise Performance Management Fundamentals)*".

Primary Tables

The PeopleSoft Financial Services Industry environment has several primary tables that it uses for processing and storing data for the PeopleSoft Financial Services Industry environment and applications. These tables store historical data, including closed contracts (that is, instruments with a zero balance). The historical data is used for reporting, as well as forecasting purposes.

Some of the tables are required (indicated below with an asterisk). Others are optional and used for reporting purposes or for building user-defined constraints, which can be used throughout PeopleSoft Financial Services Industry applications when defining business rules and processes performed on subsets of data. These tables store historical data, including closed contracts (that is, instruments with a zero balance)

Table	***Description***	***Used By/For***
FI_INSTR_F00*	This is the primary record for the instrument family of tables. This functions as the parent record that stores many of the mandatory contractual instrument attributes, such as payment terms, interest rates, customer ID, and so on.	PeopleSoft Financial Services Industry applications and environment
FI_IBAL_R00*	Stores any number of balance amounts for the instruments. The balance type code is used to define the type of balance information that is supplied.	PeopleSoft Financial Services Industry applications and environment
FI_ISTATUS_R00*	Stores current status information about the instrument such as whether it's closed, sold, or non-performing, the risk rating, and current interest rate.	PeopleSoft Financial Services Industry applications and environment
FI_IEVENT_R00	Stores information on the contractual or planned cash flow events, such as draw-downs and payments, usually used for large commercial loans. Used in the cash flow calculations.	Cash Flow Generator
FI_ITRNHST_R00	Stores transaction history such as prepayments, cancelled draw-downs (both of which are used to calculate break funding charges in PeopleSoft Funds Transfer Pricing). It can also store a variety of statistics, such as number of ATM transactions that are for reporting purposes.	Cash Flow Generator

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Table	*Description*	*Used By/For*
FI_IDX_RT_H00	Stores historic interest rates.	Cash Flow Generator
FI_POOLINST_F00	Stores instrument pool information created by the Stratification application engine process as part of the Financial Performance Measures process.	FPM
FI_POOLBAL_R00	Stores aggregated balance amounts for the instrument pools.	FPM
FI_POOLCALC_R00	Stores financial measures calculated for the instrument pools.	FPM
FI_POOL_CF_R00	Stores projected cash flows calculated for the instrument pools.	FPM
FI_ICALC_R00	Stores financial measures at the instrument level.	FPM
FI_ICSTAT_R00	Stores intermediary process-instance information.	FPM
FI_IFCRULE_R00	Stores intermediary process-instance information.	FPM
FI_RCN_BS_F00	Stores reconciliation differences found by the Reconciliation process.	Reconciliation (balance sheet)
FI_RCN_DIM_F00	Stores the reconciliation differences by enterprise dimensions. This table can be used by Data Manager to allocate funds transfer pricing charges that result from reconciliation differences.	Reconciliation (balance sheet)
FI_NIM_F00	Stores summarized information for the Net Interest Margin Report process. The data are derived from the instrument pools, and from the Balance Sheet Reconciliation process (based on the balance sheet categories defined in the balance sheet rules).	Reconciliation (balance sheet)
FI_IOPTION_R00	Stores information concerning options embedded in the instruments, such as prepayment options.	Reporting
FI_IOTHER_R00	Stores any additional elements or customized instrument attributes, such as prepayment options.	Reporting
FI_IDEMOG_R00	Stores demographic information about customers.	Reporting
FI_IPRTCP_R00	Stores information about loan participations, syndications, and servicing.	Reporting

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Related Links

"Risk Management *(PeopleSoft EPM 9.1: Risk Weighted Capital)*"

Tables Accessed and Tables Updated

This section discusses the tables that are accessed and updated by these processes:

- Cash Flow Modeler
- FPM
- Yield Curve Generator
- NIM Report (Net Interest Margin)
- Stratification
- Stratification Report Pools
- Portfolio Forecast
- Balance Sheet Reconciliation
- Instrument Reconciliation
- Instrument Posting
- Instrument Unpost
- Instrument Batch Deletion

Cash Flow Modeler

Use the Cash Flow Modeler process to model cash flows interactively for an instrument or product, to explore assumptions affecting cash flows, such as the rate environment, terms, and payment characteristics of the instrument, and the effects of the behavioral model.

Tables Accessed	*Tables Updated*
FI_CF_DEFN	FI_CF_CR00
FI_CF_INSTR_SEQ	FI_CFCAL_R00
FI_CURR_DF_TBL	FI_CFE_R00
FI_CONFIG_TBL	FI_CF_TRACEFILE

Financial Performance Measures

The Financial Performance Measures application engine (FI_FPM) initiates the FPM process. This process calculates financial measures for instruments based on the financial calculation rules. It also:

- Uses the Stratification application engine and Cash Flow Generator.

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- Groups instruments by balance sheet rules, pricing constraints, and behavioral model constraints.
- Summarizes instruments into two instrument pools.
- Calculates financial measures on instrument pools.
- Assigns measures to instruments.

Tables Accessed	*Tables Updated*
FI_CALC_DEFN	FI_POOLINST_F00
FI_FCALC_SE_SEQ	FI_POOLBAL_F00
FI_FCALC_PR_SEQ	FI_POOLCALC_F00
FI_FCALC_PP_SEQ	FI_POOL_CF_F00
FI_INSTR_F00	FI_ICALC_R00
FI_IBAL_R00	
FI_PRODUCT_TBL	
FI_PRODUCT_SEQ	
FI_ISTATUS_R00	

Yield Curve Generator

The Yield Curve Generator application engine (YC_GENERATOR) initiates the Yield Curve Generator process. This process calculates yield curves based on the definitions that you've specified.

Tables Accessed	*Tables Updated*
YC_RATE_TBL	PS_YC_PNEQS
YC_RATE_HDR	PS_YC_EQS
YC_MKT_ISSUES	
YC_DEF	
YC_EQOPTS	
YC_DATADEF_TBL	
YC_DRULE	
YC_TERM_STRUCT	

NIM Report

The FI_NIM Net Interest Margin application engine (FI_NIM) initiates the Net Interest Margin (NIM) process. This process calculates the net interest margin or the difference between interest revenue and cost of funds for instruments. This process also:

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- Calculates interest income for instrument pools.
- Calculates the count and amount of new balances.
- Summarizes information by balance sheet rule and dimension.

Tables Accessed	*Tables Updated*
FI_BSR_DEFN FI_CONFIG_SEQ FI_POOLINST_F00 FI_POOLBAL_R00 FI_RCN_BS_F00	FI_NIM_F00

Stratification

The Stratification application engine (FI_SE) initiates the Stratification process. This process aggregates instrument data into pool tables. You can then run the Cash Flow Generator separately. Use the instrument pools aggregated by the stratification application engine as input.

Tables Accessed	*Tables Updated*
FI_INSTR_TAO (Internal to the application engine. Populated by the engines that call it).	FI_POOLINST_F00 FI_POOLHDR_R00 FI_POOLIREF_R00

Stratification Report Pools

The FI REPORT application engine initiates the Stratification Report Pools process. This process builds stratification pools for reporting purposes based on user-defined stratification rules.

Tables Accessed	*Tables Updated*
SE_TBL SE_GROUP_SEQ SE_AGG_SEQ SE_REPORT_DEFN SE_REPORT_SEQ FI_INSTR_F00 FI_IBAL_R00 FI_ISTATUS_R00	FI_RPTPINST_F00 FI_RPTPHDR_R00 FI_RPTPIREF_R00

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Portfolio Forecast

The FI_FCSTFTP and FI_FCSTRWC application engines initiate the Portfolio Forecast process. This process updates the forecasts generated by the Forecasting application engines based on existing cash flow output data. It uses forecasted product origination data to create new instrument pools with starting balances. It calls the Cash Flow Generator to create new cash flows for the newly created instrument pools.

Tables Accessed	*Tables Updated*
FI_FCSTELEM_F00 FI_FCST_DFN FI_POOLHDR_R00 FI_POOLINST_F00 FI_POOLBAL_R00 FI_POOL_CF_R00	FI_POOL_CF_R00 FI_FCSTFTP_R00 FI_POOLBAL_R00

Balance Sheet Reconciliation

The Balance Sheet Reconciliation application engine (FI_RCN_BS) initiates the Balance Sheet Reconciliation process. This process reconciles instrument and position balances to their respective ledger balances, based on the hierarchy and relationships defined in the balance sheet rules. This process also summarizes reconciliation amounts by dimension.

Tables Accessed	*Tables Updated*
FI_BSR_DEFN FI_CONFIG_SEQ FI_INSTR_F00 FI_BAL_R00 FI_TRPOS_F00 PF_LEDGER_F00	FI_RCN_BS_F00 FI_RCN_DIM_F00

Instrument Reconciliation

The Instrument Reconciliation process is initiated by the *FI_RECON* application engine. This process reconciles instrument balances to their respective ledger balances based on reconciliation rules. You can select the ledger table where the engine should retrieve data. You can aggregate output by several dimensions.

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Tables Accessed	*Tables Updated*
FI_IBAL_R00 FI_IBALANCE_R00 FI_IINC_R00 FI_ILDGR_F00 PF_LEDGER_F00 PF_LED_ADB_F00 PF_LGR_RCN_F00	FI_REC_DIM_F00

Instrument Posting

The FI_POST application engine initiates the Instrument Posting process. This process reconciles instrument balances to their respective ledger balances based on reconciliation rules. This process also posts data from the FI Journal to the instrument ledger. These tables hold ledger data at the instrument level. Posting occurs based on batch ID.

Tables Accessed	*Tables Updated*
FI_IJRNL_F00	FI_ILDGR_F00

Instrument Unpost

The FI_UNPOST application engine initiates the Instrument Unpost process. This process unposts data by batch ID from the FI_ILDGR_F00 table. Once unposted, the batch cannot be reposted.

Tables Accessed	*Tables Updated*
FI_ILDGR_F00	FI_IJRNL_F00

Instrument Batch Deletion

The FI_DELBATCH application engine initiates the Instrument Batch Deletion process. This process deletes data from the FI_IJRNL_F00 table by batch ID. Once a batch has been posted to the FI_ILDGR_F00 table, it cannot be deleted from the FI_IJRNL_F00 table.

Tables Accessed	*Tables Updated*
FI_IJRNL_F00	FI_IJRNL_F00 (deletes batches by batch ID)

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Chapter 5

Setting Up Seasonality Groups and Miscellaneous Parameters

Defining Seasonality Groups

Seasonality groups enable you to identify cyclical patterns that you can factor into your projections and modeling results. For example, you might want to consider seasonality in your product forecasts when forecasting balance amounts or origination count. You might also consider account seasonality in your behavioral models when projecting a percentage of deposit growth or loan charge-off rate.

Page Used to Define Seasonality Groups

Page Name	*Definition Name*	*Navigation*	*Usage*
Seasonality Groups	AF_SEASGP_PNL	Financial Services Industries, Models and Parameters Setup, Behavioral Models, Seasonality Groups	Define seasonality groups, which can be used by product forecasts or behavioral models.

Setting Up Miscellaneous Parameters

This section discusses how to:

- Create business calendars for various countries.
- Define ledger account codes.

Pages Used to Set Up Miscellaneous Parameters

Page Name	*Definition Name*	*Navigation*	*Usage*
Business Calendar	BUS_CALENDAR_TR	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Currency Calendar, Business Calendar	Create business calendars for various nations.
Market Exchange	FI_MARKET_EXCH	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Market Exchange	Create lookup codes for market securities exchanges. The system uses these for futures and reporting purposes only.

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Page Name	*Definition Name*	*Navigation*	*Usage*
Funds ID	FI_FUND_ID_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Funds ID	Create fund IDs to track investment funds associated with a financial instrument or account.
Ledger Account Codes	FI_LDGRACCT_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Ledger Account Codes	Identify the revenue and expense accounts associated with an instrument. The ledger account codes differentiate between interest income and expenses, fee income and expenses, and any unearned income or fees waived. The system uses ledger account codes as a key to the instrument ledger table (FI_ILDGR_R00).
Treasury Position Code	FI_POS_SRC_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Treasury Position Code	Define treasury position codes. PeopleSoft Funds Transfer Pricing and PeopleSoft Risk-Weighted Capital do some of their processing on off-balance sheet treasury position accounts, such as foreign exchange derivatives, precious metals, or any other account position that is the result of trading room and treasury operations.
Demographics Codes	FI_DEMOGTYP_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Demographics Codes	Create codes to identify the demographic or statistical information about a customer or a financial instrument that is stored in the Instrument Demographic table (PS_FI_IDEMOG_R00).
Participation IDs	FI_PRTCP_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Participation ID, Participation IDs	Define participation ID codes. You can use these to identify the participants involved in, or responsible for, a financial instrument. For example, you might sell 30 percent of the balance of a particular loan to another bank or investor. Use participation ID codes to list your participants and provide lookup verification in your instrument tables. The system uses Participant ID as a key to the Participation table (FI_IPRTCP_R00).

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Page Name	*Definition Name*	*Navigation*	*Usage*
External Source Systems	PF_SRC_SYS_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, External Source Systems	Identify the source system (transaction system) where the original instrument information is maintained. Source system is an attribute on the Instrument (FI_INSTR _F00) table. You may have more than one source system for entering data into the EPM Warehouse.
Balance Types	FI_BALTYPE_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Balance Types	Define the type of instrument balances stored in the warehouse and processed by PeopleSoft Financial Services Industry applications. The Instrument Balance table (PS _FI_IBAL_R00) is set up so that multiple balance types and balance amounts can be stored for each instrument. The Balance Type field in this table identifies the type of balance for a specific record. Examples of different balance types that you might want to set up are current balance, average daily balance, period ending balance, or commitment balance. You can modify these values, which might vary depending on your business needs.
Instrument Lookup Codes	FI_DIMTYPE_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Instrument Lookup Codes	Identify other attributes of an instrument that do not occur under one of the other categories. The system uses them as a key to the Instrument Other (FI _IOTHER_R00) table. For example, you could use the Instrument Other table to store demographic information or any other information that does not fit into one of the other instrument tables.

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Page Name	*Definition Name*	*Navigation*	*Usage*
Option Types	FI_OPTION_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Option Codes, Option Types	Define the types of options that may be part of a financial instrument. Use Instrument Option table (PS_FI_IOPTION_R00) to store the options that are embedded in a financial instrument. Examples of instruments with embedded options are callable bonds, interest rate locks, and loans with prepayment options.
Risk Ratings	FI_RISKRATE_TBL	Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Risk Rating, Risk Ratings	Create a risk rating code.

Business Calendar Page

Use the Business Calendar page (BUS_CALENDAR_TR) to create business calendars for various nations.

Navigation

Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Currency Calendar, Business Calendar

Use the Business Calendar page to create calendars that affect the markets outside the organization's domestic operations. For instance, banks in the United States commonly trade in Eurodollar futures that derive their value from the London Inter Bank Offered Rates (LIBOR) index. The markets that handle Eurodollar futures are based in Chicago. The holiday schedule of the Chicago Mercantile Exchange (CME) typically coincides with the U.S. bank holidays, but not with Great Britain, where the LIBOR index rate is determined.

Two examples occur in the months of January and February. In those months, Martin Luther King Jr. and President's Day are U.S. bank holidays that occur in the middle of the month, and in observance of which the CME is closed. This is the time when the Eurodollar futures contracts close. The International Monetary Market (IMM) date is the Monday preceding the third Wednesday of each month, and this is the day that the Eurodollar futures contract (such as the January or February 1 month LIBOR 1MLB contract) values. Because the CME is closed on the IMM date, when the 1MLB contracts are valued, they must determine the value of their existing January or February 1MLB contracts the day after the holiday. If the system cannot determine that the exchange was closed on the IMM date, it provides the previous business day's closing price (the Friday preceding the holiday). Erroneous data is generated for reports such as (mark-to-market) income and activity reports that feature expired and closed futures contracts generating accounting (gain and loss) statements for hedge accounting entries.

The business calendar informs the system about the conflicting holiday schedule for financial instruments. The system allows the user to supply the information necessary to value the contract correctly based on user-defined offset rules (that is, the day after the holiday).

To set up business calendars:

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1. Select the days of the week that are normal business days for this country.

   The system selects Monday through Friday by default.

2. Select the date of the business holiday observed in that specific country and the holiday name.

Ledger Account Codes Page

Use the Ledger Account Codes page (FI_LDGRACCT_TBL) to identify the revenue and expense accounts associated with an instrument.

The ledger account codes differentiate between interest income and expenses, fee income and expenses, and any unearned income or fees waived. The system uses ledger account codes as a key to the instrument ledger table (FI_ILDGR_R00).

Navigation

Financial Services Industries, Models and Parameters Setup, Miscellaneous Parameters, Ledger Account Codes

To define ledger account codes, specify the type of income or expense item identified by this ledger account code in the Account Type field. Values are:

Interest Income/Expense	Identifies instrument revenue or expense balances (or both) that are to be included when calculating the net interest margin on an instrument.
Fees Income/Expense	Identifies any fees charged or received for an instrument. Fees are included for profitability calculations but are excluded on any net interest margin calculations.
Other Income/Expense	Identifies other sources of income or expense items such as adjustments.
Fees Waived	Identifies any fees waived due to compensating balances or fees waived by an account officer.
Unearned Income/Expense	Identifies income or expenses generated by assets categorized as nonperforming.

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Chapter 6

Using the Yield Curve Generator

Understanding Yield Curves

Yield Curves incorporate data from various market sources, such as Bloomberg, Reuters, and Telerate, by using the Extract-Transform-Load (ETL) process. You can use the ETL process to use user-defined source data for developing yield curves. You can specify the origin of the source data, define generic bond market volatility, credit spread, currency source data, and identify the type of data that you use to create the curves. Once you specify the source data for your curves, you then specify the curve interpolation methods to define how to interpret the source data.

There are two engines used to define yield curves, the Curve Generator application engine and the Curve Evaluator application engine.

The Curve Generator component enables you to set up the rules for interpolating a set of data points. Once you establish the setup rules, you can add, modify, or delete these rules. You do not need to set up new rules each time the Curve Generator component processes information.

The Curve Evaluator component is a process called by other support modules. This component is an online module that calculates rates as requested by other FSI applications. When the Curve Evaluator application engine receives a set of parameters from the calling application, the Curve Evaluator application engine calculates the requested rates and returns them to the calling application.

Common Concepts

The pages used to set up Yield Curves all share common concepts. This section discusses those concepts:

- Curve interpolation.
- Bootstrapping.
- Short-term yields.
- Issue types and frequencies.
- Derived data.

Curve Interpolation

The Curve Generator application engine supports the following interpolation methods:

- *Hermite cubic:* Creates a sequence of cubic equations between each data point.

  These cubic equations are controlled by the change in the curve at the two end points.

- *Cubic spline:* Creates a set of cubic equations like the hermite cubic, but the cubic spline guarantees that both the change in the curve and the rate of change at the quoted points (the slope and curvature of the function) remain constant.

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If you select this interpolation type, you need to further specify the way that the spline curve handles the left and right end points of each data set. This is done by modifications to individual equations that comprise the contiguous segments of the yield curve. Options are:

- *Continuous curl:* The change in curvature, or curl, is made continuous between the first and second, and penultimate and last points of the data set.
- *Curvature constraint:* Describes the behavior of the graphed point over the domain, enabling you to specify the degree of curvature at the first and last points of the data set.
- *Slope constraint:* Enables you to specify the slope at the endmost points.

- *Linear segments:* Creates straight lines between each succeeding pair of quoted yields.
- *Step function:* Creates a yield curve from a given data point that looks like horizontal line segments.

  Until specifying a new yield, the step function uses the exact same yield for all subsequent maturities. This function can be very useful when referencing the prime rate because it has no maturity component. The Step function ignores the current term structure, therefore, no meaningful term information can be derived from it.

Interpolations are used on the Derived Data page and more specifically on the curve interpolation pages.

Bootstrapping

Using a technique called *bootstrapping,* the Curve Generator can take a coupon that is bearing market issue, strip its future cash flows (coupon payments) and convert them into a set of zero-coupon bearing market issues. To initiate bootstrapping, assign a coupon frequency to the coupon that is bearing market issue. If you do not select a coupon frequency value in the Market Issues page, the Curve Generator assumes that the market issue is non-coupon bearing. Once you set up the appropriate data in the Market Issues page, the Curve Generator can interpret the differences between zero-coupon market yields and coupon-paying yields.

Short-Term Yields

You must specify an overnight or short-term yield if you need rates from a given yield curve within maturities that are shorter than those that are in the source data. For example, source information from the data set includes a 30-day maturity point that is given by a treasury bill. However, when you require a term structure that includes maturities for overnight, two days, three days, one week, and so on, you must define those points with data that you determine is appropriate for those points. The Overnight Fed Funds is a commercial rate that is available if you do not have an inhouse funding curve with a more desirable set of data points for defining those short-term maturities.

Issue Types and Frequencies

You define issue types and frequencies on the Market Issues page. The issue types and frequencies available for use are as follows:

- *Singular issues:* When the issue type is singular, the pricing information for the exact instrument that the CUSIP code designates becomes active and is later used for data set information.

  Singular issues do not have a predefined issue calendar and typically are nonstandard financial instruments. For example, bank notes are short-term money-market debt instruments that are issued in

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various denominations and maturities. Each bank note has a unique value, and the institution attaches a CUSIP code to track it.

- *Repeating issues:* The most recent issuance (also called on the run issuance) for a market issue is used to designate the data set point.

  Repeating issues have an anticipated frequency. For example, treasury notes have standard value and maturity, and they use the most recently issued instruments when building a yield curve. If you specify the market issue as a repeating issue, you must also set up an issue frequency and nominal tenor.

- *Issue frequency:* Indicates the periodicity for the issuance (for example, 52-week treasury bills are issued every 30 days).

- *Nominal tenor:* A surrogate tenor.

  Periodically organizations offer new security issues for notes and bonds. The nominal tenor acts as a surrogate tenor for these products according to their properties. A treasury bill, for example, may have an actual maturity of 28 days from issuance, but the nominal tenor assigned to this product may be 30 days. This facilitates the construction of term structures such as the Treasury Curve.

Derived Data

Derived data creates composite curves from multiple sources. Use the Derived Data page to define curves that are derived from operations performed on multiple curves. For example, you might define a term structure of credit spreads as the difference between a term structure of corporate bonds and the risk-free curve.

Alternatively, you can create curves by performing operations on two or more existing curves and designating the interpolation method that provides the desired result. For example, you can create a term structure by averaging the LIBOR and CD yields to comprise the overnight to two-year rates and arrive at the two-to-ten-year rate by using treasury notes and positively shifting by 150 basis points. By including the 30-year treasury bond rate, you can complete construction of the newly defined curve. A credit spread curve can be constructed by subtracting the risk-free curve from a curve that is composed of corporate bonds.

Note: The risk free curve is typically defined by the Treasury Curve. You can define the risk-free curve according to your business practices.

- The *lag frequency* defines a historic period of time when you want your calculation to begin.

  The lag frequency period is not included in the rolling average interest rate calculation unless the value is set to zero. For example, if today is February 2002, and you set the lag frequency to three months and the rolling average frequency to eight months, the application calculates the rolling average from November 2001 to April 2001. The lag period from February 2002 to December 2002 is not included in the interest rate calculation.

- A *rolling average,* also called a moving average, is an average of a series of numbers that is recomputed regularly by adding the most recent data and dropping the oldest one. Some Funds Transfer Pricing methodologies recommend using a rolling average to calculate the transfer price for indeterminate deposits. This provides a smoother, more consistent rate and argues that it's more representative of the cost of funding rather than using a more volatile daily rate.

- A *rolling average frequency* defines the span of time that is being used to calculate a rolling average.

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The data within this time span is used to calculate the rolling average rates. Rolling averages are based on existing rolling average rates. A rolling average can only be calculated based on a previously defined data set.

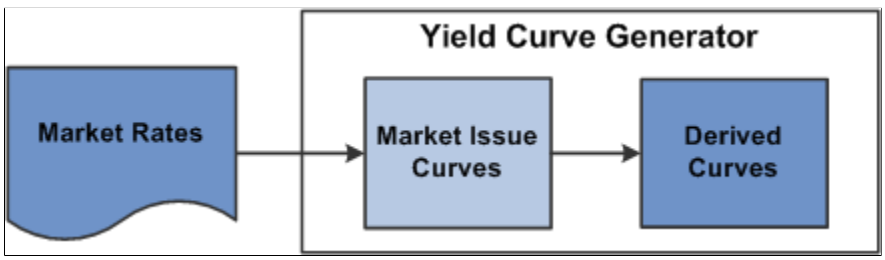
Note: Because the Treasury Curve comprises issues varying in maturity from an overnight to a 30-year bond, nominal tenors are specified for each treasury product that you want to use in constructing curves. This eliminates the need for an exact day count for each issue every time that you want to construct a yield curve.

Understanding Rolling Average Calculations within the Yield Curve Generator

In order to create derived yield curves, market rates are first loaded to the rate tables (PS_YC_RATE_HDR and PS_YC_RATE_TBL), either using the ETL process or data entry pages. Running the Yield Curve Generator creates the market issue curves then the derived curves based off of those market issue curves. The output of both curve types is stored in the PS_YC_PNEQS table.

Image: Derived Yield Curve Overview

This example illustrates the fields and controls on the Derived Yield Curve Overview. You can find definitions for the fields and controls later on this page.



As stated earlier, a rolling average is an average of a series of rates that is recomputed regularly by adding the most recent data and dropping the oldest one. PeopleSoft Interest Rate Environment uses a simple rolling average method, which is the unweighted mean of the previous '*n*' data points. For example, the formula for a five day rolling average appears as follows:

Image: Formula for Five Day Rolling Average

This example illustrates the fields and controls on the Formula for Five Day Rolling Average. You can find definitions for the fields and controls later on this page.

$$SRA = \frac{R_t + R_{t-1} + R_{t-2} + R_{t-3} + R_{t-4}}{5}$$

*Where **R** = Rate and **t** = as of date of the rate.

Note that the denominator is dependant upon the number of data points you have loaded into the system rather than the number of days in your rolling average frequency. This is important for rolling averages calculated on more than five days since market rates are not available for weekends and holidays. Thus, if you have a 30 day rolling average the time span that the Yield Curve Generator searches is between t and t-29, but will calculate the average based on the number of rates it finds (which in a normal month is approximately 22 when you exclude eight weekend days).

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Known Data Points (Market Issue Points)

The following table displays the base market rates that were sourced from the Treasury and processed in the Market Issue Curve (TREAS_SET1) table; these are the rates that the Yield Curve Generator uses to calculate the rolling average.

Image: Base Market Rates

This example illustrates the fields and controls on the Base Market Rates.

Curve Date	1 Day	1 Month	3 Months	6 Months	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	20 Years	30 Years
3/1/2010	0.09	0.09	0.13	0.19	0.32	0.8	1.34	2.28	3.04	3.61	4.41	4.56
3/2/2010	0.08	0.09	0.14	0.19	0.32	0.8	1.33	2.27	3.04	3.62	4.42	4.57
3/3/2010	0.09	0.09	0.14	0.19	0.33	0.82	1.34	2.27	3.04	3.63	4.43	4.58
3/4/2010	0.09	0.09	0.14	0.19	0.35	0.86	1.38	2.28	3.03	3.61	4.4	4.56
3/5/2010	0.09	0.11	0.15	0.2	0.38	0.91	1.43	2.35	3.1	3.69	4.49	4.64
3/8/2010	0.1	0.11	0.16	0.21	0.39	0.9	1.43	2.36	3.13	3.72	4.52	4.68
3/9/2010	0.1	0.12	0.16	0.21	0.37	0.89	1.43	2.34	3.11	3.71	4.53	4.68
3/10/2010	0.12	0.12	0.15	0.21	0.39	0.92	1.45	2.39	3.14	3.73	4.53	4.69
3/11/2010	0.12	0.12	0.16	0.22	0.4	0.97	1.5	2.43	3.16	3.73	4.51	4.66
3/12/2010	0.12	0.1	0.15	0.24	0.41	0.97	1.5	2.42	3.15	3.71	4.47	4.62
3/15/2010	0.1	0.12	0.17	0.24	0.4	0.96	1.49	2.42	3.15	3.71	4.48	4.63
3/16/2010	0.11	0.14	0.16	0.24	0.41	0.93	1.47	2.37	3.1	3.66	4.43	4.59
3/17/2010	0.14	0.13	0.15	0.23	0.41	0.95	1.47	2.38	3.1	3.65	4.41	4.56
3/18/2010	0.13	0.14	0.16	0.26	0.41	0.98	1.52	2.44	3.14	3.68	4.43	4.59
3/19/2010	0.14	0.13	0.16	0.25	0.42	1.02	1.56	2.48	3.16	3.7	4.41	4.58
3/22/2010	0.13	0.13	0.15	0.24	0.41	1.01	1.54	2.43	3.12	3.67	4.41	4.57
3/23/2010	0.13	0.11	0.14	0.23	0.4	1.02	1.55	2.44	3.13	3.69	4.43	4.6
3/24/2010	0.11	0.12	0.14	0.23	0.44	1.08	1.67	2.62	3.28	3.84	4.56	4.72
3/25/2010	0.12	0.12	0.14	0.25	0.44	1.1	1.69	2.65	3.37	3.91	4.63	4.77
3/26/2010	0.12	0.11	0.14	0.25	0.43	1.04	1.64	2.59	3.31	3.86	4.6	4.75
3/29/2010	0.11	0.11	0.15	0.24	0.42	1.04	1.65	2.6	3.32	3.88	4.61	4.76
3/30/2010	0.11	0.13	0.16	0.24	0.44	1.06	1.65	2.6	3.32	3.88	4.59	4.75
3/31/2010	0.13	0.15	0.16	0.24	0.41	1.02	1.6	2.55	3.28	3.84	4.55	4.72

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The next figure displays the 30 day rolling average calculations for all known points (which are the rates at each of the market issues) and for the 3/31/10 curve:

Image: Rolling Average Calculation

This example illustrates the fields and controls on the Rolling Average Calculation.

Curve Date	3/31/2010	E	
	A	B	C	D
	Maturity Date (x)	**Sum of Rates**	**Number of Rates**	**Rolling Average Rate (y)**
	4/1/2010	2.58	23	0.1121739
	4/30/2010	2.68	23	0.1165217
	6/30/2010	3.46	23	0.1504348
	9/30/2010	5.19	23	0.2256522
	3/31/2011	9.1	23	0.3956522
	3/31/2012	22.05	23	0.9586957
	3/31/2013	34.63	23	1.5056522
	3/31/2015	55.96	23	2.4330435
	3/31/2017	72.72	23	3.1617391
	3/31/2020	85.73	23	3.7273913
	3/31/2030	103.25	23	4.4891304
	3/31/2040	106.83	23	4.6447826
Maturity Date	7/5/2010	F		
Interpolated Rate	0.1545227	G		

Column A represents the Maturity Date for each Market Issue.

Column B represents the sum of the rates for each Market Issue from 3/1/10 – 3/31/10.

Column C represents the number of data points sourced from the Treasury and loaded into the system.

Column D represents the average of the series 3/1/10 – 3/31/10 for each Market Issue, or Column B / Column C.

For each maturity date in Column A, the rolling average rate in Column D will tie to the yield rates on the View Yield Curve page.

See View Yield Curves Page.

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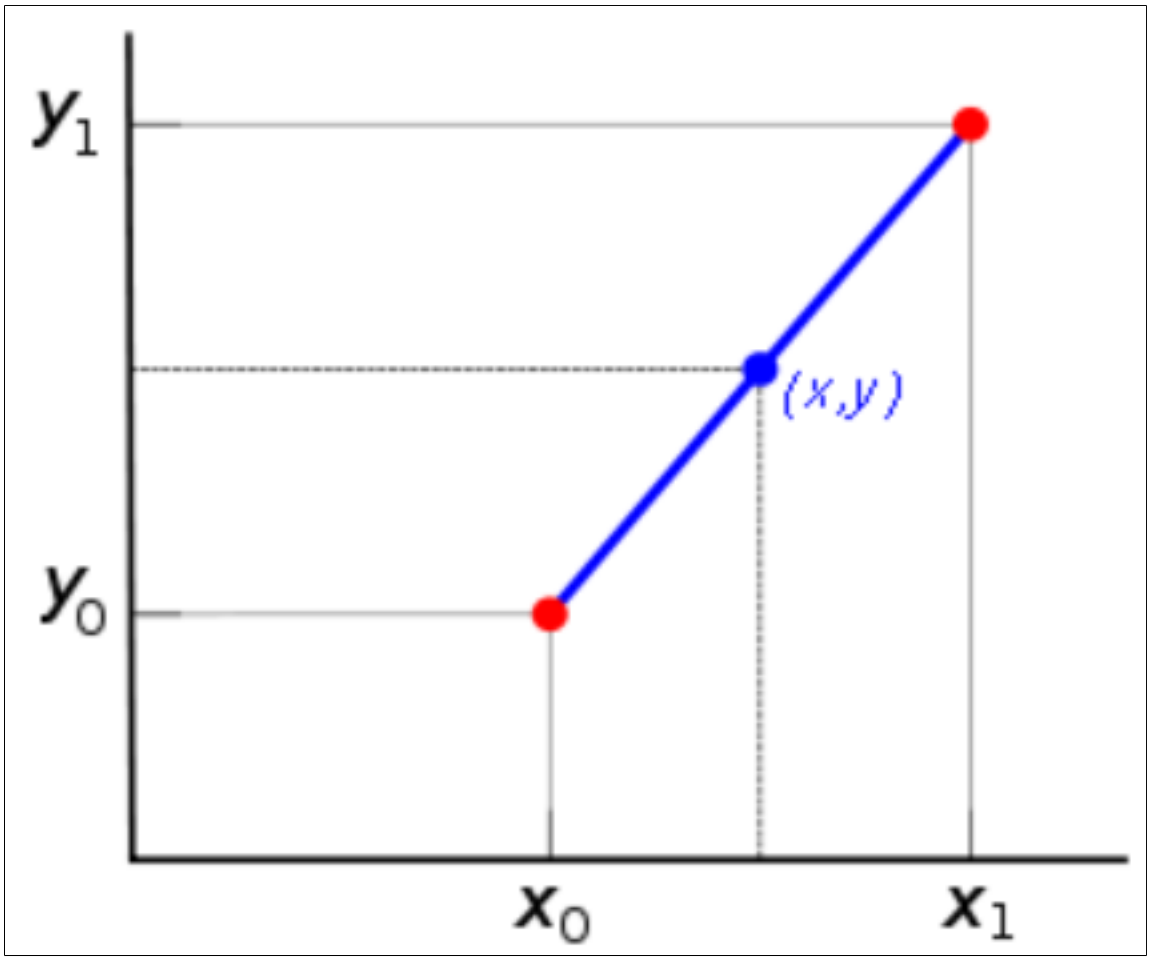
Interpolated Points

Linear interpolation is a method of curve fitting using linear polynomials. If two known points are provided by the coordinates (x_0, y_0) and (x_1, y_1), the linear interpolant is the straight line between these points.

Image: Linear Interpolation - Coordinates

This example illustrates the fields and controls on the Linear Interpolation - Coordinates. You can find definitions for the fields and controls later on this page.



In the graph above, the blue line represents the linear interpolant as determined by the two red points, and the value y at x may be found by linear interpolation. The algebraic expression is as follows:

Image: Algebraic Expression of Linear Interpolation Method

This example illustrates the fields and controls on the Algebraic Expression of Linear Interpolation Method. You can find definitions for the fields and controls later on this page.

$$\frac{y - y_0}{x - x_0} = \frac{y_1 - y_0}{x_1 - x_0}$$

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If you solve for y, which is the unknown value at x, the expression appears as follows:

Image: Algebraic Expression of Linear Interpolation Method as solved for Y

This example illustrates the fields and controls on the Algebraic Expression of Linear Interpolation Method as solved for Y. You can find definitions for the fields and controls later on this page.

$$y = y_0 + (x - x_0)\frac{y_1 - y_0}{x_1 - x_0} = y_0 + \frac{(x - x_0)y_1 - (x - x_0)y_0}{x_1 - x_0}$$

You can use the above formulas to check the interpolated rate or you can use MicroSoft Excel, which makes use of the same mathematics in its Forecast function:

```
=FORECAST(Maturity Date (F) ,
OFFSET(Rates (D),MATCH(Maturity Date (F) ,Maturity Date (A),1)-1,0,2),
OFFSET(Maturity Date (A) ,MATCH(Maturity Date (F) ,Maturity Date (A),1)-1,0,2))
```

Setting Up Rolling Averages

To set up rolling averages:

1. Define derived data parameters on the Data Source page.

   See Data Source Page for Rolling Averages.

2. Define yield curve, interpolant, rolling average, and rolling average frequency parameters on the Derived Data page.

   Note: You can also define lag frequency on the Derived Data page, but it is optional.

   See Derived Data Page.

3. Associate the data set to the yield curve on the Curve Interpolants page.

   See Curve Interpolants Page.

Loading Source Data for the Yield Curve Generator

Typically, source data enters the application during the ETL process. However, if you have market interest rates that do not need frequent updating or source data that you create, you can bypass the ETL process and enter these data sets manually. The Curve Generator application engine obtains the rates and maturities and processes them according to the defined data sets and interpolation methods.

Note: Do not modify data imported from a subscription service such as Bloomberg, Reuters, or Telerate. Also, you cannot manually add information for composite source data.

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Page Used to Load Source Data for the Yield Curve Generator

Page Name	*Definition Name*	*Navigation*	*Usage*
Yield Curve DataSet Entry	YC_DATAENTRY_PNL	Financial Services Industries, Interest Rate Environment, Load Source Data, Yield Curve Dataset Entry	Manually enter market interest rates. This page populates the YC_RATE_HDR and YC_RATE_TBL tables.
Generic Curve DataSet Entry	YC_GEN_ENTRY_PNL	Financial Services Industries, Interest Rate Environment, Load Source Data, Generic Data Entry, Generic Curve DataSet Entry	Manually enter generic data.

Yield Curve DataSet Entry Page

Use the Yield Curve DataSet Entry page (YC_DATAENTRY_PNL) to manually enter market interest rates.

This page populates the YC_RATE_HDR and YC_RATE_TBL tables.

Navigation

Financial Services Industries, Interest Rate Environment, Load Source Data, Yield Curve Dataset Entry

Image: Yield Curve Dataset Entry page

This example illustrates the fields and controls on the Yield Curve Dataset Entry page. You can find definitions for the fields and controls later on this page.

	*Market Issue Code	Maturity Date	Currency Code	Yield	Coupon	Price
1	TSY_D30	01/16/2002	USD	4.25000	0.00000	100.00000
2	TSY_D90	01/16/2002	USD	4.50000	0.00000	100.00000
3	TSY_Y01	10/16/2002	USD	4.75000	0.00000	100.00000
4	TSY_Y02	10/16/2003	USD	5.00000	5.00000	100.00000
5	TSY_Y05	10/16/2006	USD	5.50000	5.50000	100.00000
6	TSY_Y10	10/16/2011	USD	6.00000	6.00000	100.00000
7	TSY_Y30	10/16/2031	USD	6.50000	6.50000	0.00000

Select a currency code that you want to use for reporting purposes. Market issues such as LIBOR rates are reported in multiple currencies. Enter a yield. The yield is the market-determined yield to maturity at the time of analysis. Enter a coupon value to indicate the rate of return to the bearer for each interest coupon payment. Only when the Market Issue is noncoupon bearing should this rate be equal to zero and the price be equal to 100. Enter a price when the source data is a discounted financial product such as treasury bonds or corporate bonds. Indicate the quoted market price on a par 100 basis, or leave it blank. On the Generic Curve DataSet Entry page, enter *x* and*y* values to indicate the spread.

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Setting Up the Pricing Index Model

This section provides an overview of the Pricing Index Model and discusses how to:

- Set up the Pricing Index Model.
- Adjust the Pricing Index.
- Define the Pricing Index step functions.

To set up global definitions for a particular pricing model, you need to create it within the Price Index Model, then specify which indexes the model uses. You can do this on the Price Index page. The Price Index page enables you to define a target index that specifies the characteristics of the pricing rule. For example, you can define whether the target index behaves differently in declining rate environments versus rising environments or whether it is a smooth or step function. Also, the calculated value of the target index (as defined by the index equations) is validated against the key underlying rate for reasonableness. The adjusted target index is constrained by a range that is defined as a fixed spread against the key underlying rate.

Pages Used to Set Up the Pricing Index Model

Page Name	***Definition Name***	***Navigation***	***Usage***
Price Index	FI_PRINDX_RULE	Financial Services Industries, Interest Rate Environment, Dataset Definition, Pricing Index, Price Index	Select whether you want the target index to be defined as an equation or a single-point from a specified yield curve.
Index Adjustment	FI_PRINDX_ADJ	Financial Services Industries, Interest Rate Environment, Dataset Definition, Pricing Index, Index Adjustment	Sets up the index adjustments.
Step Function	FI_PRINDX_STEP	Financial Services Industries, Interest Rate Environment, Dataset Definition, Pricing Index, Step Function	Specifies a step function (if applicable).
Pricing Index - Notes	FI_PRINDX_NOTES	Financial Services Industries, Interest Rate Environment, Dataset Definition, Pricing Index, Notes	Enter setup notes.

Understanding the Pricing Index Model

An appropriate product rate forecast is necessary to capture reasonable interest rate spreads between future products and market rates (and between asset and liability products themselves) in all simulated rate environments. The Pricing Index Model enables you to model future product pricing rates by using market interest rates (for example, treasury, LIBOR, or derived yield curves) as inputs for user-defined product-pricing algorithms. Product rates can be derived in market or deterministic scenarios. The predicted rates can then be used:

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- By the Cash Flow Generator application engine to calculate future product rates for variable rate products.

  The Cash Flow Generator uses these refinance rates (future product rates) to set the repricing rate on variable rate products and to ascertain the level of prepayment and deposit runoff. For example, the Cash Flow Generator uses the Pricing Index Model rates for calculation of future payment amounts on adjustable rate mortgages.

- By the Behavioral Models to calculate future prepay and runoff rates.

  These models use future product rates for the calculation of their respective prepayment or deposit runoff rates.

- To assign future product rates to forecasted volumes that are generated by Portfolio Forecast.

Use the Pricing Index Model to define indexes upon which the rate that is paid or charged for an individual product is based. This may be as simple as identifying a single rate from a yield curve (for example, the seven-year CMT from the U.S. Treasury curve) or a combination of rates from different yield curves. You can include other defining variables, such as a lag component or the addition or subtraction of rate spreads in the model.

The Pricing Index Model is scenario aware. For example, if the index rate is calculated from a treasury rate and the treasury curve is shocked by 100 basis points, the Pricing Index Model uses the shocked value as its input. The only requirement is that you specify the appropriate rate assumption for the scenario definition. There is no need to redefine Pricing Index Models in order to run a shocked scenario impacting all product rates. (The supported scenarios are market and deterministic)

The Pricing Index Model can use the Function Evaluator for calculating formulas leading to assumptions in building pro forma financial statements.

This section discusses:

- Pricing Index Model definitions.
- Target index definition.
- Smooth and step functions.
- Index adjustments.
- Key underlying interest rates.
- Deltas.

Pricing Index Model Concepts

Whether you create a model from an index or a yield curve, you can define pricing models that behave differently in a rising rate environment and in a declining rate environment. For example, you can define a systematic widening (or narrowing) of spreads in a rising (or declining) rate environment. You also can define indexes that respond continuously to the movement of the underlying interest rates or that move as a step function. The creation of a step function index models the pricing behavior of administered rates

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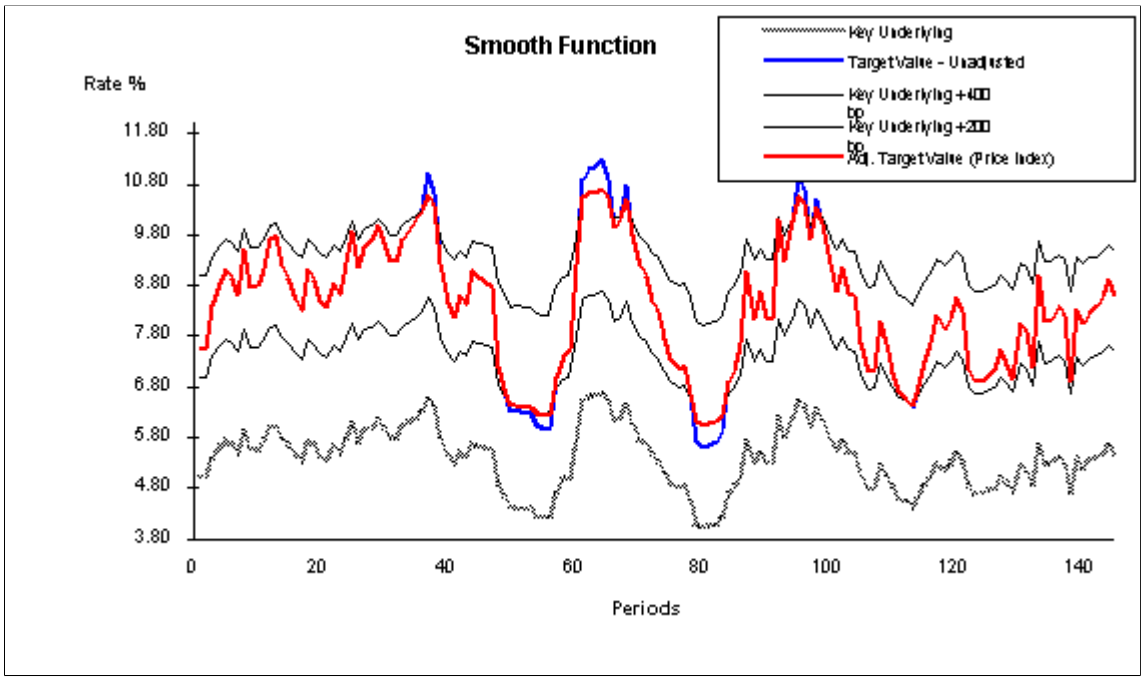
(that is, money market accounts, demand deposit accounts, and so forth). You can also define constraints in the pricing model that ensure reasonable spread relationships in extreme interest rate environments.

Image: Price index concepts illustrated

The following illustration represents these concepts. Here, the price index is evaluated against key underlying values in a smooth function. The unadjusted target value is evaluated against the key underlying rate for reasonableness. This test can be defined as a spread against the key underlying. This test ensures that the unadjusted target value never falls out of this reasonableness range, regardless of the absolute level of interest rates.



The red line (adj. target value) is the most important to follow. This represents the price index after adjustments; it remains within a defined spread range from the key underlying value (for this example, they are set at +400 and +200 bp). In this case, the adjusted target value is the price index because the value remains within the defined constraints. The blue line represents the unadjusted target value before evaluation against the constraints. In the periods where there is no blue line visible, the red line and the blue line are equal and there is no constraint violation. Where the blue line is visible, it exceeds the constraints and therefore cannot be the price index. The gray line is the original key underlying value that does not have any constraints.

Target Index Definition

The Target Index page enables you to choose whether you want the target index to be defined as an equation or a single point from a specified yield curve. Target indexes that are defined from two separate equations can be defined for a rising rate environment and a declining rate environment, or one function can be used for both rate environments. The determination of whether to use the upward or downward equation is based on the change in the key underlying value. Options are *Upward = Downward* to create a single equation or*Upward < > Downward* to create two different equations for the respective change in direction. Use*Single Point Index f*or creating a price index that is keyed to one rate from a specified yield curve.

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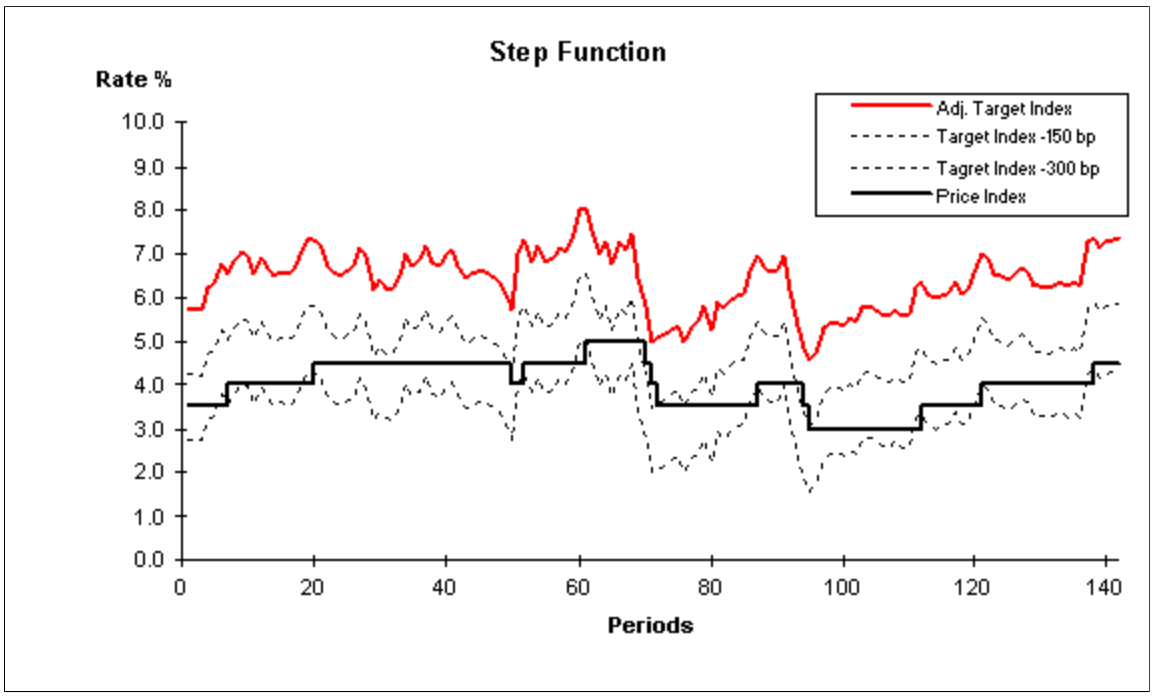
Smooth and Step Functions

The Index Adjustment page enables you to assign a step function to the adjusted target index. Select *Smooth* if you want a price index that continuously moves in response to the movement of the target index. Select*Step* (for step function) if you want the price index to move only when the spread between the price index and the target index is in excess of a specific threshold for a defined period.

Image: Smooth and step functions

Movement of the step function is defined by the criteria in a range that you specify that affects a change in the price index value. The step function range is defined as a minimum and maximum spread relative to the adjusted target index. As long as the price index value stays within this range, it does not change. If the price index drifts below or above the range (for a consecutive period of time that is also defined by the user) it is adjusted upward or downward. The level of adjustment may be defined to be an absolute move or a percentage of the difference between the current rate and the target index. The following graph illustrates this concept:



The solid, red line represents the price index (adjusted target index) that you define in the Price Index page after it is evaluated against the key underlying rate that is defined in the Index Adjustment setup page. The dotted lines represent the range that you define as the allowable spread between the adjusted target index and the current index value (product rate). The solid, angular line is the way that the adjusted price index responds to the step range and adjusted target index.

Index Adjustments

The Index Adjustment page enables you to define the parameters that are evaluated against the target index for a reasonableness test.

The target index is the result of the equation or the single point rate as defined in the previous page. The target index may be based upon a single forward rate from a single yield curve, or it may be a blend of multiple rates from more than one yield curve. The target index is evaluated for reasonableness against a key underlying rate The target index changes as a result of changes in the equation parameters; however, sometimes certain changes can lead to values that are considered unrealistic. For example, the equation is

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defined as three-month LIBOR raised to the 1.25 power to capture an increased spread dynamic in higher rate environments. This might be fine when three-month LIBOR is 4 percent, returning a target index rate of 5.65 percent. However, this may not work well when three-month LIBOR is 8 percent, resulting in a target index of 13.45 percent. In this example, it may be desirable to ensure that the index is never greater than three-month LIBOR plus 300 basis points. The Index Adjustment page enables you to define the parameters that test the target index for reasonableness in all rate environments and constrain the value based on those tests.

Key Underlying Index Rates

(Appears only if you specify *Index* in theKey Rate Type field). Specify the type of key underlying index that you want. Index key rate types are available for you to set up adjustment curves instead of using market rates for target rate adjustments. For example, let's say that the benchmark for setting product rates is the Prime Rate or 11th District COFI (cost of funds index). These must be defined as an index because they are not market-traded rates or instruments that can be used to construct a yield curve. Consequently, if you want to ensure that the product rates (defined by a function) are always within a reasonable benchmark, this is how you accomplish that.

Note: An index ID cannot be defined as the key underlying rate for itself.

Deltas

This field captures the rate change rule that is applied to the price index in a declining rate environment. This field may appear as Downward Delta (bp) orDownward Percent (%) depending on which option you chose in theAdjustment Method field. The downward delta is the basis point change subtracted from the price index if the threshold-interval test is true. The downward percentage is the relative basis point change subtracted from the price index if the threshold-interval test is true. It is calculated as a percentage of the spread between the price index and the target index.

Captures the rate change rule that is applied to the price index in a rising rate environment. This field may appear as Upward Delta (bp) orUpward Percent (%) depending on which option you chose in theAdjustment Method field. The upward delta is the basis point change added to the price index if the threshold-interval test is true. The upward percentage is the relative basis point change added to the price index if the threshold-interval test is true. It is calculated as a percentage of the difference between the price index and the target index.

Price Index Page

Use the Price Index page (FI_PRINDX_RULE) to select whether you want the target index to be defined as an equation or a single-point from a specified yield curve.

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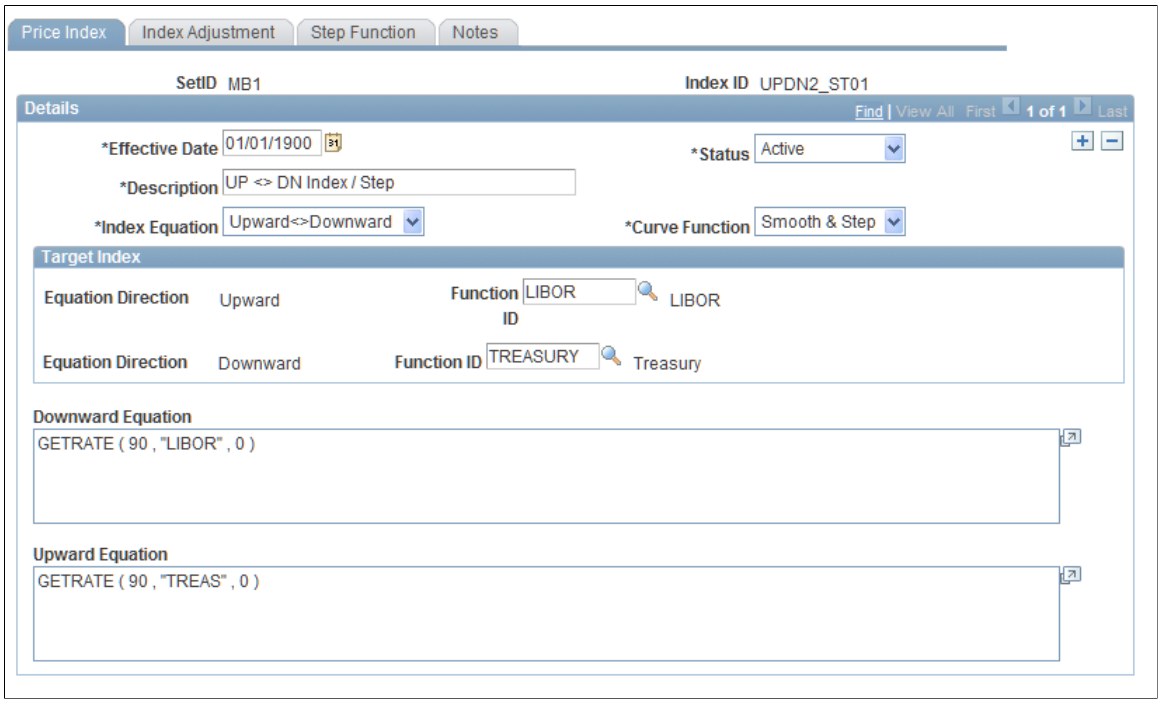
Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Pricing Index, Price Index

Image: Price Index page

This example illustrates the fields and controls on the Price Index page . You can find definitions for the fields and controls later on this page.



Note: This is a dynamic page. The options that you choose in the fields may activate or deactivate additional pages and fields.

Set up general price index information. Define the target index by selecting *Upward <> Downward* (for two equations), *Upward = Downward* (for one equation), or*Single Point Index* (for yield curve rate) in the Index Equation field. Select a curve function. Options are*Smooth* or*Smooth & Step.*

Set up specific target index information. These are the fields that may be displayed depending on the target index that you define:

Equation Direction Specify equation directions by associating a function ID for the equations. Then, enter the values for the downward or upward equations in their respective text boxes.

Yield Curve ID Set up a yield curve ID to act as a point of reference for the target index. Define the date on the curve in the Maturity field. Indicate the date of the curve (relevant to the evaluation date) that you want to be evaluated in theLag field.

If you define the target index by using equations, you need to set up the Index Adjustment page. (Skip this process if you use yield curves to define the index.) If not, you can optionally enter setup notes on the Notes page.

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Index Adjustment Page

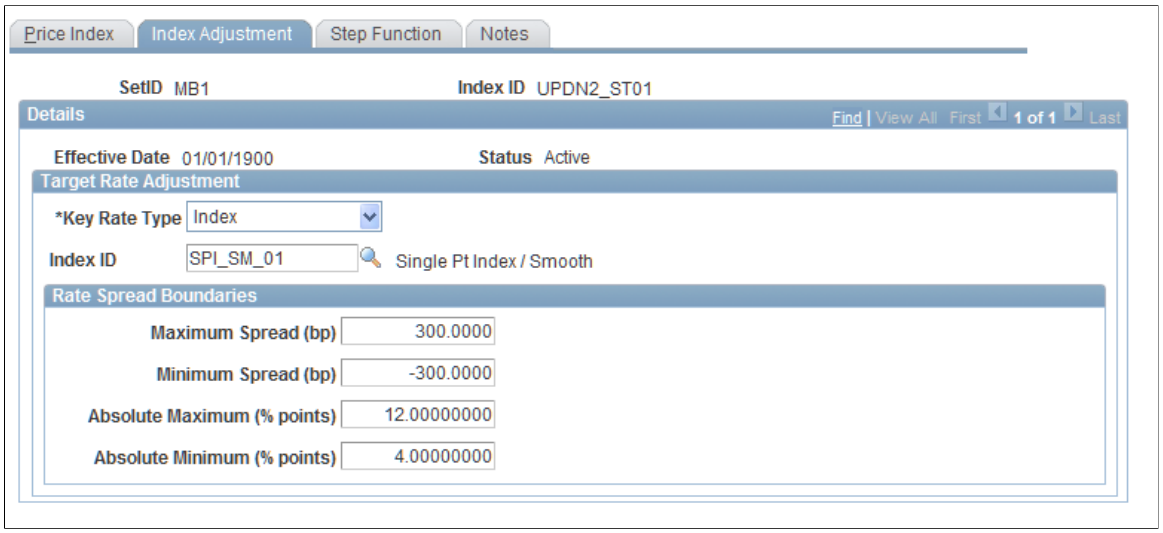
Use the Index Adjustment page (FI_PRINDX_ADJ) to sets up the index adjustments.

Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Pricing Index, Index Adjustment

Image: Index Adjustment Page

This example illustrates the fields and controls on the Index Adjustment Page. You can find definitions for the fields and controls later on this page.



On the Index Adjustment page, specify the type of key underlying value that you want the target index evaluated against by specifying a key rate type. Options are *Yield Curve* or*Index.*

- If you select *Yield Curve,* specify the corresponding yield curve code and maturity.
- If you select *Index,* specify the corresponding index ID.

Then, enter values in basis points for the upper and lower boundaries of the target index spread in the maximum and minimum spread fields. Enter values in percentage points for the maximum and minimum rates of the target index over its entire life in the absolute maximum and minimum fields. When you are finished, set up the Step Functions page.

Step Function Page

Use the Step Function page (FI_PRINDX_STEP) to specifies a step function (if applicable).

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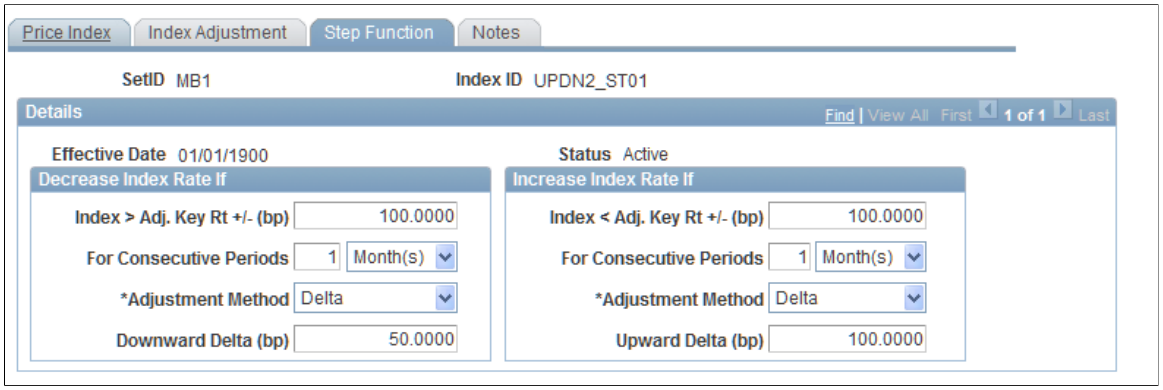
Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Pricing Index, Step Function

Image: Step Function Page

This example illustrates the fields and controls on the Step Function Page. You can find definitions for the fields and controls later on this page.



Set up the Step Functions page for both equation and yield-curve defined target indexes. Specify the upper and lower boundaries of the spread threshold in basis points. Do this in the Index <> Adj. Key Rt +- (bp) fields. Use the decrease column for upper boundaries and the increase column for lower boundaries. Values may be positive or negative.

In the For Consecutive Periods fields, specify the interval of consecutive periods for which the threshold test must be true to initiate a change in the price index (for both upper and lower boundaries).

In the Adjustment Method fields, indicate the manner in which the step function adjusts to fluctuations in interest rates and periods. Select*Delta* for an absolute change or*% of Difference* for a relative change in the price index if the threshold test and the interval test are true.

In the Delta fields, specify the rate change rule that is applied to the price index in a declining (Downward Delta) or rising (Upward Delta) environment.

Setting Up Market Issues

This section discusses how to set up market issues.

Page Used to Set Up Market Rules

Page Name	*Definition Name*	*Navigation*	*Usage*
Market Issues	YC_MKT_ISSUE_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Market Issues	Define data that is derived from market sources having a variety of different attributes. A market issue must be created for every market rate that is used.

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Market Issues Page

Use the Market Issues page (YC_MKT_ISSUE_PNL) to define data that is derived from market sources having a variety of different attributes.

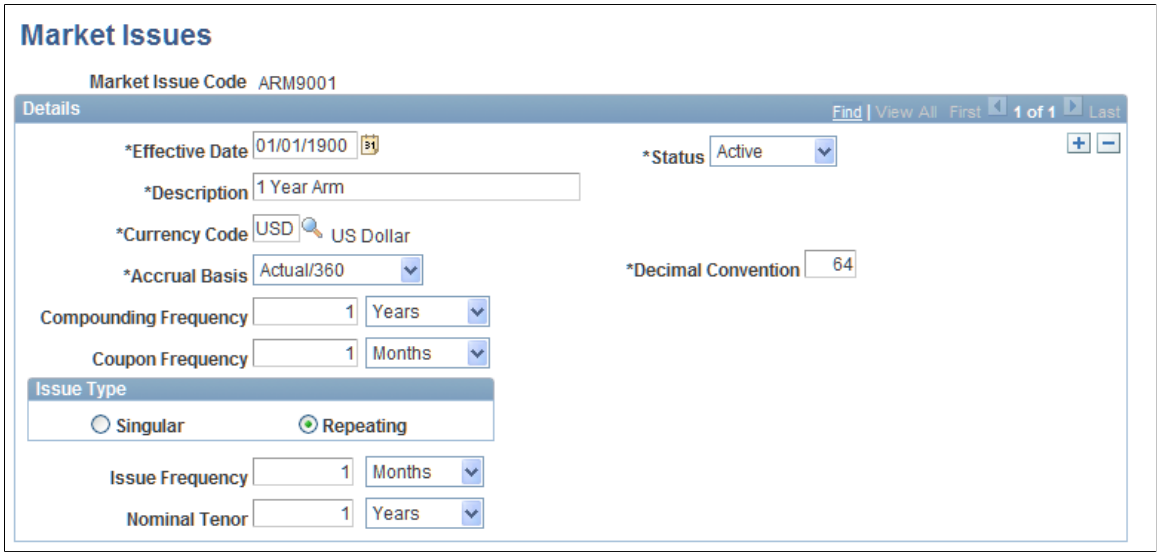
A market issue must be created for every market rate that is used.

Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Market Issues

Image: Market Issues page

This example illustrates the fields and controls on the Market Issues page. You can find definitions for the fields and controls later on this page.



To set up the Market Issues page, select a currency code, accrual basis code, and a decimal convention.

Currency Code The currency code is used for reporting purposes. Market issues, such as LIBOR rates, are reported in multiple currencies.

Accrual Basis Code Defines how the number of days between data points on a yield curve is calculated.

Coupon Frequency Select the compounding frequency and coupon frequency. The coupon frequency determines if the Curve Generator bootstraps the yield curve in which this market issue is represented. When no value is selected, the Curve Generator assumes the market issue is discounted (noncoupon bearing).

Then, select the issue type. If you select *Singular,* define a maturity date and a CUSIP code. If you select*Repeating,* define an issue frequency and a nominal tenor.

Setting Up Curve Sets

This section provides an overview of operation codes and discusses how to:

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- Define the curve sets data sources.
- Define the curve sets market issues.
- Define the curve sets derived data.
- Define the curve sets generic data.

To set up curve sets, set up the Data Source page. On this page, you specify the data type that you use. This data type field determines which of the following additional pages you set up:

- Generic Data page.
- Market Issues page.
- Derived Data page.

Pages Used to Set Up Curve Sets

Page Name	***Definition Name***	***Navigation***	***Usage***
Data Source	YC_DATA_SRC_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Data Source	Set up the data source within the system.
Generic Data	YC_GENERIC_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Generic Data	Use when creating term structures from generic data sets.
Market Issues	YC_MRKTYIELD_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Market Issues	Used to create a synthetic curve composed of numerous market issues with different attributes as and assign those combined market issues to a new data source.
Derived Data	YC_COMPST_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Derived Data	Used to create composite curves.
Curve Sets - Notes	YC_DATA_NOTES_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Notes	Use page for setup notes.

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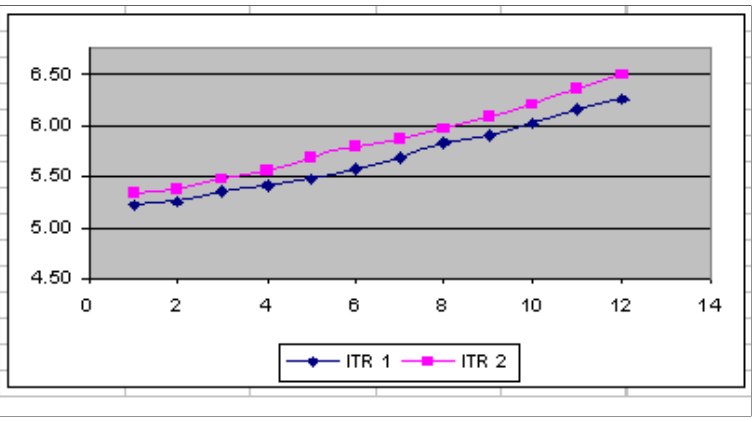
Understanding Operation Codes

Operation codes are used to calculate new data based on existing data sets. These codes are used on the Derived Data page.

Image: Operation codes

This chart illustrates some examples of operation codes:

Data Points		
Time	ITR 1	ITR 2
1 month	5.22	5.34
2 month	5.25	5.37
3 month	5.36	5.48
4 month	5.41	5.56
5 month	5.48	5.68
6 month	5.57	5.79
7 month	5.68	5.86
8 month	5.83	5.97
9 month	5.90	6.09
10 month	6.02	6.21
11 month	6.16	6.35
12 month	6.25	6.50



The operation codes are:

- Average (AVG)
- Also
- Difference (DIFF)
- Minimum (MIN)
- Maximum (MAX)
- Shift
- Shift Range
- Splice
- Sum

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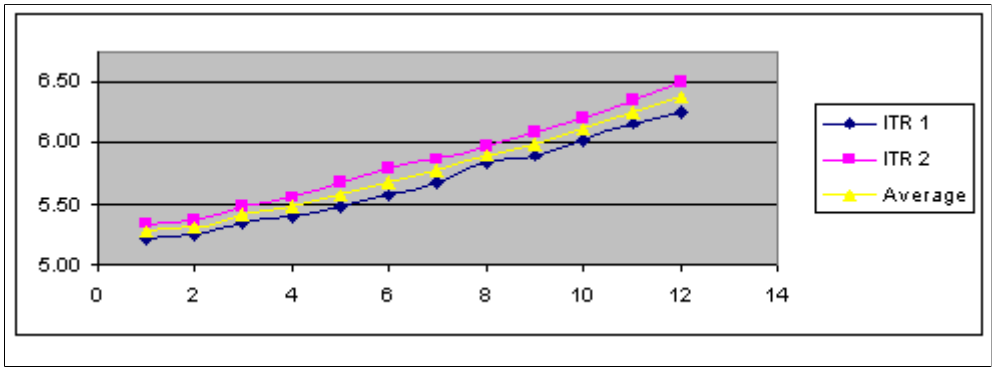
AVG

Image: AVG

Average returns the average value between two values. For example, following is a plot of internal transfer rate 1 and internal transfer rate 2, with the average of the two data sets making up the third plot as the average of the two data sets:



ALSO

Also adds a new source to an already calculated operation and repeats this calculation with the result of the previously calculated result and the new source. Also is most likely used in conjunction with the AVG operation code to average an additional data source with the previously averaged values.

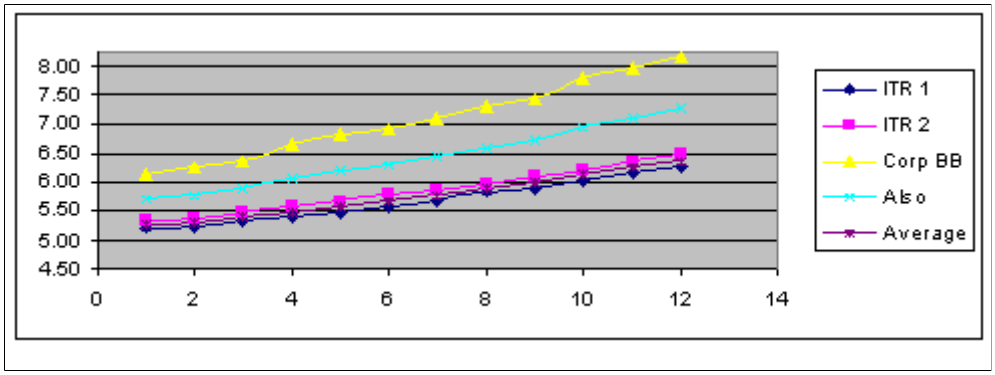
For example, the ITR 1 curve and the ITR 2 curve are averaged by using the AVG operation code. In addition, you want to calculate the average between this newly calculated average (comprised of the averaged data set ITR 1 and ITR 2) and the Corp BB curves. This is done by using the ALSO operation code.

```
(ITR 1 + ITR 2) /2 = Average value
```

```
(Average + Corp BB) /2 = Also value
```

Image: ALSO

The following graph illustrates the ALSO operation code:



Note: *Average* represents the average between ITR 1 and ITR 2.*Also* represents the average between average and Corp BB.

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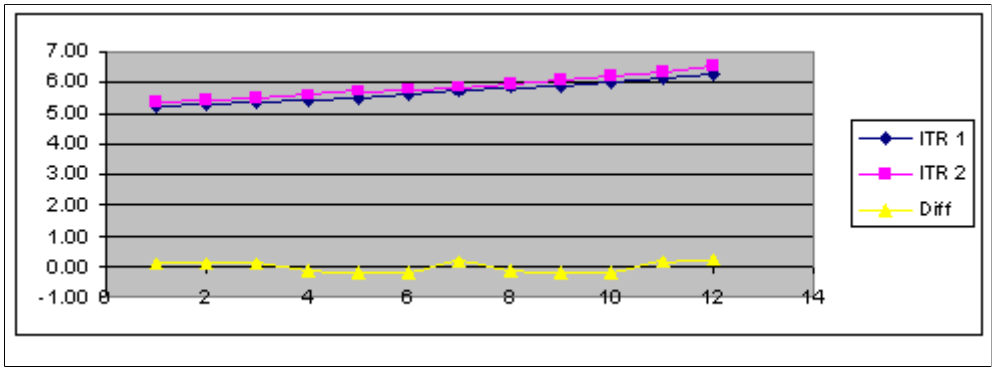
DIFF

Image: DIFF

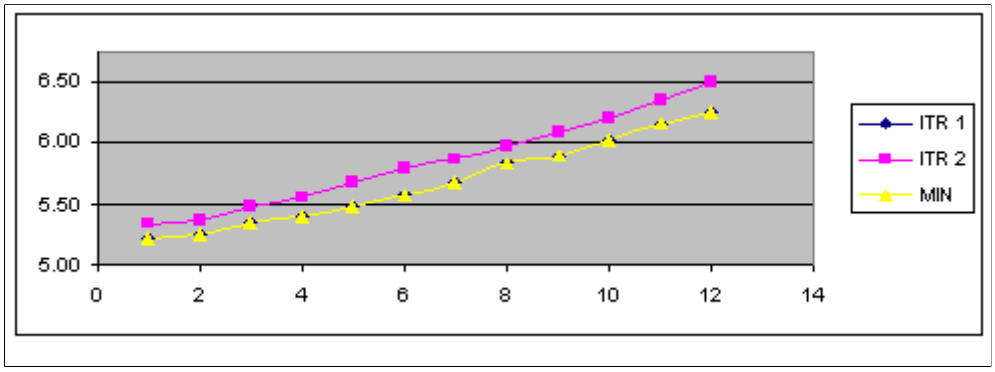
This operation code calculates the absolute difference between two yields. *DIFF* subtracts the lower from the higher value and displays the new value. No negative values can result from this operation. The following graph illustrates the DIFF operation code.



MIN

Image: MIN

MIN calculates the absolute minimum value from two sources. This operation code compares two data sets and selects the lowest representative data point between the two data sets. The following graph illustrates the MIN operation code.



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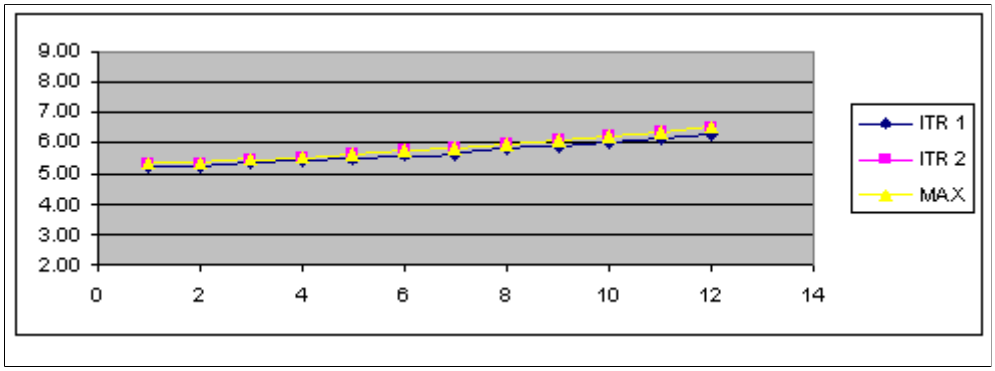
MAX

Image: MAX

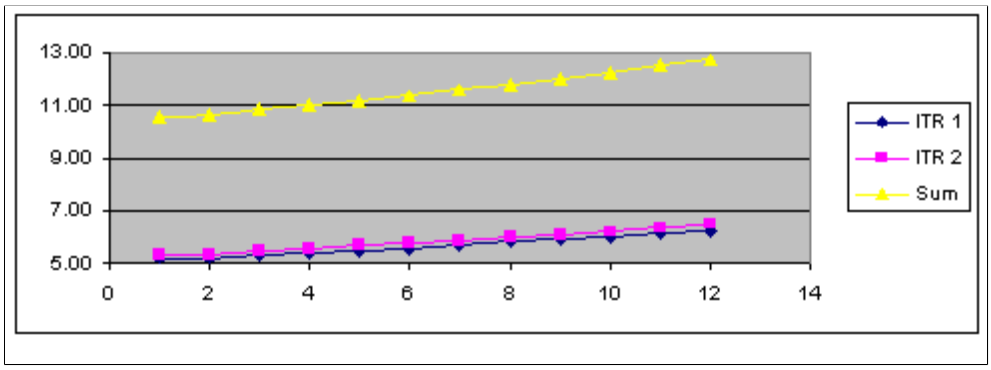
MAX calculates the absolute maximum value from two sources. This operation code compares two data sets and selects the greatest representative data point between the two data sets. The following graph illustrates the MAX operation code.



SHIFT

Image: SHIFT

The *SHIFT* operation code allows the user to apply a basis point shift to an existing data set. The basis point shift is applied to the entire data set. The following graph illustrates the SHIFT operation code.



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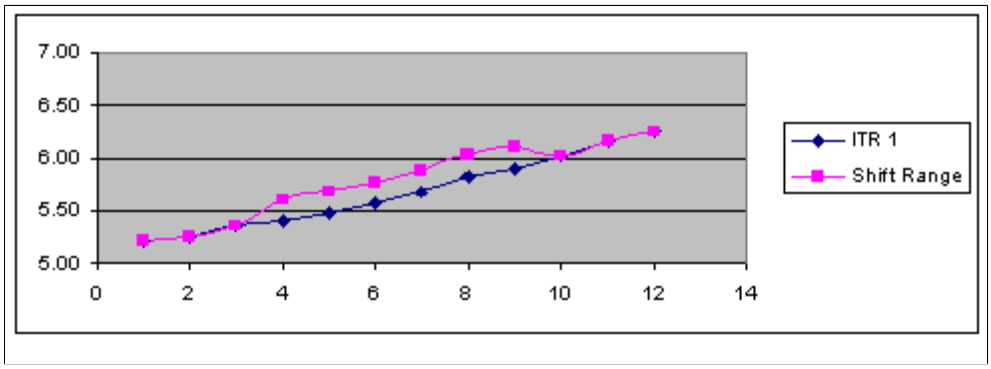
SHIFT RANGE

Image: SHIFT RANGE

SHIFT RANGE allows the user to apply a basis point shift to an existing data set that is within a specified time frame. The time frame is specified with a start maturity and an end maturity, which are defined in days, months, or years rather than as actual dates. The following graph illustrates the SHIFT RANGE operation code.



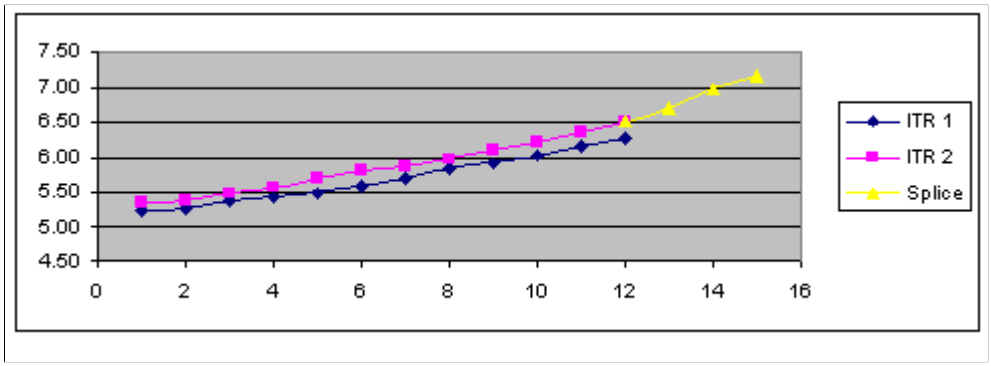
SPLICE

Splice divides an existing curve into a new curve with two or more data sources or types of interpolants.

Note: A curve's interpolant can be spliced only if Global Interpolant is*not* selected.

Image: SPLICE

The following graph illustrates the SPLICE operation code.



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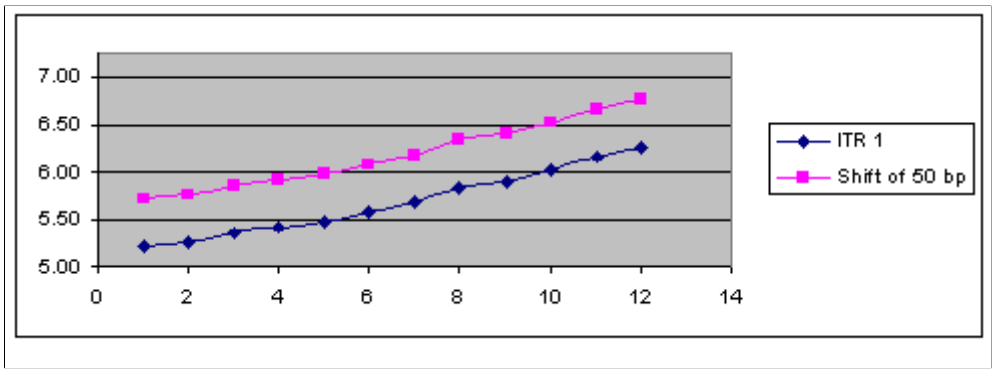
SUM

Image: SUM

The *SUM* operation code adds the data points of two data sets and creates a third data set with the totals. The following graph illustrates the SUM operation code.



Data Source Page

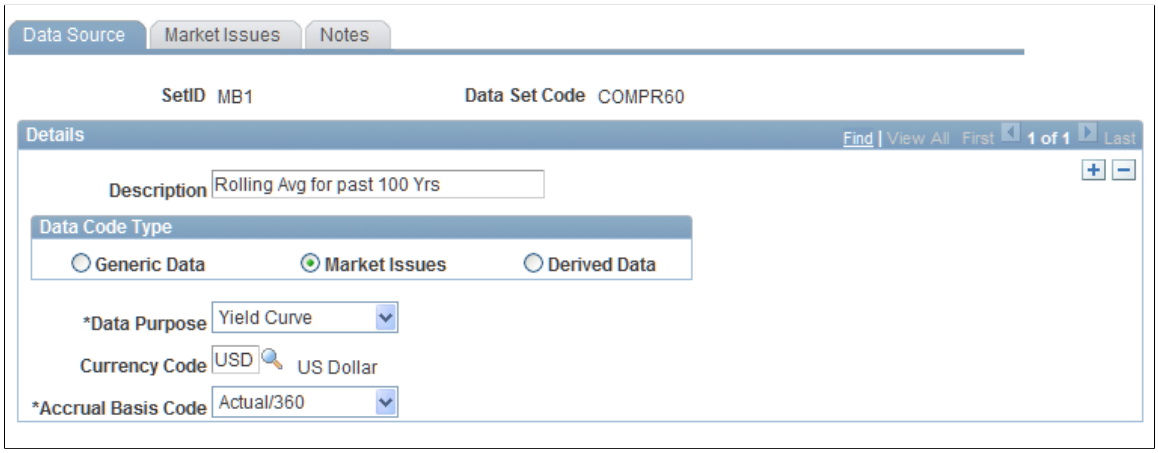
Use the Data Source page (YC_DATA_SRC_PNL) to set up the data source within the system.

Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Data Source

Image: Data Source page

This example illustrates the fields and controls on the Data Source page. You can find definitions for the fields and controls later on this page.



Specify the type of data sets from which you construct the yield curves. Options are:

- Generic Data.

  The source data is composed of user-defined data. You supply the x-y axis coordinates and units of measure for this data.

- Market Issues (default).

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The market rate instrument data is assigned to this source data.

- Derived Data.

  Create your own data from more than one market source. Your choice determines the type of tab that follows the Data Source tab.

Specify the purpose for these data set points. Options are *Yield Curve, Commodity, Credit Spread, Foreign Exchange, Volatility,* or*Other.* Specify the currency code and the accrual basis code. Set up the second tab (subsequent Curve Sets page). This tab varies according to the selection in theData Type field.

Data Source Page for Rolling Averages

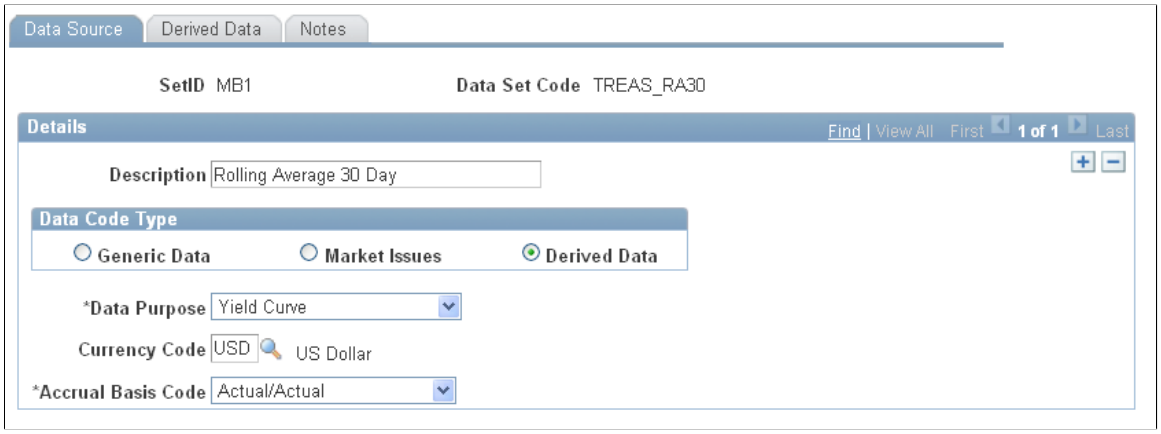
Use Data Source page for rolling averages

Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Data Source.

Image: Data Source page for rolling averages

This example illustrates the fields and controls on the Data Source page for rolling averages. You can find definitions for the fields and controls later on this page.



Data Code Type

You must select *Derived Data* for a rolling average curve, meaning that values are calculated or derived from another yield curve.

Note: You first set up a Market Issues curve that sources rates from the market. In the page shot above, there is a Treasury curve called TREAS_SET1 that is populated using daily rates submitted by the U.S. Treasury.

Data Purpose

You must select *Yield Curve* for a rolling average curve.

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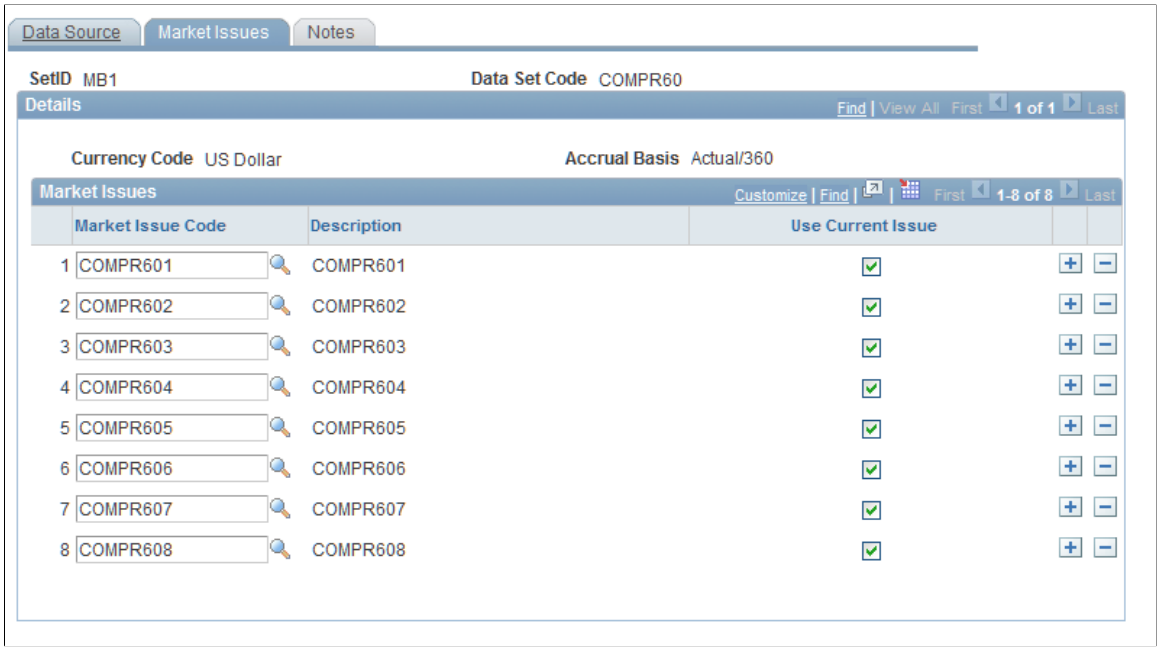
Market Issues Page

Image: Market Issues page

This example illustrates the fields and controls on the Market Issues page. You can find definitions for the fields and controls later on this page.



Select a market issue code where you are prompted. Select from codes that you previously set up on the Market Issues page. Specifying a code in this field enables you to create a synthetic curve comprised of numerous market issues that have different attributes and assign those combined market issues to a new data source.

There is a minimum number of data points (market issues that you must select for the curve set definition) to generate unique curve results. This minimum number varies depending on the yield curve interpolation method: 1 for step, 2 for linear, 3 for hermite cubic, and 5 for cubic spline.

Derived Data Page

Use the Derived Data page (YC_COMPST_PNL) to used to create composite curves.

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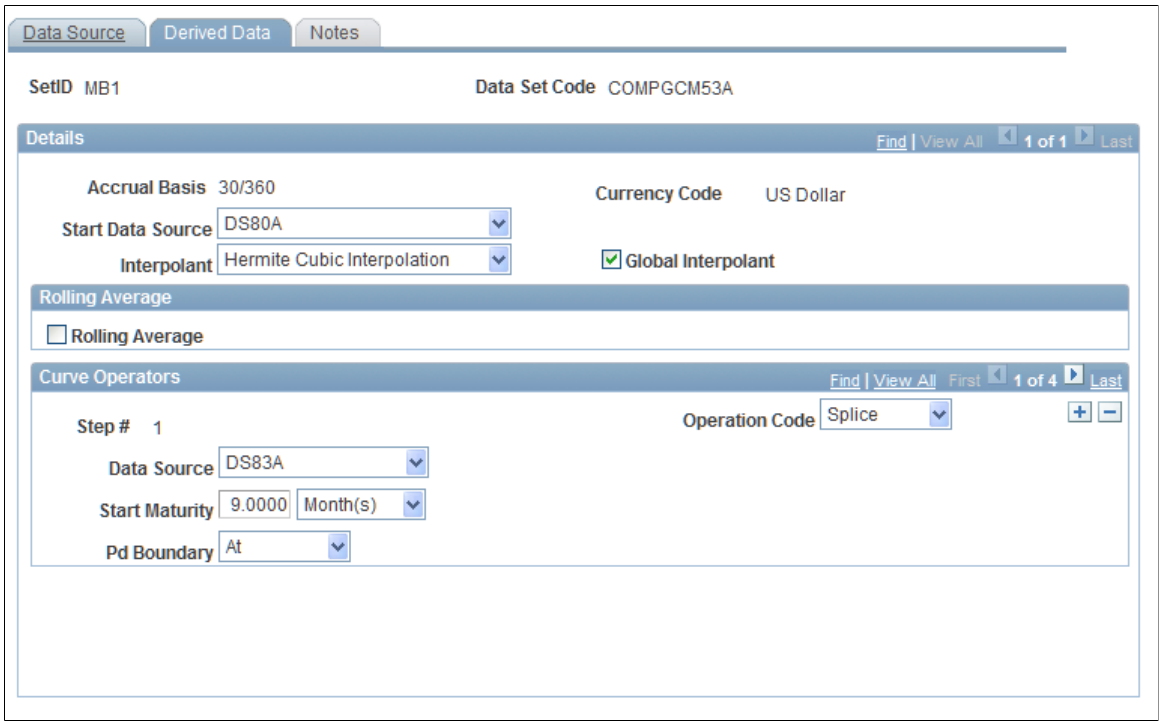
Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Derived Data

Image: Derived Data page

This example illustrates the fields and controls on the Derived Data page. You can find definitions for the fields and controls later on this page.



To set up the derived data page, specify the source data that you want to use for this composite curve in the Start Data Source field. Should the construction of data points that you specify require more source data, select an interpolant to use in fitting a curve to the data points. Select theGlobal Interpolant check box to interpolate all the data in the new set in the same manner as the source data that you specify in theStart Data Source field.

If you want to calculate rolling averages based on historic interest rate information, select the Rolling Average check box. This activates two other fields, theLag Frequency andRolling Average Frequency fields that enable you to select dates from previous yield curves.

Next, set up the curve operators. The Step # field indicates the source data that is affected by the chosen operation and helps you keep track of the operations that are performed and the segments of the composite curve that are impacted). Select an operation code to determine operation on the current (and possibly previous) data set that is given in the data source prompt box. Options are:*Average, Also, Difference, Max Min, Shift, Shift-Range, Splice,* and*Sum*. Depending on the selection, the following fields may appear:

Start Maturity Valid for the splice and shift-range operation. Defines the maturity at which the new source data or an operation takes effect. You can enter decimal numbers in the following format: 123456.1234. This field is also used to specify the left boundary of a shift-range operation. For example, 1.5 with a corresponding unit of measure of months indicates a start

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maturity value of 1.5 months. You can enter up to six digits preceding the decimal point and four digits following the decimal point.

Stop Maturity

Defines the maturity at which a shift-range operation ends. If you require multiple shifts over a range, each step can define a new series of start maturity and stop maturity ranges along the constructed composite curve.

Pd Boundary (period boundary)

Use when you splice composite source data. It enables you to specify whether the new source data begins at the start maturity or immediately afterwards.

Basis Points

Enter the number of basis points to shift the curve when the shift operation is chosen. This is a fixed number of basis points across the maturity range that is defined in this step. You may want to create a curve with a rate ramp, rather than a parallel shift. To accomplish this, you need to set up multiple steps with the shift range operation to specify a starting and stopping point for each varied basis point shift for separate segments of the composite curve.

Interpolant

When the Global Interpolant check box is not selected, you can specify the interpolation method for the various steps by using the Interpolant drop down menu. Each step number, or segment of the curve, needs to be defined with an interpolation method. The options are:*Cubic Spline, Hermite Cubic, Linear Segments,* or*Step Function Interpolation.*

Derived Data Page

Use the Derived Data page

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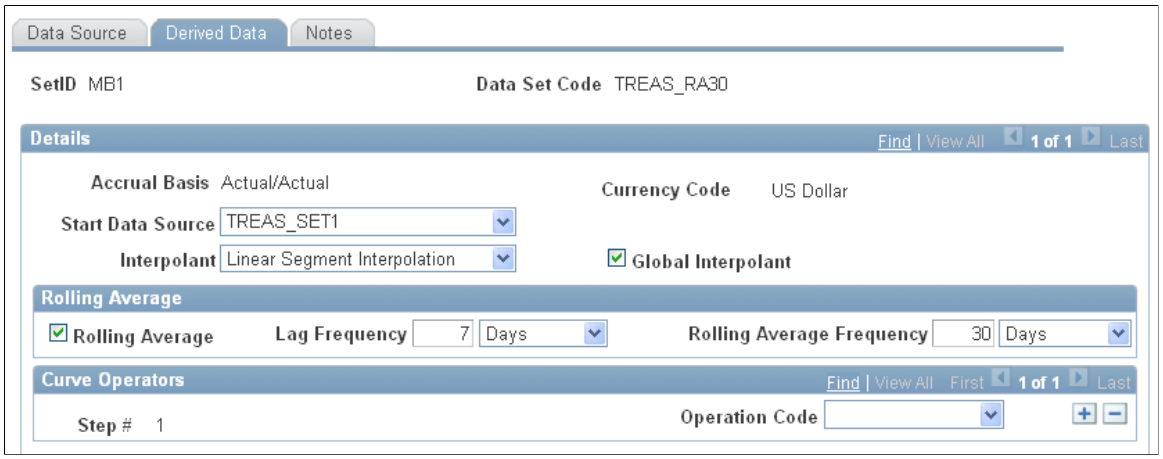
Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Derived Data.

Image: Derived Data page

This example illustrates the fields and controls on the Derived Data page. You can find definitions for the fields and controls later on this page.



Start Data Source

Specify the source data that you want to use for the composite curve.

For rolling averages, the source data is the Market Issues yield curve that the rolling average calculation is based on. The curve is built prior to building the rolling average curve and generally uses rates sourced from the market. However, it is possible to build a derived curve based on another derived curve.

Interpolant

Specify the interpolation method for the various steps (segment of the curve).

Options are: *Cubic Spline, Hermite Cubic, Linear Segments,* or*Step Function Interpolation.* Linear Segments interpolation is the most common method used.

Global Interpolant

Select this check box to use Linear Segments interpolation for the entire curve (you do not have to specify the Operation Code in the Curve Operators section).

Rolling Average

This check box must be selected to perform rolling averages.

Selecting this check box ensures rolling averages are calculated based on historic interest rate information.

Selecting this check box also activates the Lag Frequency andRolling Average Frequency fields.

Lag Frequency

Specify the delay in time that you want your calculation to begin.

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The lag frequency shifts the time period that the rolling average is calculated on by the period that you specify. For example, if you set the rolling average frequency to 30 with a 7 day lag frequency, the original calculation changes from: days = t, t-1, t-2, [...] t-30 to days = t-7, t-8, t-9, [...] t-37.

The lag frequency period is not included in the rolling average interest rate calculation unless the value is set to zero.

Rolling Average Frequency

Specify the span of time that is being used to calculate a rolling average.

For example, if February 2002's 8 month rolling average is based on data from April 2001 to November 2001, then March 2002's 8 month rolling average is based on data from May 2001 to December 2001 data.

Generic Data Page

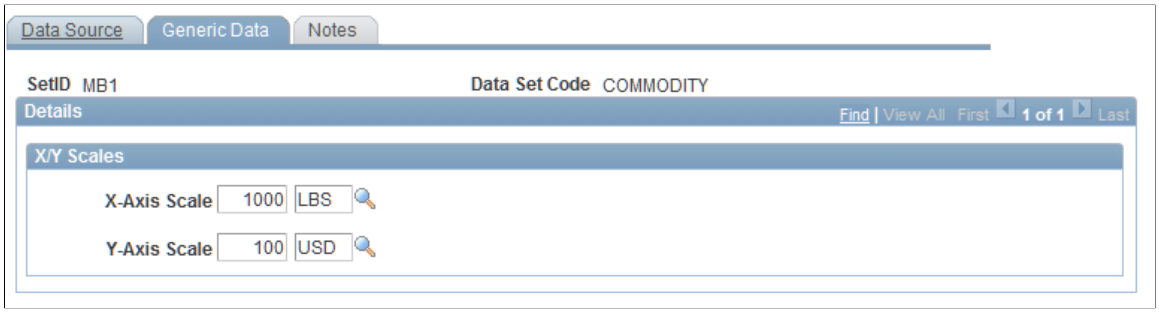
Use the Generic Data page (YC_GENERIC_PNL) to use when creating term structures from generic data sets.

Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Curve Sets, Generic Data

Image: Generic Data page

This example illustrates the fields and controls on the Generic Data page. You can find definitions for the fields and controls later on this page.



Enter values for the x and y axis. These values are previously set up in PeopleSoft EPM by using the Unit of Measure page. Create generic data sets to provide maximum flexibility for curve generation of desired user defined parameters and data. You provide the data inputs and measures that are needed to define the data set.

Setting Up Curve Interpolants

This section discusses how to define curve interpolants.

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Pages Used to Set Up Curve Interpolants

Page Name	*Definition Name*	*Navigation*	*Usage*
Curve Interpolants	YC_DEF_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Interpolation Rules, Curve Interpolants	Specify how Curve Generator calculates curves.
Curve Interpolants-Notes	YC_DEF_NOTES_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Interpolation Rules, Curve Interpolants, Notes	Enter setup notes.
Currency Discount Factors	FI_CURR_DF_TBL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Discount Rate Curves	Define discount factors when calculating the net present value (NPV) on a set of cash flows.
Currency Discount Factors — Notes	FI_CURR_DF_NOTES	Financial Services Industries, Interest Rate Environment, Dataset Definition, Discount Rate Curves, Notes	Add notes to the discount factor definitions.

Curve Interpolants Page

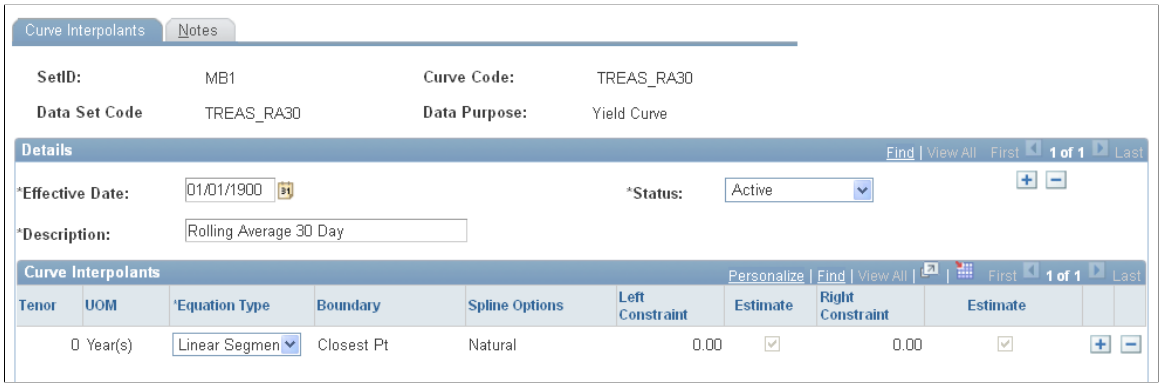
Use the Curve Interpolants page (YC_DEF_PNL) to specify how Curve Generator calculates curves.

Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Interpolation Rules, Curve Interpolants

Image: Curve Interpolants page

This example illustrates the fields and controls on the Curve Interpolants page. You can find definitions for the fields and controls later on this page.



This page serves to associate the data set to the curve. Select a data set code and equation type. This grid tells the Curve Generator how to use the equation to calculate curves. Different interpolation algorithms can be used for different sections of the curve set.

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For rolling averages, select the rolling average curve for Data Set Code (data set). If, for example, you set this to the Market Issue curve (TREAS_SET1 in the page shot above), the market issue points on the rolling average curve will reflect the base market data (TREAS_SET1) rather than the calculated rolling averages.

1. Specify the tenor and unit of measure (UOM).

   If you need rates from a given yield curve within maturities that are shorter than those that are in the source data, indicate an overnight or short-term rate. This enables Curve Generator to interpolate the required values between the overnight or short-term rate and the selected source data.

2. Specify the curve interpolation method that you want to define.

   Options are: *Cubic Spline, Hermite Cubic, Linear Segment,* or*Step Function.*

3. Indicate where you want terms to be spliced by defining the boundary.

   If the tenor that you specify in a grid does not land on a data point, this field enables you to specify an alternate point to use *(closest, prior,* or*behind).*

4. If you define this equation as a cubic spline interpolation, the Spline Option column appears.

   Specify the way that you want the spline curve to handle the left and right endpoints of each curve set. Options are: *Continuous Curl, Curvature Curl, Curvature Constraint,* or*Slope Constraint.*

5. Select specific values for the slop or curvature at the left and right points, known as the constraints.

   If you define the spline option as a continuous curl, you do not need to set up the right constraint.

6. If you specify this equation as a slope constraint, set up the estimates for left and right constraints.

Setting Up Discount Rates

Define discount factors when calculating the NPV on a set of cash flows.

See Understanding Yield Curves.

Setting Up Deterministic Models

This section provides an overview of deterministic scenarios and discusses how to:

- Set up the deterministic model.
- Set up the shock model.
- Set up the drift model.

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Pages Used to Set Up Deterministic Models

Page Name	*Definition Name*	*Navigation*	*Usage*
Model Definition	DT_MODEL_DEF_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Deterministic Scenarios, Model Definition	Create a new deterministic interest rate model or modify an existing model.
Deterministic Scenario - Notes	DT_NOTES_PNL	Financial Services Industries, Interest Rate Environment, Dataset Definition, Deterministic Scenarios, Notes	Enter set up notes.
Shock Model	DT_SH_TNR_SCPNL	Click the Tenors button on the Deterministic Scenario - Model Definition page.	Use this page to illustrate and create shaped curves under the shock model for instantaneous changes to the current term structure.
Drift Model	DT_DR_TNR_SCPNL	Click the Tenors button on the Deterministic Scenario - Model Definition page.	Use this page to illustrate and create shaped curves under the drift model for gradual changes to the current term structure.

Understanding Deterministic Scenarios

The Deterministic Interest Rate Scenario Generator enables you to model an organization's exposure to interest rate risk. There are two general (deterministic) methods for modeling interest rate movements.

- The *Rate shock* (shock model) enables you to model instantaneous changes to the market yield curve in an arbitrage-free scenario.
- The *Rate ramp.* (drift model) employs the option allowing individual tenors on a yield curve to move gradually and independent of one another over a specified period of time.

  The drift model does not ensure an arbitrage-free environment.

Shock Model

The shock model is an example of an arbitrage-free scenario that you can employ to model the financial institution's sensitivity to interest rate changes on the NPV of a portfolio. Use the entire yield curve (term structure) to ascertain the appropriate discount factors for future cash flows determined by the portfolio's makeup of on-balance sheet and off-balance sheet items. Use two methods for defining scenarios.

- The parallel shift method enables you to define an instantaneous change to the term structure.

  As a result of this shock, each point of the term structure is changed by the same amount.
- The shaped curve method is also an instantaneous change but it enables you to define the new shape of the curve.

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In this manner, the scenarios allow for things like twists, steepening of curves, flattening of curves, and so on. Included in shock model functionality is the ability to select different shock assumptions for different yield curves. This enables you to determine the sensitivity analysis for basis risk (For example, two yield curves that move in different fashions).

Regulators require financial institutions to illustrate the impact on their portfolios due to adverse rate changes. This is accomplished by subjecting the current portfolio to a series of rate shocks (For example, immediate rate changes of 100–400 basis points). This technique illustrates both the earnings that are at risk and the value that is at risk for a financial institution's portfolio. These techniques are effective tools for both monthly review of the entire organization's book and daily analysis of smaller trading books. Regulators require that the financial institution's risk capital be sufficient to withstand a rate shock scenario. Although an actual market rate shock is unlikely, the shock model does provide a relative measure of the financial institution's risk exposure while satisfying regulator's requirements.

Drift Model

Use the drift model method to model net interest income (NII). NII focuses on the spread between income from financial products that are offered and the match funded liabilities. The drift model method enables you to independently define future values of assorted tenors from the same yield curve.

Arbitrage-free forward rates are not calculated in drift models. This is useful for creating inverted yield curves or modeling gradual changes to the term structure, curve twists, and curve shifts (nonparallel shifts).

Note: It is assumed that the analyst conducts the analyses with the understanding that the specified series of term-structures are no longer arbitrage-free with respect to the current term-structure.

Model Definition Page

Use the Model Definition page (DT_MODEL_DEF_PNL) to create a new deterministic interest rate model or modify an existing model.

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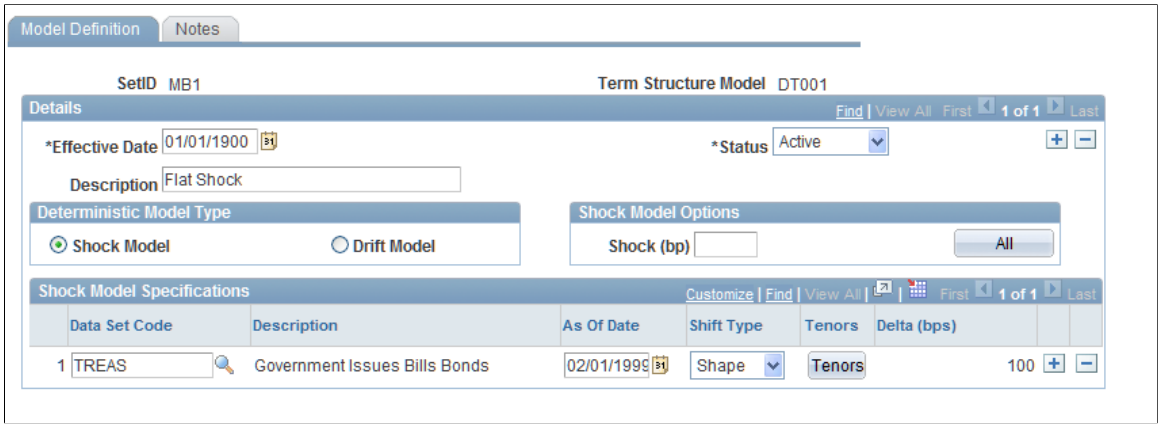
Navigation

Financial Services Industries, Interest Rate Environment, Dataset Definition, Deterministic Scenarios, Model Definition

Image: Model Definition page

This example illustrates the fields and controls on the Model Definition page. You can find definitions for the fields and controls later on this page.



Specify this model to be either a shock model or a drift model:

- If you selected a shock model, enter the value of interest rate shock in basis points in the Shock (bp) field.

  For example, 100 indicates a 100 basis-point shift upward in rates for the selected yield curve. Similarly, *-100* indicates a 100 basis-point drop in rates to the selected yield curve. Then, click theAll button to apply the shock value to all data set codes in the grid. The default value is of a parallel shift yield.

- If you select a drift model, enter the schedule (daily, monthly, or yearly) for which future yield curves are built.

  Enter values up to five digits. All three fields cannot be left blank. When the rule is processed, the number of daily time steps is first considered, then the monthly time steps, then yearly.

Next, enter the model specifications. Fields that may appear are:

Data Set Code Select the curve data set code that you want to apply to the model. If you want to include multiple data (curves) sets in the same model, insert a row to specify the additional data set codes to include. Curve data sets must be defined in the Curve Generator setup pages.

As of Date Select the as of date for the corresponding yield curve that the model is based on. For example, if you select the date *07/29/2002,* the model is based on the yield curve rates in the system as of July 29, 2002. Because model specifications are saved as basis point deltas, these deltas are applied to the most currently available data set at run time.

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If you don't know what yield curve dates are available, you can go to the Yield Curve Inquiry page to review the yield curves that are available.

Shift Type

Parallel is the default value. Select*Shape* to assign various shifts to individual tenors on the yield curve. You can insert rows to use multiple Data Set codes and a mix of both parallel or shape shifts for the respective Data Set codes that are selected. You cannot select the same Data Set code for both an application of a parallel or shape shift type.

Tenors

Click this button to access a separate page to set up tenors.

Delta (bp) basis point

Indicate the change in basis points that is allotted to the entire curve when the shock model is a parallel move.

Interpolation

Options are *Step* or*Linear*.

Shock Model Page

Use the Shock Model page (DT_SH_TNR_SCPNL) to use this page to illustrate and create shaped curves under the shock model for instantaneous changes to the current term structure.

Navigation

Click the Tenors button on the Deterministic Scenario - Model Definition page.

You supply the change to the rate in basis points next to the designated tenor shift. As you supply the Delta (bps) (delta basis points) values, the instantaneous yield curve shift scenario that is plotted in green is charted alongside the base scenario plot. You have the flexibility of designating shaped shift types (besides a parallel shift) across all tenors. Click theReset button to reset the curve shift scenario plot and data points. ClickOK to accept the changes to the shock model.

Drift Model Page

Use the Drift Model page (DT_DR_TNR_SCPNL) to use this page to illustrate and create shaped curves under the drift model for gradual changes to the current term structure.

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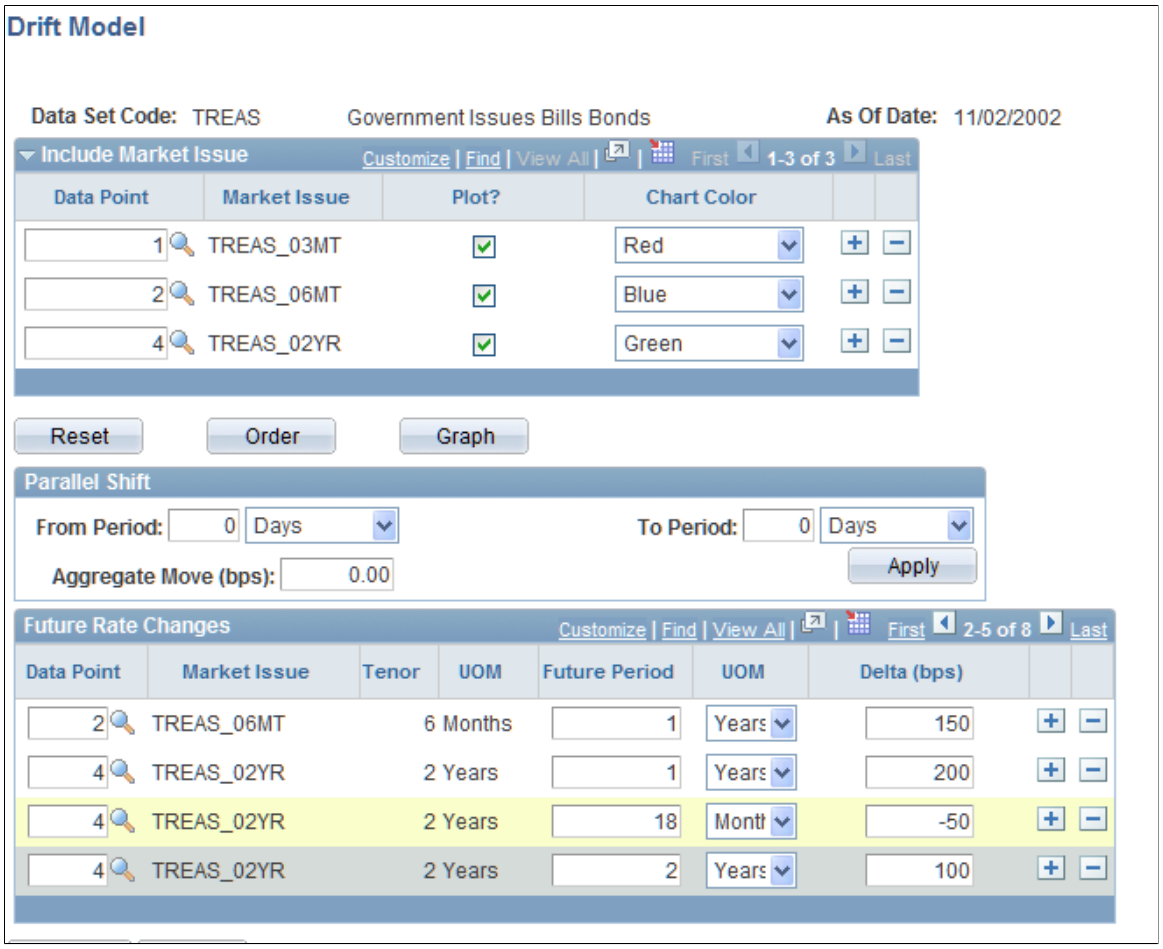
Navigation

Click the Tenors button on the Deterministic Scenario - Model Definition page.

Image: Drift Model page

This example illustrates the fields and controls on the Drift Model page. You can find definitions for the fields and controls later on this page.



Set up the Market Issues that enable you to establish which data points you want to plot. Specify source data in theData Point field. Include or exclude data points using thePlot check box. Click theReset button to clear all the selected data points. UseOrder to change the order of the data points that are plotted.

The Futures Rate Changes group box enables you to establish the future rate movements of the data points that you set up in theMarket Issues group box. Select data points to which you want to apply future rate changes. Then, establish a future period by using theFuture Period andUOM (unit of measure) fields and enter the basis point change in theDelta (bps) field.

Click OK to accept the changes.

You also have the option of creating a parallel shift in the drift model by using the data points that you previously selected on the Include Market Issue grid. Just select the period of time that you want to apply the shift in theParallel Shift group box (rather than creating a series individual future period points in theFuture Rate Changes group box) and indicate the value of the aggregate move in basis points. This shift applies to all data points that you previously selected on theInclude Market Issue grid. Then, click theApply button.

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Click the Graph button to generate a graphical representation of the drift model.

Generating Yield Curves

This section discusses how to generate yield curves and drift yield curves.

At this point, you've set up all the relevant pages for yield curves. Your next step is to create yield curves. You do this by running a jobstream that includes the Curve Generator application engine in its processing. Creating yield curves is an iterative process. If you don't think the output is satisfactory, you can go back to the various setup steps that are outlined in these topics and change the specifications as needed. Then, you can run the jobstream again and review the results.

To help you review your yield curves, you can use:

- The View Curves inquiry page that enables you to graphically view the yield curve that you created.
-

Note: Ensure that the data is up-to-date. You can do this by checking the as of dates in the pages before generating the yield curves. The Pricing Index Model uses information from Curve Generator that if incorrect, negatively affects processing.

Pages Used to Generate Yield Curves

Page Name	*Definition Name*	*Navigation*	*Usage*
Yield Curve Generator	RUN_YC_GENERATOR	Financial Services Industries, Interest Rate Environment, Yield Curve Generator, Yield Curve Generator	Generate yield curves.
Deterministic Drift Generator	RUN_YC_DRIFT	Financial Services Industries, Interest Rate Environment, Yield Curve Generator, Deterministic Drift Generator	Generate drift yield curves.

Deterministic Drift Generator Page

Use the Deterministic Drift Generator page (RUN_YC_DRIFT) to generate drift yield curves.

Navigation

Financial Services Industries, Interest Rate Environment, Yield Curve Generator, Deterministic Drift Generator

To generate drift models, ensure that you set up the drift models, then process that model by using the Drift Generation page. The Drift Generation page is a run control page that creates drift models that are established with drift yield curves. Select the drift model that you want to process in the Term Structure Model field, select aCurve Date, and click theRun button.

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Note: Unlike drift rates, which need to be calculated by the Drift Generator, the shock rates need no prior generation. They are calculated at run time by the cash flow generator.

Viewing Yield Curves

Yield curves are constructed and stored in the database as ranges of maturities for which a single cubic equation ($y = a + bx + cx^2 + dx^3$) describes the yield curve through those maturities. A complete yield curve for maturities from zero through thirty years or longer is typically made up of a few of these equations, each describing a segment of the curve. You can use the equations making up the complete curve in a spreadsheet for graphing purposes. Individual forward rates can be calculated online by using this page.

Page Used to View Generated Yield Curves

Page Name	*Definition Name*	*Navigation*	*Usage*
View Yield Curves	YCEQS_PNL	Financial Services Industries, Interest Rate Environment, Yield Curve Inquiry, View Yield Curves	View constructed curves online. The cubic equations that make up each page can be viewed once Curve Generator constructs a yield curve (that is, once you've run the yield curve jobstream).

View Yield Curves Page

Use the View Yield Curves page (YCEQS_PNL) to view constructed curves online.

The cubic equations that make up each page can be viewed once Curve Generator constructs a yield curve (that is, once you've run the yield curve jobstream).

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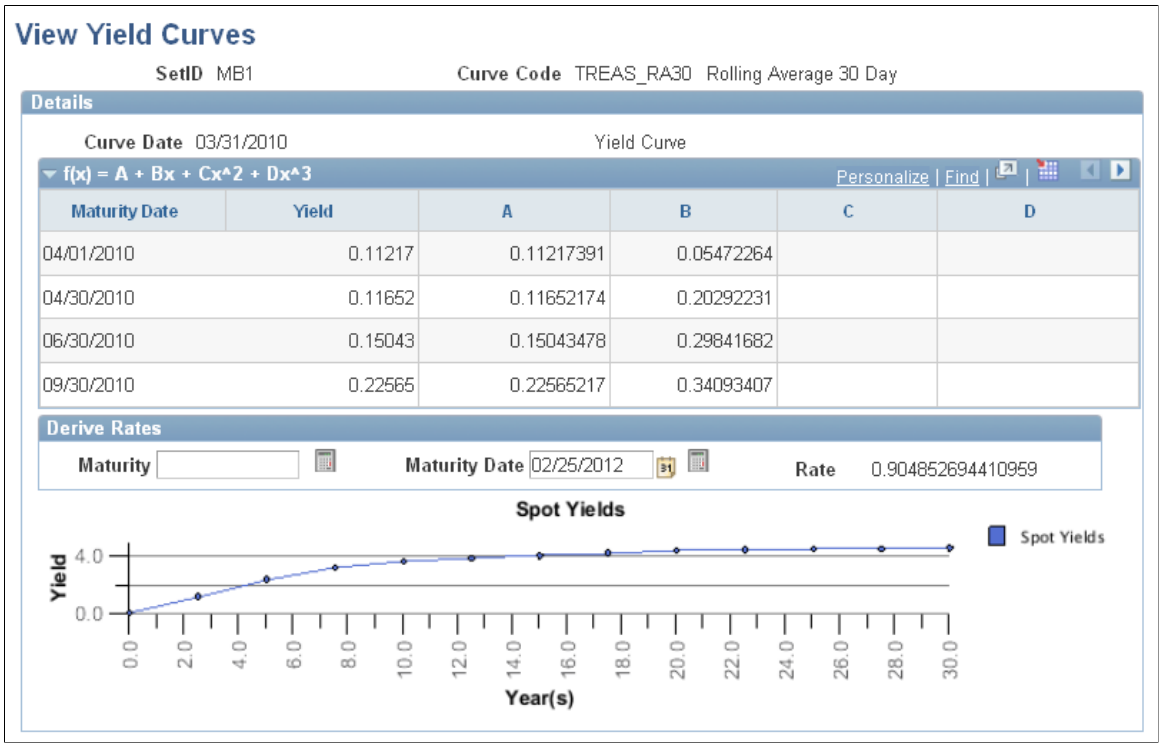
Navigation

Financial Services Industries, Interest Rate Environment, Yield Curve Inquiry, View Yield Curves

Image: View Yield Curves page

This example illustrates the fields and controls on the View Yield Curves page. You can find definitions for the fields and controls later on this page.



To view yield curves, enter a value in the Maturity field. Enter a data in theMaturity Dt field. Today's date is the default. Click theCalculate button next to theMaturity field. The rate appears in theRate field.

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Chapter 7

Setting Up Financial Services Industry Products

Setting Up Product Dimensions

This section lists the page used to set up product dimensions.

Page Used to Set Up Product Dimensions

Page Name	*Definition Name*	*Navigation*	*Usage*
Maintain Dimension	PRODUCT_D00	EPM Foundation, Business Metadata, OW-E Dimension Maintenance, Common, Product, Maintain Dimension	Add or review dimensions directly in the warehouse. Dimension data is frequently loaded into the EPM Warehouse tables by using the ETL process.

Setting Up Product Definitions

This section provides an overview of financial and capital market products and discusses how to:

- Set up balance sheet attributes of products.
- Define detail attributes of products.
- Set up rate options.

Pages Used to Set Up Product Definitions

Page Name	*Definition Name*	*Navigation*	*Usage*
Financial Products	FI_PRODUCT_TBL	Financial Services Industries, Product Portfolio, Product Portfolio Setup, Financial Product Definition, Financial Products	Describe on a high level the product's balance sheet attributes. The system writes this information to the FI_PRODUCT_TBL table.

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Page Name	*Definition Name*	*Navigation*	*Usage*
Product Detail	FI_PRODUCT_SEQ	Financial Services Industries, Product Portfolio, Product Portfolio Setup, Financial Product Definition, Product Detail	Define the detailed attributes of the products, with respect to instrument type, interest calculations, and terms. The system writes the data that you enter to the FI_PRODUCT_SEQ table.
Rate Options	INSTR_RATE_OPT_SEC	Click the Rate Options button on the Product Detail page.	Set up teaser rates for deposits, lines of credit, and loans.
Financial Products - Notes	FI_PRODUCT_NOTES	Financial Services Industries, Product Portfolio, Product Portfolio Setup, Financial Product Definition, Financial Products, Notes	Enter setup notes.
Forecast Definition	FI_FCST_DFN_PG	Financial Services Industries, Product Portfolio, Product Forecast, Forecast Data, Forecast Definition	Define the product forecast number of periods, start year, and first forecast period.
Forecast Data	FI_FCST_SEQ_PG	Financial Services Industries, Product Portfolio, Product Forecast, Forecast Data, Forecast Data	Calculate the product forecast.

Understanding Financial and Capital Market Products

Use the Financial Products component to define the characteristics and processing rules that the Financial Services Industry applications use for all of the instruments for that product. The product definitions specify the types of financial products and capital market products that the institution sells or carries in its portfolio. Examples of financial products are mortgages, auto loans, and deposit accounts. Examples of capital market products are bullet bonds, coupon bonds, and interest rate caps and floors. The instruments are the specific financial obligations, contracts, and accounts: for example, John Doe's mortgage loan, Steve Smith's credit card account. A product defines the attributes of a generic instrument, specifically its behavior in terms of cash flow. An instrument is a specific instance of the product. The instrument records are the institution's specific individual financial obligations, and one of the key defining attributes on the instrument record is its product ID.

The Financial Products component establishes templates for different types of financial instruments, including derivatives. Financial Services Industry applications draw on these templates for detailed definitions of product attributes such as term or tenor, interest calculations, interest dates, payment dates, and so on.

The templates define how the Cash Flow Generator projects cash flows for these products, and define default product attribute values that can be used in the Extract-Transform-Load process, in the absence of other source data. For most instrument types, the minimum required source data is: initial and current balance amounts, start and end dates, customer ID, product ID, instrument ID, interest rates. The remaining product detail can then be filled in the instrument tables by using the product templates.

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Understanding Swaptions and Callable Bonds

PeopleSoft Financial Services Industry currently provides two option products: swaptions and callable bonds. This section discusses:

- Swaptions.
- Callable bonds.
- Cash flow processing of swaptions and callable bonds.
- The Options page.

Although you can process swaptions and callable bonds by using the prepayment model structure to achieve the appropriate results, it is more logical to recognize the option of swaptions and callable bonds to align the business and processing properly. PeopleSoft Financial Services Industry applications therefore provide a simple option-based solution for swaptions and callable bonds that you can use in conjunction with the Yield Curve Generator.

To define swaptions:

- Set up product dimensions on the Maintain Dimension page of PeopleSoft EPM Warehouse.
- Define the fixed swap pay leg and then the floating swap receive leg of the swaption on the Product Detail page.
- Add an option leg on the Product Detail page to represent the option of the product and indicate under what conditions to invoke processing of the two swap legs.
- Define for the product an instrument for the fixed pay side of the swap and another for the floating receive side of the swap through the Financial Instrument Entry component, defining the optionality these instruments on the Option page of this component.

To define callable bonds:

- Set up product dimensions on the Maintain Dimension page of PeopleSoft EPM Warehouse.
- Define for the product the bond leg of the callable bond on the Product Detail page.
- Add a callable bond leg on the Product Detail page to represent the optionality of the product and indicate under what conditions to invoke processing of the bond leg.
- Define for the product an instrument for the bond leg through the Financial Instrument Entry component, defining the optionality of this instrument on the Option page of this component.

In cash flow processing of swaptions and callable bonds, the results can be used for two purposes:

- Actual cash flow forecasting.
- Current valuation using net present value calculation.

For cash flow forecasting, the cash flow engine recognizes the point on the yield curve when conditions of the option are met and assumes that in a rational market the option is exercised. For valuation purposes, the cash flow engine recognizes under a defined scenario when the conditions of the option are met, assumes that in a rational market the option is exercised, and projects future cash flows for forecasting purposes accordingly.

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Use the Options page to enter option information for swaptions and callable bonds at the product sequence level. At the product sequence level, a swaption is a three-legged product consisting of the fixed swap pay leg, the floating swap receive leg, and the option leg that indicates under what conditions to invoke processing for the first two legs. A callable bond is a two-legged product consisting of the bond leg and the callable option leg that indicates under what conditions to invoke processing for the bond leg.

A product sequence record with instrument base type of option identifies the product as having an option component and makes this page available. The system stores product sequence records on the FI_PRODUCT_SEQ table. To ensure proper cash flow forecasting of swaptions and callable bonds, the system permits you to define only one leg with an instrument base type of option for a given product. The system also restricts you from defining and saving an option leg until you define either one physical bond leg or two interest rate swap legs.

If an option product sequence record exists, the system enables the Instrument Entry - Option page for you to enter option information for the product at the instrument level for cash flow forecasting of actual instruments.

Financial Products Page

Use the Financial Products page (FI_PRODUCT_TBL) to describe on a high level the product's balance sheet attributes.

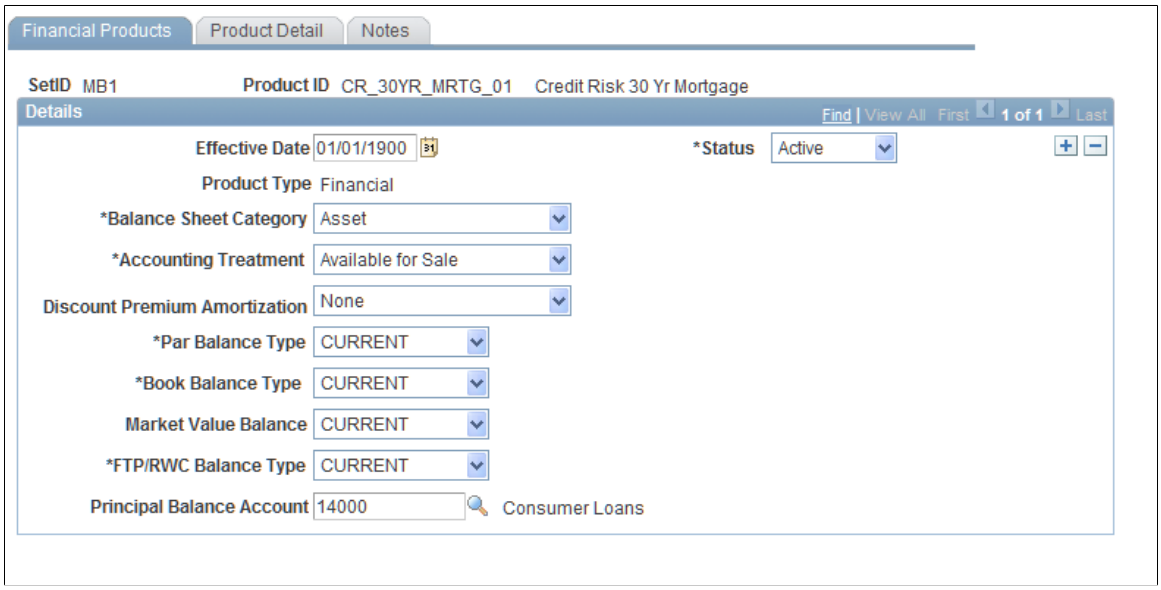
The system writes this information to the FI_PRODUCT_TBL table.

Navigation

Financial Services Industries, Product Portfolio, Product Portfolio Setup, Financial Product Definition, Financial Products

Image: Financial Products page

This example illustrates the fields and controls on the Financial Products page. You can find definitions for the fields and controls later on this page.



To set up a product's balance sheet attributes:

1. Select from the Search dialog box a product ID as previously defined in the Warehouse.

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Two types of products are available:

Financial Services Instrument	Select to specify products that are created by the bank and sold to its customers. These products are reflected in the bank's balance sheet as assets and liabilities.
Capital Markets Instrument	(Derivatives) Select to specify market securities are bought/sold by the bank for hedging purposes and/or its own investment account. These products are reflected in the bank's balance sheet as off balance sheet items (OBS).

2. On the Financial Products page, select either *Asset, Liability,* or*Off Balance Sheet* in theBalance Sheet Category field.
3. Select an accounting treatment.

   Choose either:

Available for Sale	Applies to products, which are not considered to be part of trading-related activities. These are reported at their fair values, with unrealized gains and losses reported on a net-of-tax as a separate component of stockholders' equity. Dividend and interest income, including amortization of premiums and accretion of discounts are included in interest income. Typically, these are assets (mortgage loans) that are eventually sold to loan servicing companies such as Fanny Mae, Freddie Mac, and so forth.
Held to Maturity	Applies to products, which the institution has the positive intent and ability to hold to maturity. These are reported at amortized cost. Dividend and interest income, including amortization of premiums and accretion of discounts, are included in interest income.
Trading	Applies to trading account assets that are generally held for the short term in anticipation of market gains and resale. These are carried at their fair values. Realized and unrealized gains or losses on trading assets are included in trading income.

4. Select a balance type for the Par Balance Type (face value of the instrument),Book Balance Type (accounting value of the instrument), orMarket Value (current value of the instrument in the market) fields.

   Options are: *ADB* (average daily balance),*Committed,* or*Current.*

Note: Balance types are user defined in the application.

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Product Detail Page

Use the Product Detail page (FI_PRODUCT_SEQ) to define the detailed attributes of the products, with respect to instrument type, interest calculations, and terms.

The system writes the data that you enter to the FI_PRODUCT_SEQ table.

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Navigation

Financial Services Industries, Product Portfolio, Product Portfolio Setup, Financial Product Definition, Product Detail

Image: Product Detail page (1 of 2)

This example illustrates the fields and controls on the Product Detail page (1 of 2). You can find definitions for the fields and controls later on this page.

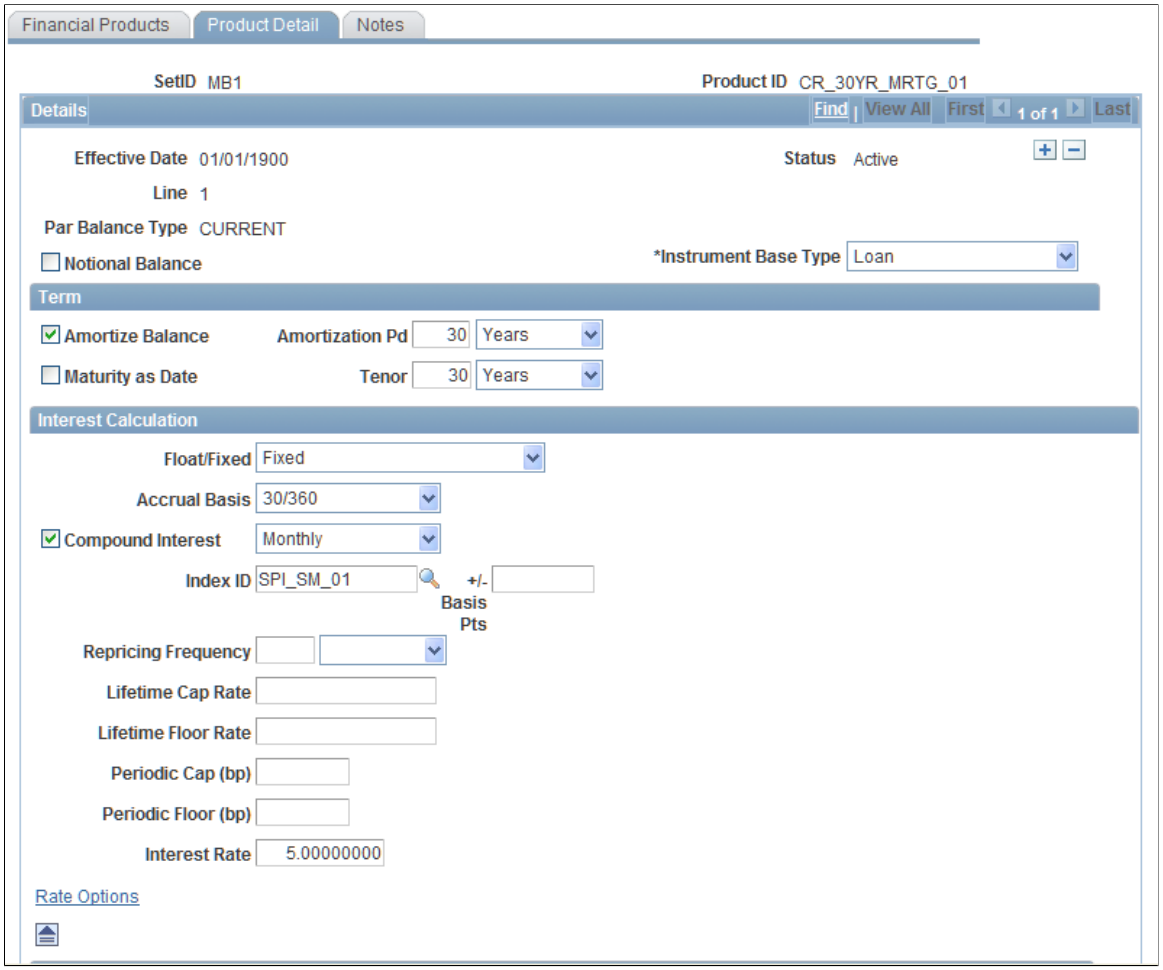
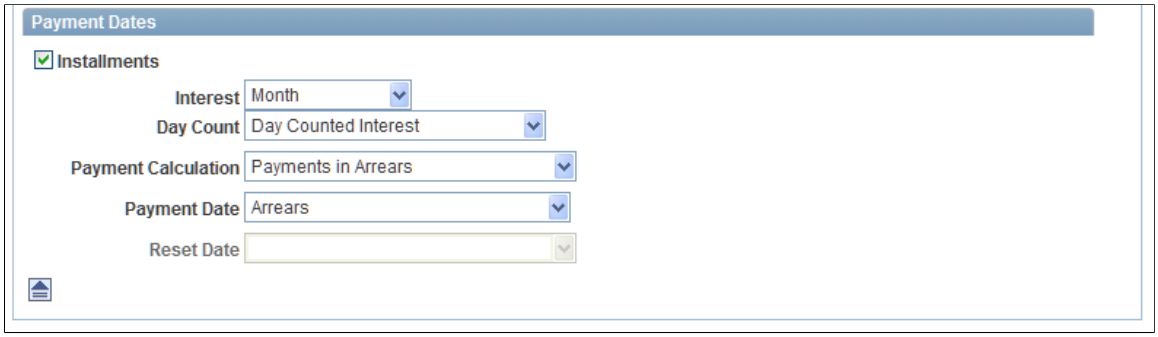


Image: Product Detail page (2 of 2)

This example illustrates the fields and controls on the Product Detail page (2 of 2). You can find definitions for the fields and controls later on this page.



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Note: This is a dynamic page. The options that you choose in the fields may activate or deactivate additional fields.

To define detail attributes of a product:

1. Set up general instrument information in the uppermost group box.

   This may include one or more of the following steps:

   a. Select the type of interest rate cap or floor.

      Options are: *Cap, Collar,* and*Floor.* Select*Buy* or*Sell* in theBuy/Sell field and the rate at which the instrument can be exercised in theStrike Rate field.

   b. Enter the notional balance amount and currency.

      Notional balances are used for calculations when no actual funds are exchanged.

   c. Select the instrument base type for the product.

      The selection determines the parameters that appear on the page. Options are: *Bond/Note, Deposit, Interest Rate Cap/Floor, Interest Rate Swap Leg, Line of Credit, Loan,* and*Option.*The instrument base type of*Futures* is currently not in use.

   d. Enter in the Par Amount field an amount and specify the currency for the bond or note.

      This value supplements the par balance type that you specify on the Financial Products page. Then, select a cash flow projection in the Strip field. Select*Interest Only Strip* to include only interest payments in the projections or*Principal Only* to include only the principal in the projections. To select both principal and interest, leave this field blank

   e. (Applies to bonds or notes only.) Select in the Strip field a value to determine on what bases of the product the cash flows are calculated.

      Interest only strip means that the cash flows are calculated for interest payments, so the product is a security with cash flows that are based entirely on the monthly interest payments that are received from a mortgage pool. Conversely, principal only strip calculates cash flows for the principal portion of the product.

   f. Select in the Swap Leg field the leg that you want to define for the interest rate swap leg.

      Options are *Pay* or*Receive.* Define at least two legs for each swap product—one for the interest that is paid and one for the interest that is received. If you define only one leg, then the Cash Flow Generator treats the single leg as a bond that is held to maturity. Then, specify the amount and currency in the Amount field.

   g. Enter in the Amount field the nominal contract amount of a cap or floor, swap, or option.

   h. (Applies to deposits only.) Enter in the Deposit Service Cost (bps) field the cost that can be applied towards servicing and maintaining a deposit product.

      At each payment period, the current balance is multiplied by the number of basis points. The resulting amount is the periodic service cost.

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i. (Applies to deposits only.) Enter in the Reserve Requirement (%) field a percent to represent the legal reserve that is put aside for each deposit product for risk management purposes.

   At each payment period, the current balance is multiplied by the percent factor. The resulting amount is the periodic service cost.

j. Specify in the Revolving field if the line of credit is renewed with each payment.

   Then, specify the minimum periodic payment (as a percentage of the balance outstanding), and the minimum periodic payment amount.

k. (Applies to lines of credit only and only if the Payment Calculation field is set to*Percentage.)* Enter in theMin Payment % (minimum payment percent) field the periodic minimum payment percent against the outstanding balance.

l. (Applies to lines of credit only and only if the Payment Calculation field is set to*Fixed Payment.)* Enter in theMin Payment (minimum payment) field the periodic minimum payment against the outstanding balance.

2. Establish the term parameters.

   This defines the maturity date or tenor of the instrument type. As applicable, define the following:

   a. (For bonds or notes only.) Specify the issue date.

   b. Select the Non Maturing check box to define nonmaturing.

   c. Select the Maturity as Date check box to define maturity, then enter a date in the following field.

   d. Define tenor by entering a tenor date.

   e. (Applies to loans only.) Indicate in the Amortize Balance field if this is an amortizing loan and then specify an amortization period.

      If the amortization period is greater than the loan term, the system assumes a balloon payment at the end of the loan term.

      The amortization period represents the term to the complete amortization of the loan. The contractual term (maturity date or tenor) may not be the same as the amortization period. For example, a loan may have a tenor of five years, but an amortization period of 30 years. This means that when the loan is due in 5 years, it is not amortized. Usually, the loan is then paid off or the loan is extended.

3. Set up how to have the interest calculated.

   As applicable, define the following:

   a. In the Float/Fixed field, choose*Float* to specify rate changes according to theRepricing Frequency field,*Fixed* to set an established rate, or*Administered* to let the bank set the rate.

      The system evaluates the rates on the cash flow (or payment) dates.

   b. Select the interest rate calculation method:

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Discount to Yield	Refers to discount securities that are quoted by using a money market yield. This method uses the rate to derive the settlement amount. The difference between the settlement amount and the par amount is the interest.
Interest in Arrears	Refers to interest-bearing instruments. This method calculates interest for each period and pays interest on each period end date.
Straight Discount	Refers to money market instruments that are quoted on a straight discount or discount rate basis. This interest calculation uses the rate to calculate a discount amount, then subtracts this amount from the par amount to obtain the purchase price or settlement amount.

c. Define in the Accrual Basis field how you want the instrument to be accrued.

d. Select in the Compound Interest field if this instrument has compound interest.

   If so, also set up the compounding frequency.

e. Select in the Index ID field the pricing index to use in the construction of the interest rate.

   If you add an option leg to this product to create a swaption or callable bond and the exercise type for that option is Bermudan, this is the index that is used in hedge processing against which the strike rate of the option is to be compared.

f. Select in the +/- Basis Pts (margin in basis points) field the number of basis points to add to or subtract from the interest rate that is constructed from the pricing index.

g. If you specify that this is a floating product, the Repricing Frequency field becomes available for edit.

   To determine how often an interest rate is repriced or recalculated, enter a number and then select *Months, Days,* or *Years.*

h. In the Reset Date field, reset the interest calculation for this bond or note at the start of the interest period.

   Then, specify an adjustment in days, if any. Select *Advanced* to reset the interest rate calculation at the start of the interest period.

i. (Applies to bonds or notes only.) The Reset Date Offset (Days) or+/- Days field applies to floating rate bonds or notes only.

   In cases where a reprice date falls on a weekend day or holiday, the date is shifted backwards or forward by this number so that the day falls on a business day.

j. Select in the Lifetime Cap Rate field the absolute maximum rate that a product can have during any point in its life.

k. Select in the Lifetime Floor Rate field the absolute minimum rate that a product can have during any point in its life.

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l. Enter in the Periodic Cap (bp) field the maximum increase in basis points that the product can have from reprice period to reprice period.

m. Enter in the Periodic Floor (bp) field the maximum decrease in basis points that the product can have from reprice period to reprice period.

n. If you specify that this is a fixed product, the Interest Rate field becomes available for edit.

   Enter the fixed interest rate.

o. Click the Rate Options link to access the Rate Options page, where you can set up teaser rates for deposits, lines of credit, and loans.

p. Select the Interest Bearing check box to indicate that the deposit is interest bearing.

   In addition, indicate whether you want to reinvest interest payments, any central bank reserve requirements (as a percentage), and the deposit service cost (in basis points).

q. (Applies to deposits only.) Select the Reinvest Interest Payments check box to apply periodic interest payments to the balance of the product rather than paying them out.

   This can often be observed on CDs.

4. Set up the payment dates information.

   As applicable, define the following:

   a. If you have any payment dates, select the Installments check box. Then select the frequency for the payment installments.

   b. Enter in the Interest field the frequency of interest or principal payments.

   c. Use the Coupon Month andCoupon Day fields to tell the system when the first payment month is.

      This is not used on all instrument base types.

   d. Select in the Day Count field how the days are counted in terms of interest.

      Select *Day Counted Interest* to use the actual number of days between interest dates. Select*Same Interest each Period* to apply the same payment amount each time.

   e. Select in the Payment Calculation field the method of payment calculation:

Advanced	Cash flow calculation assumes that payment is made at the start of the interest period.
Arrears	Cash flow calculation assumes that payment is made at the end of the interest period.
***Fixed Pmnt* (fixed payment)**	Cash flow calculation assumes that payment amount is fixed. System takes the payment amount and applies that to each cashflow payment event. It pays off interest first, then applies anything that is left to the principal.

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***Fixed Prin* (fixed principal)**	Takes the payment amount and applies it directly to the principal payment plus all the interest at that payment event.
Percentage	Cash flow calculation assumes that payment amount is calculated as a percentage of the principal.

f. Select a payment date.

   Select *Paid in* to have the payment on the interest date that marks the start of the interest period. Select*Paid in Arrears* to have the payment of the interest data that marks the end of the interest period.

g. (Applies to bonds or notes only.) In cases where a payment date falls on a weekend day or holiday, the date is shifted backwards or forward by the number that you specify in the Payment Date Offset (days) or+/- Days field so that the day falls on a business day.

h. (Applies to bonds notes only.) Select a value in the First Coupon field to adjust for the first coupon payment when the number of days from the issue to the payment date is not exactly the same as the nominal payment frequency.

i. (Applies to bonds or notes only.) Select a value in the Last Coupon field to adjust for the last coupon payment when the number of days from the last coupon payment date to the maturity of the bond or note is not exactly the same as the nominal payment frequency.

j. (Applies to deposits, loans, and lines of credit only.) Indicate in the Reset Date field whether payment resets that are based on reprices events occur on the beginning or the end of a payment period.

5. Use the Options page to enter option information. As applicable, define the following:

   a. Select in the Put/Call field whether this is a put option or a call option.

   b. In the Purchase/Write field, select*purchase* if this is an option contract that you bought and someone else created. Select*write* if this is an option contract that you created for someone else to buy.

   c. Enter in the Strike Rate field the rate at which the swap in a swaption contract is invoked, or the rate at which a bond is called.

   d. Enter in the Transaction Amount field the transaction fee for this option.

   e. Select in the Underlying field the underlying product upon which this option is based.

   f. Select in the Exercise Type field the type of time when an option may be exercised:

European	The option can be exercised on one date only.
Bermudan	The option can be exercised on a series of discrete dates.
American	The option can be exercised at any time between two dates.

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g. In the Exercise By field, select to exercise this option by*Cash Difference* or*Delivery of Payoff.*

h. Enter in the Contract Buy Date field the date that the contract is put into the portfolio.

i. Enter in the Expire Date field the date that the option expires.

Rate Options Page

Use the Rate Options page (INSTR_RATE_OPT_SEC) to set up teaser rates for deposits, lines of credit, and loans.

Navigation

Click the Rate Options button on the Product Detail page.

The fields that appear on this page vary depending on the selections.

To set up rate options:

1. In the Rate Type field, set a teaser rate type.

   Options are *None, Fixed,* and*Variable.*

2. Indicate in the Teaser Period field the period that the teaser is in effect.

3. Select the Set Teaser from Index check box to set a teaser from an index (it is automatically selected for the variable rate type).

   Then, set the teaser index and a teaser margin in basis points for the index. If you choose not to set the teaser from the index, specify the teaser rate as a percentage.

4. Indicate in the Teaser Reprice Frequency field the frequency with which you want the teaser to be repriced.

5. Select the Rate Lock Options check box to set up a rate lock option.

6. Indicate in the Rate Lock Frq (rate lock frequency) field how frequently the rate lock option is available to customers.

7. If applicable, select the One Time Option check box.

8. Select in the Set Rate Lock From Index field the index from which to set the rate lock.

   Then, enter a rate lock margin in basis points.

9. Enter in the Rate (%) field the lock rate expressed as a percentage.

10. Once you're finished, click the OK button to return to the Product Detail page.

Related Links

Setting Up Product Dimensions

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Setting Up Product Ratings

This section provides an overview of product ratings and discusses how to define them.

Page Used to Set Up Product Ratings

Page Name	*Definition Name*	*Navigation*	*Usage*
Product Ratings	FI_PRODRWC_TBL	Financial Services Industries, Product Portfolio, Product Portfolio Setup, Product Ratings	Set up product ratings and enter values used by Risk-Weighted Capital function calculations.

Understanding Product Ratings

When defining Risk-Weighted Capital functions, you may want to use DataSet elements containing values that are stored at the product level. The Product Ratings page enables you to assign certain values pertaining to credit risk evaluation at the product level. Once the product ratings are defined, use a DataSet element when defining the function to reference the value for a particular product. You can use the Product Ratings page to define any attribute that you want for a particular product.

Product Ratings Page

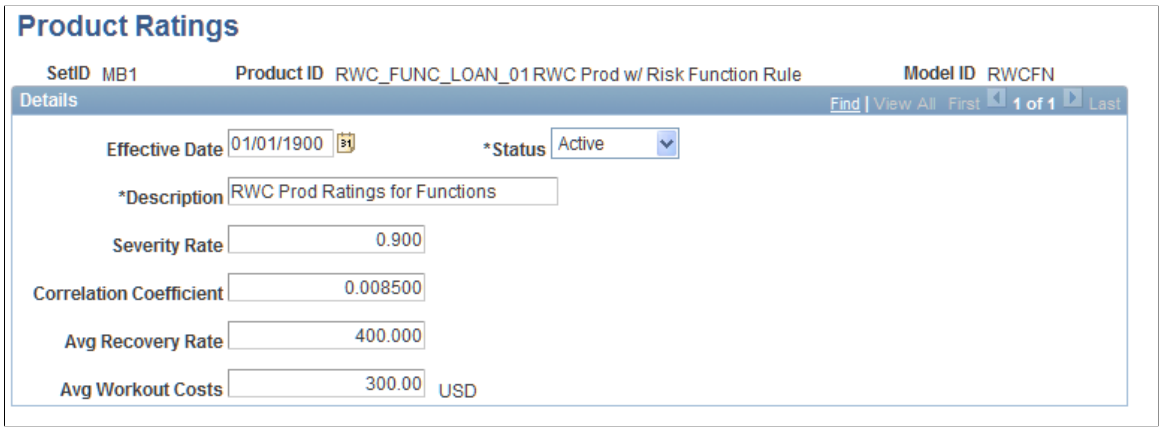
Use the Product Ratings page (FI_PRODRWC_TBL) to set up product ratings and enter values used by Risk-Weighted Capital function calculations.

Navigation

Financial Services Industries, Product Portfolio, Product Portfolio Setup, Product Ratings

Image: Product Ratings page

This example illustrates the fields and controls on the Product Ratings page. You can find definitions for the fields and controls later on this page.



For each product, choose to use only some (or none) of the fields on this page, depending on the institution's calculations. Assign a description, enter the severity rating, correlation coefficient, average recovery rate, and average workout costs in base currency of the performance ledger business unit.

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Setting Up FRS Product Codes

This section lists the pages used to set up FRS product codes.

Page Used to Set Up FRS Product Codes

Page Name	*Definition Name*	*Navigation*	*Usage*
FRS Product Codes	FI_PRODUCT_PG	Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Product Codes	Maintain FRS product classification codes.
Profit/Loss Codes	FI_PL_CLASS_PG	Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Profit/Loss Codes	Maintain FRS profit/loss class codes.
Reporting Business Unit	FI_BUS_UNIT_PG	Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Reporting Business Unit	Maintain reporting business unit records.
Roll-up runtime parameters	FI_FR_ROLLUP_PARM	Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Runtime Parameters, Roll-up runtime parameters	Enter the runtime parameters for financial roll up reporting.
Instrument Ledger	FI_RILDGR_F00_PG	Financial Services Industries, Regulatory Reporting Center, Results, Instrument Level, Instrument Ledger	View the output of instrument level profitability (FI_ILDGR _F00) processing.
Ledger balances	FI_RLEDGER_F00_PG	Financial Services Industries, Regulatory Reporting Center, Results, Performance Ledger, Ledger balances	View the output of Performance Ledger (PF_ LEDGER_F00) processing. PF_LEDGER_F00 is the primary enterprise performance measurement fact table. Used to aggregate measures like Net Revenue, Direct Costs, and Overhead Costs. The business unit for this record is a Performance Measurement business unit.
Global Consolidations Ledger	FI_RCLEDMGT_F00_PG	Financial Services Industries, Regulatory Reporting Center, Results, Global Consolidation, Global Consolidations Ledger	View the output of the Global Consolidations (GC_CLED_ MGT_F00) processing.

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Chapter 8

Setting Up and Performing Stratification

Understanding Stratification

Stratification enables you to summarize large volumes of financial instruments to a manageable scale for processing and reporting purposes. The engine that does the processing is the Stratification application engine (FI_STRATIFY). This application engine enables you to perform mathematically intensive calculations on a relatively small number of instrument pools that are proxies for a much larger number of individual instrument records. Using this feature is a multistep process, which includes:

- Understanding what you want and how you want to stratify data.
- Optionally defining balance or rate tiers to be used for grouping data.
- Configuring the DataMap metadata for the source and destination datamaps that are to be used on the Stratification Rules page.
- Setting up stratification definitions and rules in Stratification Rule pages.
- Testing the rules that you create.

This section discusses:

- Group by operations.
- Action operations.
- Stratification tips.

Group by Operations

When creating pools of instruments, you need to identify the operation for each of the attributes. You have the following choices in terms of how to populate each attribute in the instrument pool from the instrument data:

- *Discrete:* Directs the Stratification Engine to populate the instrument pool with discrete values.

  This option populates the pool with discrete values for an attribute if there is no logical or mathematical way to group instruments with different values, and the attribute is significant for reporting purposes. Choosing the discrete action for an attribute ensures that only instruments with matching values are grouped together in a pool. The discrete action may be the correct choice for important code fields. Be careful when using the *Discrete* user on amount, date, or rate fields. These types of fields tend to have many discrete values. A typical value for a discrete group by is an ID field or a yes/no flag.

- *Default:* Use for attributes that you want to set to a hard-coded value.

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If you are defining a stratification rule that you know is used only by one class or type of product, and you want all pools that are generated from that rule to have the same value for a specific attribute, select this option to force the attribute to have that predefined value. The *Default* option should be used with caution and only when you are sure that the value is valid for all pools that are created by the stratification rule. When you are unsure, a better choice is to either drop the attribute entirely, or populate the field with discrete values.

- *Increment:* If you want to group the possible range of values into consistent ranges, the simplest grouping operation to use is increments.

  Identify the increment value, and Stratification application engine that groups the instruments into incremental strata. For example, you can define the interest rate field to stratify by using increments of 0.25 percent. If all of the instruments have interest rates falling into the range of five to six percent, Stratification Engine creates four strata or groupings of interest rates, 5.00 to 5.25, 5.25 to 5.50, 5.50 to 5.75, and 5.75 to 6.00. You can use the *Increment* user on numeric fields, date fields, or both. For example, you can stratify the start date, end date, first payment date, and first repricing date.

Note: The Stratification application engine is preprogrammed so that it always processes the following attributes by using the discrete action: product ID, price index ID, variable rate, accrual basis, compounding frequency, payment frequency, and all unit of measure fields. Be careful to select the discrete action for required attributes. This is because the Stratification application engine must create a pool for each unique value that it finds in the data, and for every attribute which is chosen to use the discrete action. Examples of attributes that probably should never be assigned the discrete action are: balance amounts, start or end dates, payment amounts, and customer ID.

Action Operations

These are the default action operations:

- *Average:* Calculates the average value of an attribute for all instruments in the pool.
- *Weighted Average:* Calculates the average weighted value for an attribute by the current balance.

  Examples of attributes for which you may want to calculate the weighted average are interest rate fields: interest rate, cap rate, floor rate, and interest rate margin for floating rates. Other possibilities include remaining term, original term, loan-to-value, and so forth.
- *Min, Max* (minimum, maximum): Select one of these operators to populate the pool with the minimum or maximum value of a given attribute for all the instruments that are part of the pool.
- *Mid:* Calculates the Mid Date value for all date values in the pool.

  ```
  [max (date) ? min (date) / 2 ] = Mid Date
  ```
- *Sum:* The sum action user calculates the total sum value for a numeric attribute.

  The most common attributes that you want to calculate the sum for are the balance and payment amount fields. By calculating the total of the balance and payment amounts, the total of all pool balances should reconcile to and represent the totals of all instruments that are in the portfolio.

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Stratification Tips

Here are some criteria to keep in mind when evaluating how you want to stratify data:

- When identifying attributes that you want to include as part of the instrument pools, keep in mind the primary use of the stratification rule that you are creating.

  For example, Cash Flow Generator uses only the base currency equivalent balance and amount fields for its calculations. As far as Cash Flow Generator is concerned, designing a stratification rule that populates other balance or amount fields is optional.

- You need to identify the stratification criteria for the attributes.

  This step is simplified by the fact that any attributes that you identify as needing to maintain discrete values for, or that are going to be dropped, or defaulted by definition, cannot be used as grouping criteria for pools.

- Maximize efficient processing by designing rules to summarize the instruments into as few pools as possible, while at the same time only grouping instruments that generate the same or a similar stream of cash flows.

  In other words, all of the instruments that are grouped together into a pool should share common and pertinent financial characteristics.

Setting Up Operation Codes

This section lists the page used to set up operation codes.

Page Used to Set Up Operation Codes

Page Name	*Definition Name*	*Navigation*	*Usage*
Amounts	PF_OPCODE_TBL	EPM Foundation, EPM Setup, Common Definitions, System Objects, Operation Codes, Amounts	Define the valid operation codes that are associated with each delivered field type. Typically you use the operation codes that are delivered with each field type and therefore have no need to alter them.

Setting Up Stratification Configurations

This section discusses how to set up stratification configurations.

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Page Used to Set Up Stratification Configurations

Page Name	*Definition Name*	*Navigation*	*Usage*
Stratification Configuration	SE_CONFIG_TBL	Financial Services Industries, Product Portfolio, Stratification, Stratification Configuration	Define the summarization process to any level of complexity.

Stratification Configuration Page

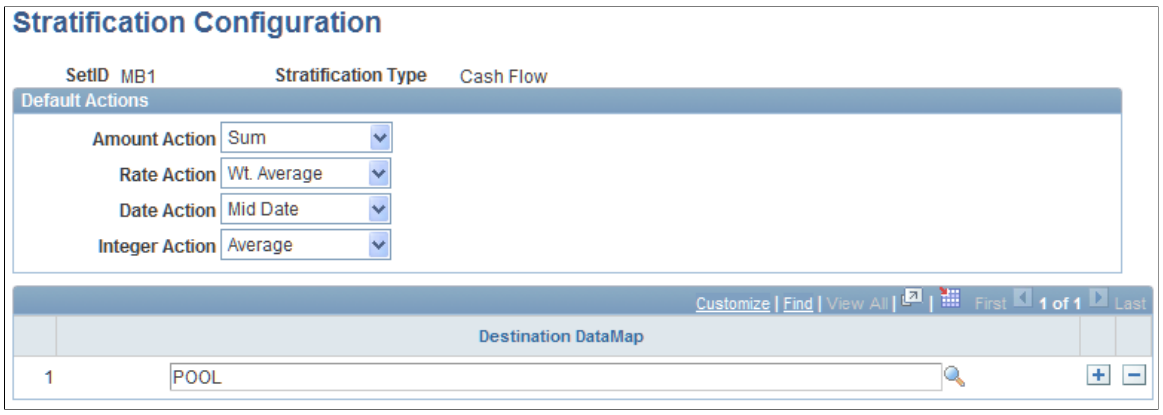
Use the Stratification Configuration page (SE_CONFIG_TBL) to define the summarization process to any level of complexity.

Navigation

Financial Services Industries, Product Portfolio, Stratification, Stratification Configuration

Image: Stratification Configuration page

This example illustrates the fields and controls on the Stratification Configuration page. You can find definitions for the fields and controls later on this page.



To configure stratification:

1. Establish how you want the Stratification application engine to process amounts, rates, dates, and integers by assigning an operation to each.

   This is applies a default value into the action settings on the Definition page.

2. Select a target DataMap in the Destination Data Map field.

Setting Up Tier Structures

An alternative to incremental grouping is to group according to tiers. You can use tiers on numbers, amounts, and rate fields. The main difference between using tiers and increments is that you can define the specific tiers that you want to stratify the data into to match business logic, reporting requirements, or both. Tiers also give you more control in terms of limiting the number of strata created for any given attribute to only ranges that are pertinent for processing or reporting purposes. For example, you could

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define a rule that groups the initial balance amounts in increments of 10,000. However, this could result in hundreds of strata if the balance amounts range anywhere from 1 to 100,000,000. A more efficient and logical way to group balance amounts may be to set up tiers so that the first tier contains amounts between 1 and 50,000; the second tier contains amounts between 50,000 and 1,000,000; and the third tier contains amounts between 1,000,000 and 100,000,000. Tiers are ideal for handling balance amounts.

Page Used to Set Up Tier Structure

Page Name	*Definition Name*	*Navigation*	*Usage*
Tier Structures	FI_TIER_STRUCTURE	Financial Services Industries, Product Portfolio, Stratification, Tier Structures	Stratify source data into a finite number of pools that are used by the Stratification Reporting Rules - Group By page.

Tier Structures Page

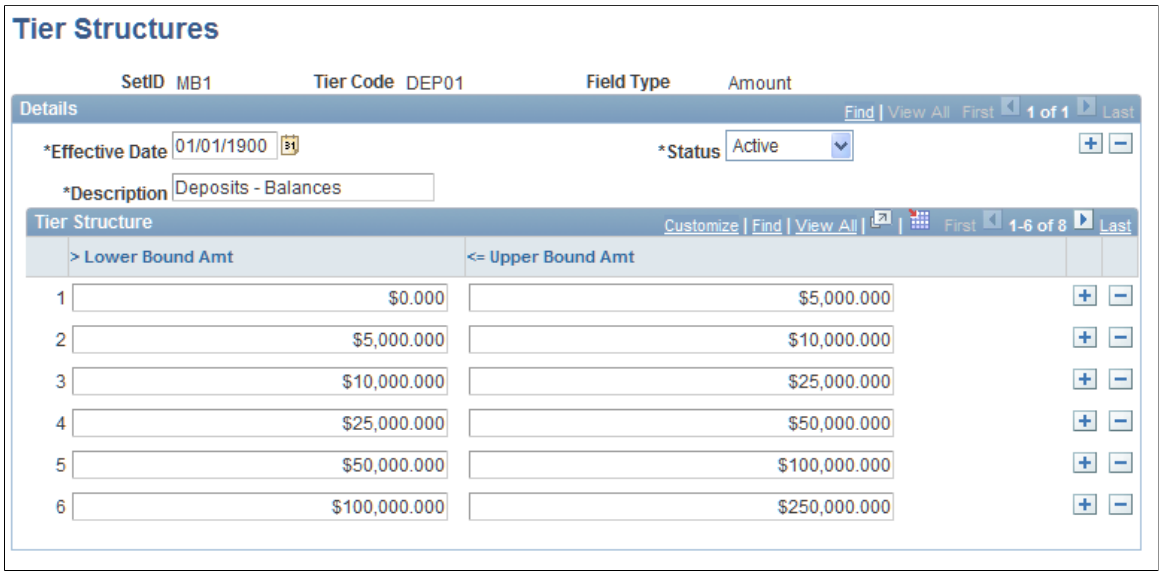
Use the Tier Structures page (FI_TIER_STRUCTURE) to stratify source data into a finite number of pools that are used by the Stratification Reporting Rules - Group By page.

Navigation

Financial Services Industries, Product Portfolio, Stratification, Tier Structures

Image: Tier Structures page

This example illustrates the fields and controls on the Tier Structures page. You can find definitions for the fields and controls later on this page.



Set the lower- and upper-bound amounts for the tiers. The lower-bound range must be greater than the lower-bound amount. The upper-bound range must be less than or equal to the upper-bound amount. These values do not overlap. To accommodate extreme values, the Stratification application engine automatically creates ranges on both the upper and lower sides of the user-defined tiers.

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Note: To use tiers, ensure that TIER is a valid code on the Operation Codes - Amounts page for the selected field type.

Setting Up Stratification Rules

This section discusses how to set up stratification rules by using the Stratification Rules component.

Pages Used to Set Up Stratification Rules

Page Name	*Definition Name*	*Navigation*	*Usage*
Stratification Rules - Definition	SE_TBL	Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Definition	Specify source data and data output tables.
Stratification Rules - Group By	SE_GROUP_SEQ	Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Group By	Indicate how and what attributes of instruments are used to group instruments into pool tables.
Stratification Rules - Amount	SE_AMT_VW	Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Amount	Determine how to aggregate group data.
Stratification Rules - Rate	SE_RATE_VW	Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Rate	Define how to aggregate rate fields.
Stratification Rules - Date	SE_DATE_VW	Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Date	Define how to summarize dates.
Stratification Rules - Integer	SE_NBR_VW	Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Integer	Define how to aggregate integer fields.
Stratification Rules - Code	SE_CHAR_VW	Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Code	Define how to handle code fields. Most of the code fields that are required by the Cash Flow Generator are automatically grouped into discrete strata. For reporting purposes, you need to define the code column that you want to populate for reporting purposes.

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Stratification Rules - Definition Page

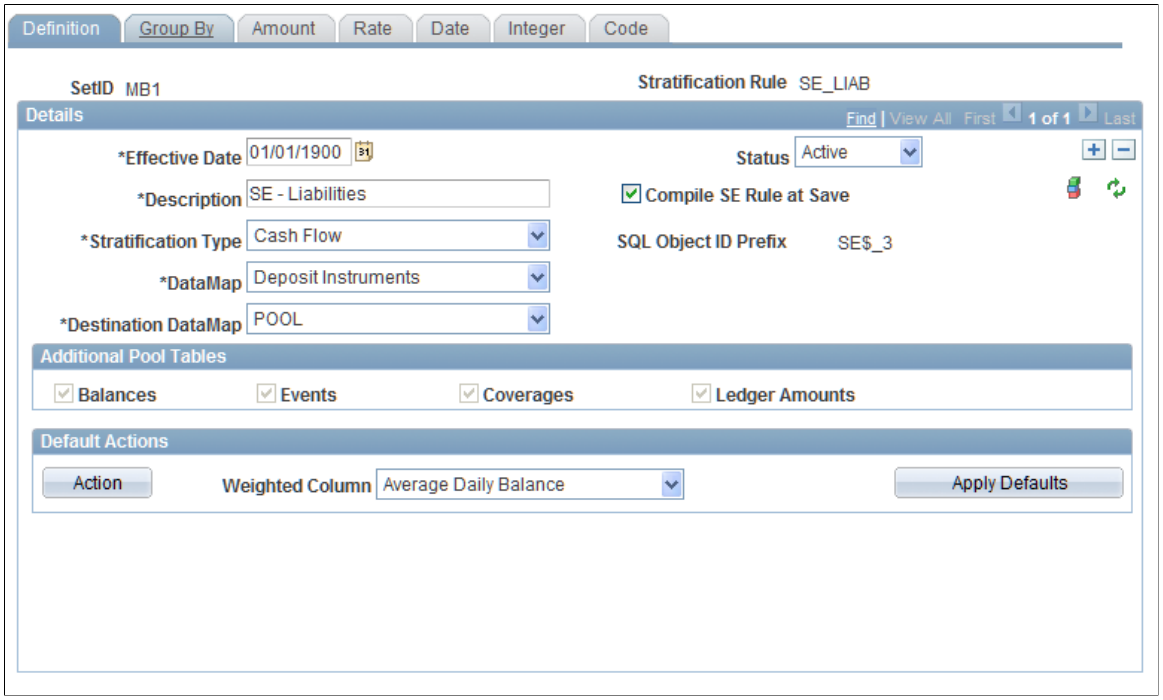
Use the Stratification Rules - Definition page (SE_TBL) to specify source data and data output tables.

Navigation

Financial Services Industries, Product Portfolio, Stratification, Stratification Rules, Definition

Image: Stratification Rules - Definition page

This example illustrates the fields and controls on the Stratification Rules - Definition page. You can find definitions for the fields and controls later on this page.



To define stratification rules:

1. Use the Stratification Rules - Definition page to set up specific stratification rules that differ from the default.

   This page shows the default settings that you specify on the Stratification Configuration page. Start by entering a description and a stratification type.

   Select *Cash Flow* to have the Cash Flow Generator use the output. This affects theDestination DataMap Code field, as it enables you to select only the*Pool* option. Choose*Reporting* to create pools without running cash flows on them. This too, affects theDestination DataMap Code field by enabling you to select only the*Report Pool* option.

2. Select a DataMap Code to identify the source of the data that you want to stratify. PeopleSoft delivers these options: *Deposit Instrument, Instrument Option View, Instrument for Multicurrency, Loan Instruments,* and*Variable Rate Loans.*You can also use any other datamap that you define.

3. Select the Compile SE Rule at Save check box to ensure that the rule is automatically compiled when you save.

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Compilation process takes a while to execute, so you may want to clear this option while initially configuring a stratification engine rule.

4. Once you completely define the stratification engine rule, click the Compile Rule button to trigger the compilation process.

Note: Stratification Rules cannot be mass compiled by the EPM Warehouse Mass Compile Utility. They must be compiled individually.

---

5. If you need to refresh the DataMap columns, click theRefresh Datamap Columns button.

6. Review the Additional Pool Tables group box, which displays the other pool tables where aggregated data is populated.

7. Use the Default Actions group box to override the default rules for selected weighted columns.

   Click the Action button to access the Default Values page. On this page, establish how you want the Stratification application engine to process amounts, rates, dates, and integers by assigning an operation to each. If you want to reset action codes to their respective default settings, click theApply Defaults button.

8. Proceed to set up the Group By page to establish how data is grouped.

   Depending on the complexity of the grouping, a pool often contains numerous instruments.

   a. Select the source date from the source column, then assign a stratification operation for them.

      Valid operations depend on the data type that is in the source column. Options are:

Periodic:	Date fields only.
Increments:	Any numeric field.
Discrete:	All fields except date fields.
Tiered:	Many numeric fields.

   b. To specify additional data type parameters, click the Parameters button.

      When you finish, return to the Stratification Rules - Group By page.

   c. If you specify *Tiered* for the source data, specify a tier code.

9. Proceed with setting up the remaining Stratification Rules pages for amounts, rates, dates, integers, and codes.

   The setup for each of these pages is the same. In the source column, select the source data that you want to aggregate, then specify an action operation for that data.

   Depending on the selection, you may have additional columns to set up. For example, if you specify *Wt. Average,* you can further specify the field for which you want the source column value that is weighted inWeighted Column. If you specify*Default,* enter a default amount for the designated strata if you want to force a constant value for all the pools.

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Defining Stratification Reporting Rules

This section discusses how to set up stratification reporting rules.

Page Used to Set Up Stratification Reporting Rules

Page Name	*Definition Name*	*Navigation*	*Usage*
Reporting Pool Rule	SE_REPORT	Financial Services Industries, Product Portfolio, Stratification, Stratification Reporting Rules, Reporting Pool Rule	Specify rules the Stratification application engine uses for reporting purposes as opposed to cash flow stratification rules.

Reporting Pool Rule Page

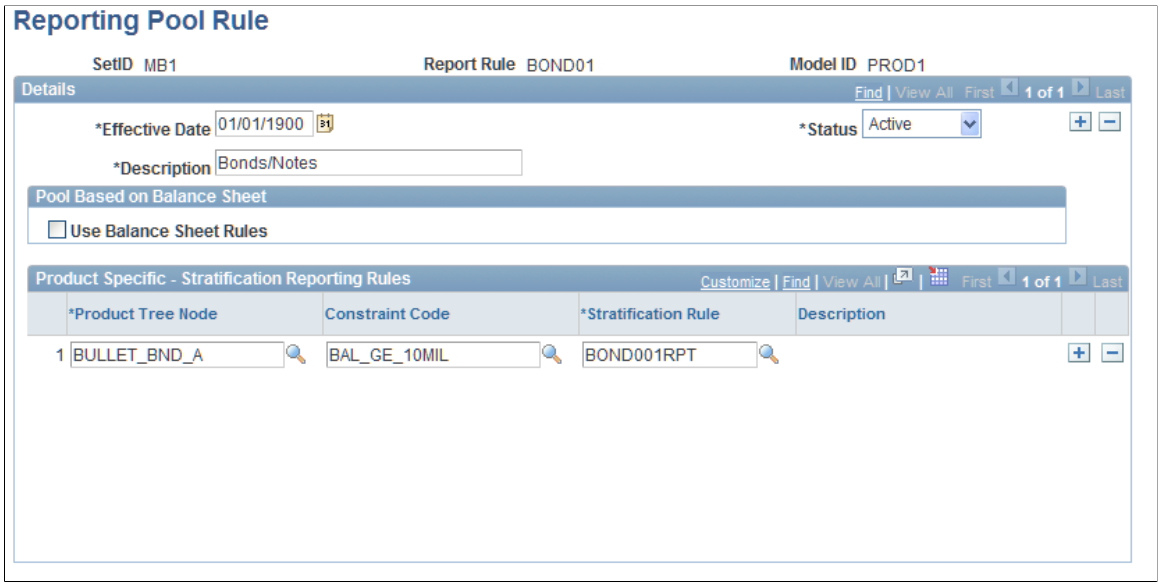
Use the Reporting Pool Rule page (SE_REPORT) to specify rules the Stratification application engine uses for reporting purposes as opposed to cash flow stratification rules.

Navigation

Financial Services Industries, Product Portfolio, Stratification, Stratification Reporting Rules, Reporting Pool Rule

Image: Reporting Pool Rule page

This example illustrates the fields and controls on the Reporting Pool Rule page. You can find definitions for the fields and controls later on this page.



To set up stratification reporting rules:

1. Select the Use Balance Sheet Rules check box if you want to group instruments based on hierarchy that is defined on the Balance Sheet Rules setup page.

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This activates the Default Stratification Rule field, where you assign the group pools.

2. If you decide not to select the Use Balance Sheet Rules option, specify subsets of strata for which you may assign different product-specific stratification rules.

   Select a product in the Product Tree Node field, then assign a constraint code and stratification rule for that product.

Copying Stratification Rules

This section discusses how to copy stratification rules and modify them as necessary.

Page Used to Copy Stratification Rules

Page Name	*Definition Name*	*Navigation*	*Usage*
Copy Stratification Rules	SE_RULE_COPY	Financial Services Industries, Product Portfolio, Stratification, Copy Stratification Rules	Create and modify stratification rules from existing rules.

Copy Stratification Rules Page

Use the Copy Stratification Rules page (SE_RULE_COPY) to create and modify stratification rules from existing rules.

Navigation

Financial Services Industries, Product Portfolio, Stratification, Copy Stratification Rules

To copy an existing stratification rule:

1. Select the rule type: Cash Flows orReporting.
2. Select an existing rule in the Copy From column.
3. Enter the name of the new rule in the New Rule column.
4. Click the Copy button.

   A processing message appears in the Return Message column to indicate if processing is successful or if there is an error.

Aggregating Data

At this point, you have set up all the relevant pages for stratifying data. The next step is to run the Stratification application engine to generate the instrument pools and aggregate individual instrument data into these pools. You do this by running a jobstream that includes the Stratification application engine in

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its processing, such as the Financial Performance Measures, or by running the Stratification application engine separately.

After you stratify instrument data into pools, the financial services industry application engines and the financial services industry applications, then use these instrument pools. For example:

- The Cash Flow Generator uses these instrument pools to efficiently process large volumes of instrument data.
- PeopleSoft Funds Transfer Pricing (FTP) uses these pools to set up FTP rates for a group of instruments.

  FTP calls the Stratification application engine whenever the FTP rate is based on the results of the Cash Flow Generator, duration, average life, or strip funding.
- PeopleSoft Risk-Weighted Capital (RWC) uses these instrument pools when calculating normalized loss or risk-weighted capital allocations for a group of instruments.

When using the Stratification application engine for cash flow processing, you have several options. You can:

- Run the Stratification application engine to aggregate instrument data into pool tables.

  You can then run the Cash Flow Generator application engine separately, using as input the instrument pools that are aggregated by the stratification engine.
- Run FPM, which combines the Stratification application engine and the Cash Flow Generator application engine (FI_CASHFLOW) into a single jobstream.
- Run the Cash Flow Generator application engine without prior stratification of instrument data into pools.

Note: If you run FPM and set up product pricing or prepayment filters on cash flow rules, these filters are evaluated prior to calling the Stratification application engine. For example, you set up a pricing filter assigning a unique pricing rule to instruments with certain financial characteristics. The Stratification application engine ensures that those instruments matching the pricing filter are processed together and are not included in pools with other instruments that are not matching the pricing filter criteria.

There are several advantages to running the Stratification application engine separately rather than through the FPM engine.

First, running the Stratification application engine separately enables you to reuse the pools for subsequent cash flow processing rather than repeatedly stratifying pools every time you run FPM. This trimming of stratification overhead is useful, particularly if the stratification settings are fairly constant and you have frequent modelling changes, because you can turn around analytics more quickly.

Second, through the use of master scenarios and input scenarios, you can divide subsequent cash flow processing into discrete scenarios, each addressed by an analyst who is responsible for a different portion of the portfolio. This option is useful if you want to generate cash flows for different scenarios based on the same instrument pools. By running the Stratification application engine for the master scenario, you generate common instrument pools that act as the basis for subsequent modeling and processing activities. Analysts can then create their own unique scenarios that identify this master scenario as the input scenario. Analysts next run the Cash Flow Generator application engine for their unique scenario to create cash flows that use as source data the pools that are generated for the master scenario. The Cash

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Flow generator application engine tags the cash flow output with the analyst-specific scenario IDs. To define scenarios and assign input scenarios, use the Scenario ID page.

Testing Stratification Rules

A critical step in building a stratification rule is to test the rule with real data. When testing, ensure that all of the instruments are included into a pool, and that the data in the pool results in accurate cash flows and financial calculations. During testing, you should also check that the rule set up is designed so that the number of pools that are created is small enough to ensure efficient processing but large enough that you do not obscure any material financial characteristics.

For example, assume that you have the following loans for which you want to develop stratification rules:

```
Loan A: Term = 30 Year, Interest Rate 7.25%, Balance $125,000, Start Date Jan 12, 1⇒
989

Loan B: Term = 15 Year, Interest Rate 7%, Balance $125,000, Start Date Jan 22, 1989

Loan C: Term = 30 Year, Interest Rate 7.35%, Balance $125,000, Start Date Jan 19, 1⇒
989

Loan D: Term = 15 Year, Interest Rate 7.125%, Balance $125,000, Start Date Jan 22, ⇒
1989

Loan E: Term = 30 Year, Interest Rate 12%, Balance $45,000, Start Date Jan 12, 1972
```

With the Stratification application engine, you can define the following strata:

```
Type of instrument: Fixed Rate Mortgage Loans

Interest rate ranges: Increments of .25 percent

Balance amounts tiers:

0 to $50,000
$50,000 to $100,000
$100,000 to $500,000
$500,000 to $1,000,000
$1,000,000 to $25,000,000

Starting date: Monthly increments

Term to maturity: In discrete values
```

The results of stratification are three instrument pools that represent the types of loans. According to the stratification rules that you define, each loan fits in one of the following three categories:

```
Instrument pool #1: Term = 30 Year, Weighted Avg Int Rate = 7.3%,
Balance = $250,000, Start Date Jan 1,1989

Instrument pool #2: Term = 15 Year, Weighted Avg Int Rate = 7.0625%,
Balance = $250,000, Start Date Jan 1,1989

Instrument pool #3: Term = 30 Year, Weighted Avg Int Rate = 12%,
Balance = $45,000, Start Date Jan 1, 1972
```

As the results indicate, all the instruments are included into a pool, and the data that is in the pool results in accurate cash flows and financial calculations. The data is designed for efficient processing, yet no important financial data is omitted.

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Chapter 9

Setting Up Behavioral Models, Negative Amortization, and Service Fee Models

Setting Up Behavioral Models

This section provides an overview of behavioral models and discusses how to define them.

Pages Used to Set Up Behavioral Models

Page Name	*Definition Name*	*Navigation*	*Usage*
Behavioral Model	FI_BEHV_MDL_PNL	Financial Services Industries, Models and Parameters, Behavioral Models, Behavioral Models, Behavioral Model	Define a behavioral model for interest rate sensitivity.
Behavioral Models - Notes	FI_BEHV_NOTES_PNL	Financial Services Industries, Models and Parameters, Behavioral Models, Behavioral Models, Notes	Enter any descriptive text relating to the behavior model that you are defining.

Understanding Behavioral Models

Behavioral models describe how a customer holding a particular type of product for a certain length of time might behave relative to changes in market interest rates, taking into account such factors as geography, credit rating, age of the instrument, and time of year. For example, customers can react to changing interest rates by prepaying their mortgages or withdrawing their deposits.

When projecting cash flows for these products, the Cash Flow Generator application engine takes into account the results from the behavioral models that you define, when projecting cash flows for these products.

You can assign several models to one product. For example, you can assign "Model X" to loans in Georgia that are more than five years old and have poor credit ratings and assign "Model Y" to loans in Arizona that are less than five years old with excellent credit ratings. By doing so, you create a model for each subset that you want to treat differently from the total population of that product.

Almost all of the behavioral models are evaluated only on the instrument's payment date. The only exception is the Rate Lock behavioral model, which is evaluated on the dates of the rate lock options.

This section discusses:

- Modeling criteria.

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- Types of behavioral models.

Modeling Criteria

To model behavior, enter values for one or more of the following criteria:

- Weighted Average Coupon rate (WAC).
- Age (always in months).
- Rate delta.

An algorithm takes those values and processes the data according to the following parameters:

If	*The System Selects*
On an instrument's payment date, the value (interest rate) of that instrument as defined by the Price Index Model falls between your defined WAC values.	The minimum of all the WACS that are greater than or equal to the instrument value that the Price Index Model defines.
You have defined age as a factor and the instrument's age falls between your defined ages.	The maximum of all the ages that you have defined, which are less than or equal to the age of the instrument.
You have defined rate delta and the instrument's rate delta (the Product Pricing Index minus the current WAC) falls between your defined rate deltas.	The maximum of all the rate deltas that you have defined, which are less than or equal to the rate delta of the instrument.

For processing to occur, ensure that you have defined at least one of the following:

- WAC value that is large enough to establish the upper bound, so that all possible WACs returned by the Product Pricing model will fall below the upper bound.
- Age value that is small enough to establish the lower bound, so that all possible ages will fall above the lower bound.
- Rate delta that is small enough to establish the lower bound, so that all possible rate deltas (returned by the Product Pricing Index minus the current WAC) will fall above the lower bound.

Types of Behavioral Models

Using the Behavioral Models page, create or modify behavioral models according to model type. The page varies according to the model type that you select. This table lists the six model types:

Model Type	*Used for Modeling*
Charge Off	Loss or charge-off rate on loans and lines of credit. The Cash Flow Generator application engine uses this model to estimate projected losses on loans and lines of credit. Charge-off models can be applied only to products with these instrument base types: Loans or Lines Of Credit.

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Model Type	*Used for Modeling*
Credit Draw-Down	Rate at which funds are drawn against a line of credit or a credit card. Credit draw-downs can be used only for Lines Of Credit.
Deposit Growth	Rate at which deposits are to grow. Deposit growth models can be used only for products with an instrument base type of Deposit (that is nonmaturing).
Deposit Runoff	Rate at which deposits are to decrease relative to their age. Deposit runoff models can be used only for products with an instrument base type of Deposit (that is maturing).
Prepayment Model	Rate at which a loan is to prepay, in reaction to changes in market interest rates and in relation to the loan's age. Prepayment models can be applied only to products with these instrument base types: Bonds, Loans, or Lines of Credit. Prepayment model types are explicitly specified. **Note:** For this type, you must also set up the seasonality groups.
Rate Lock	When the rate lock occurs for variable loans with rate lock options. Rate locks can be applied only to products that have a rate lock model defined in the product definition page.

Behavioral Model Page

Use the Behavioral Model page (FI_BEHV_MDL_PNL) to define a behavioral model for interest rate sensitivity.

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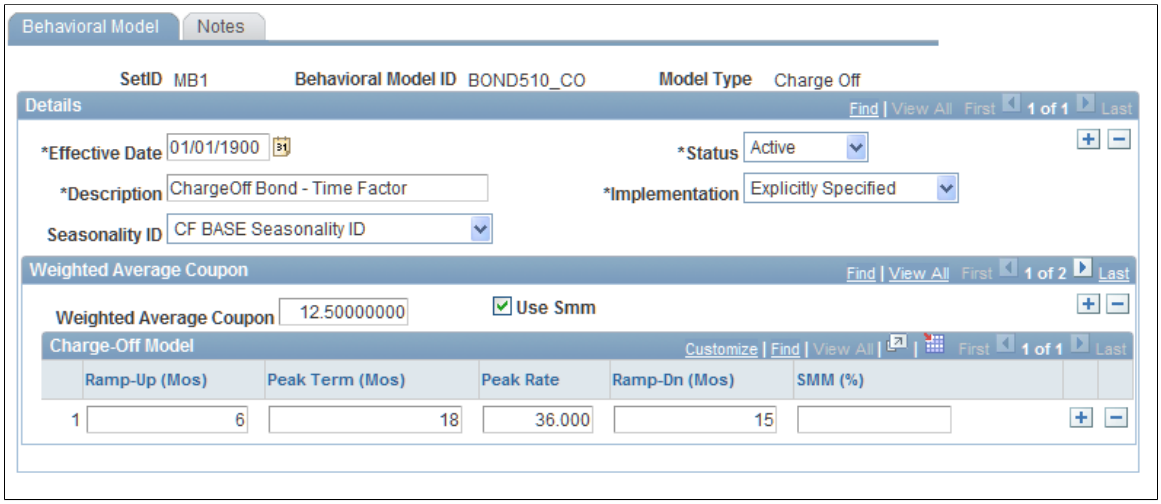
Navigation

Financial Services Industries, Models and Parameters, Behavioral Models, Behavioral Models, Behavioral Model

Image: Behavioral Model page

This example illustrates the fields and controls on the Behavioral Model page. You can find definitions for the fields and controls later on this page.



Note: This is a dynamic page. The options that you choose in the fields may activate or deactivate additional fields.

To define behavioral models:

1. Select, on the access page, the type of behavioral model that you want to create: *Charge Off, Credit Draw-Down, Deposit Growth, Deposit Runoff, Prepayment,* or*Rate Lock.*

2. The Implementation field enables you to select the type of parameters that you can set up for your model.

   For all models, select *Explicitly Specified.* This is the default value.

3. Select the predefined seasonality ID.

   The options that appear here were created on the Seasonality Groups page. This enables you to factor an adjustment for cyclical (seasonal) patterns into the modeling. The seasonality factor is applied as a multiplier to the results that are returned by the behavioral model.

4. Enter the weighted average interest rate for this pool in the Weighted Average Coupon field.

   You can define as many rows as necessary for each model that has different coupon rates.

5. Select the SMM (single monthly mortality) option if you are using this method.

6. Enter the number of months (starting from origination when rates are increasing) in the Ramp-Up (Mos) field.

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7. Enter the number of months during which the rate peaks do not increase or decrease in the Peak Term (Mos) field.
8. Enter the percentage rate at which a rate peaks in the Peak Rate field.
9. Enter the number of months during which charge-off rates are decreasing, eventually reaching a constant (seasoned) rate in the Ramp-Dn (Mos) field.
10. Enter the rate when it becomes seasoned in the Constant _ Rate field.

    This column varies slightly according to the model that you create. For example, this column appears as Constant Charge-Off Rate for the Charge-Off model.
11. Select the Use Age check box to enable the system to factor the age of the instrument, deposit, or loan into the modeling.
12. Enter the difference between rates in the Rate Delta (bps) field.

    If this is for the Rate Lock model, this is the difference in rates that the borrower would require to be incited to pursue the rate lock rate option and accept the rate being offered by the institution as the new rate (that is, excise option). For example, suppose that the current coupon rate is three percent, then a rate difference of one percent might be appropriate for the borrower to accept the new rate as a fixed rate, trading off the variable rate option previously on the product.
13. Enter the average age of the deposit, instrument, or loan in the Age (Months) field.
14. Enter the constant prepayment rate (CPR).

    This is the annualized percentage prepayment rate.
15. Enter the percent of Public Securities Administration (PSA) that corresponds to the CPR that you entered.
16. Enter the single monthly mortality rate (SMM), which is based on the CPR rate that you entered.

    The SMM is calculated as SMM = 1 – (1 – CPR)*1/12.

Setting Up Negative Amortization

This section provides an overview of negative amortization and discusses how to:

- Define negative amortization rules.
- Attach a negative amortization rule to an instrument.

Page Used to Set Up Negative Amortization

Page Name	*Definition Name*	*Navigation*	*Usage*
Negative Amortization Parameters	FI_NEG_AMORT_DEFN	Financial Services Industries, Models and Parameters, Behavioral Models, Negative Amortization	Define negative amortization rules.

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Understanding Negative Amortization

Sometimes, the rate a bank charges the customer changes more frequently than the customer's payment is adjusted. Suppose that the interest rate is reset monthly, while the payment is reset annually. If the interest rate rises while the monthly payments remain the same, then the payment does not cover the interest on the loan, and the principal amount increases over time. This is known as negative amortization.

With the Negative Amortization feature, you can:

1. Specify a coefficient and a period for initial payment reduction.
2. Specify the payment reset frequency.
3. Specify the ceiling factor.
4. Place a cap and floor on the payment changes.
5. Specify the payment recast teaser and frequency.

Note: Only floating loans can amortize negatively.

Negative Amortization Parameters Page

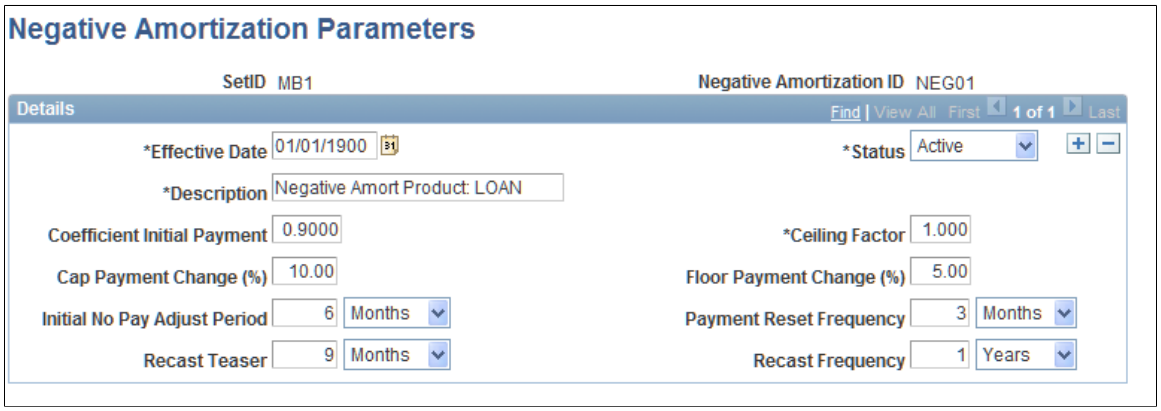
Use the Negative Amortization Parameters page (FI_NEG_AMORT_DEFN) to define negative amortization rules.

Navigation

Financial Services Industries, Models and Parameters, Behavioral Models, Negative Amortization

Image: Negative Amortization Parameters page

This example illustrates the fields and controls on the Negative Amortization Parameters page. You can find definitions for the fields and controls later on this page.



To define negative amortization rules:

1. Enter a short description for the negative amortization ID.
2. Enter the percentage of monthly payments to be applied in the initial period (usually less than 100 percent) in the Coefficient Initial Payment field.

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You can enter this percentage as a decimal.

3. Use the Ceiling Factor field to enter the percentage that represents the upper limit to the increase in monthly payments, from one reset or recast period to the next.

   This limit applies to the life of the loan. You can enter this number as a decimal.

4. Use the Cap Payment Change (%) field to enter the upper limit to the increase in monthly payments, when resetting the rate.

5. Use the Floor Payment Change (%) field to enter the lower limit to the decrease in monthly payments, when resetting the rate.

6. Enter the number of months, days, or years representing the initial payment period during which the coefficient initial payment applies in the Initial No Pay Adjust Period field.

7. Enter the number of months, days, or years representing the reset frequency period in the Payment Reset Frequency field.

8. Enter the number of months, days, or years representing the starting point at which the rate is recast in the Recast Teaser field.

9. Enter the number of months, days, or years representing the recast frequency period in the Recast Frequency field.

Note: The payment reset calculations take into account both the ceiling factor (over the life of the loan) as well as the cap payment change and floor payment change (in a single period). The payment recast calculation only takes into account the ceiling factor. With all negative amortization calculations, the recast rule always overrides the reset rule.

Attaching a Negative Amortization Rule to an Instrument

After you define the negative amortization rule, assign it to the financial instruments in your Extract, Transform, and Load process. For test instruments, you can assign the rule directly in the Financial Instrument Entry - Instrument page. Select the Negatively Amortizing option and select the predefined negative amortization ID from the available options.

Setting Up Service Fees

This section provides an overview of service fee models and discusses how to define them.

Pages Used to Set Up Service Fees

Page Name	*Definition Name*	*Navigation*	*Usage*
Service Fee Model - Definition	FI_SVCFEE_DEFN	Financial Services Industries, Models and Parameters, Behavioral Models, Service Fee Model, Definition	Set up and model fees charged for services.

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Page Name	*Definition Name*	*Navigation*	*Usage*
Service Fee Model - Notes	FI_SVCFEE_NOTES	Financial Services Industries, Models and Parameters, Behavioral Models, Service Fee Model, Notes	Enter descriptive text concerning the Service Fee Model.

Understanding Service Fee Models

PeopleSoft Funds Transfer Pricing uses the Service Fees Model to model noninterest revenues and expenses in earnings simulations. These amounts correlate with product volumes and are an additional component to interest-rate sensitive earnings.

Through the Service Fee Models component, you can model fees and charges associated with your products, such as loan origination fees or monthly maintenance fees. These service fees are assigned to the products in the Price Index Model, under the financial calculation rules. These fees are then factored in as part of the regular cash flow calculations.

After you have defined the Service Fees Models, you can assign them to products or instruments on the Pricing page of the Financial Calculation Rules component.

Service Fee Model - Definition Page

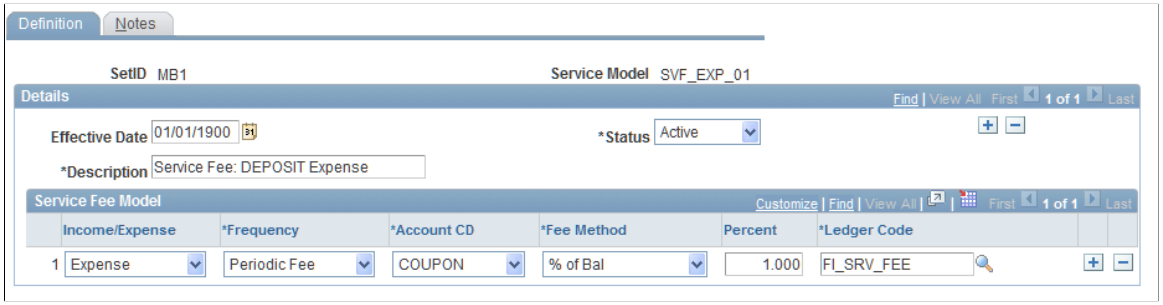
Use the Service Fee Model - Definition page (FI_SVCFEE_DEFN) to set up and model fees charged for services.

Navigation

Financial Services Industries, Models and Parameters, Behavioral Models, Service Fee Model, Definition

Image: Service Fee Model - Definition page

This example illustrates the fields and controls on the Service Fee Model - Definition page. You can find definitions for the fields and controls later on this page.



To define a Service Fee Model:

1. Define each row of the model as an income or expense.
2. Apply a frequency for each row, either *Periodic Fee* or*Origination Fee.*

   The periodic fee is to be assessed with the same periodicity as the scenario definition.

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3. In the Account CD field, select an account code for which the fee applies and a fee method.

   Select *% of Bal* (balance) (calculated as a percentage of the account balance), then enter the percent amount.

   Or select *Unit Fee* (a fixed amount fee per account). Then, enter a fee amount. For multicurrency processing, the fee amount should be specified in the base currency of the business unit. If the business unit includes instruments denominated in multiple currencies, the end result should be run through the Multiple Currency engine. This translates amounts to the appropriate transaction currency using the foreign exchange rate as of the run date.

4. Determine to which ledger the fee is to be posted in the Ledger Event Code field.

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Chapter 10

Setting Up Financial Instruments

Entering Financial Instrument Data

This section discusses how to:

- Describe financial instruments.
- Enter data for instruments with variable rates.
- Enter detailed instrument data.
- Enter status information about instruments.
- Enter option information about instruments.
- Enter the remaining instrument data.

Pages Used to Enter Instrument Data

Page Name	*Definition Name*	*Navigation*	*Usage*
Instrument	FI_INSTRUMENT	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Instrument	Describe the instrument, including its term, payment, and interest calculation information.
Variable Rate Data	FI_INSTR_VAR	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Variable Rate Data	Enter the interest rate and reprice data for instruments with variable rates. The data that you enter writes to the FI _ISTR_F00 table.
Instrument Detail	FI_INSTR_MISC	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Instrument Detail	Enter detailed data, such as rate locks and teaser rate data about the instrument. The data that you enter writes to the FI _ISTR_F00 table.
Status	FI_ISTATUS_PNL	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Status	Enter current status information about the instrument.
Balances	FI_IBAL_PNL	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Balances	Enter information about the instrument balance.

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Page Name	*Definition Name*	*Navigation*	*Usage*
CF Events	FI_IEVENT_PNL	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, CF Events	Enter information about the instrument's cash flow events.
Option	FI_IOPTION_PNL	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Option	Enter option information for the instrument.
Reprice Events	FI_IRATE_PNL	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Reprice Events	Enter repricing events (when the interest rate is reset).
Demographics	FI_IDEMOG_PNL	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Demographics	Enter demographic data about this instrument.
History	FI_ITRNHST_PNL	Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, History	Enter transaction information such as payments.

Instrument Page

Use the Instrument page (FI_INSTRUMENT) to describe the instrument, including its term, payment, and interest calculation information.

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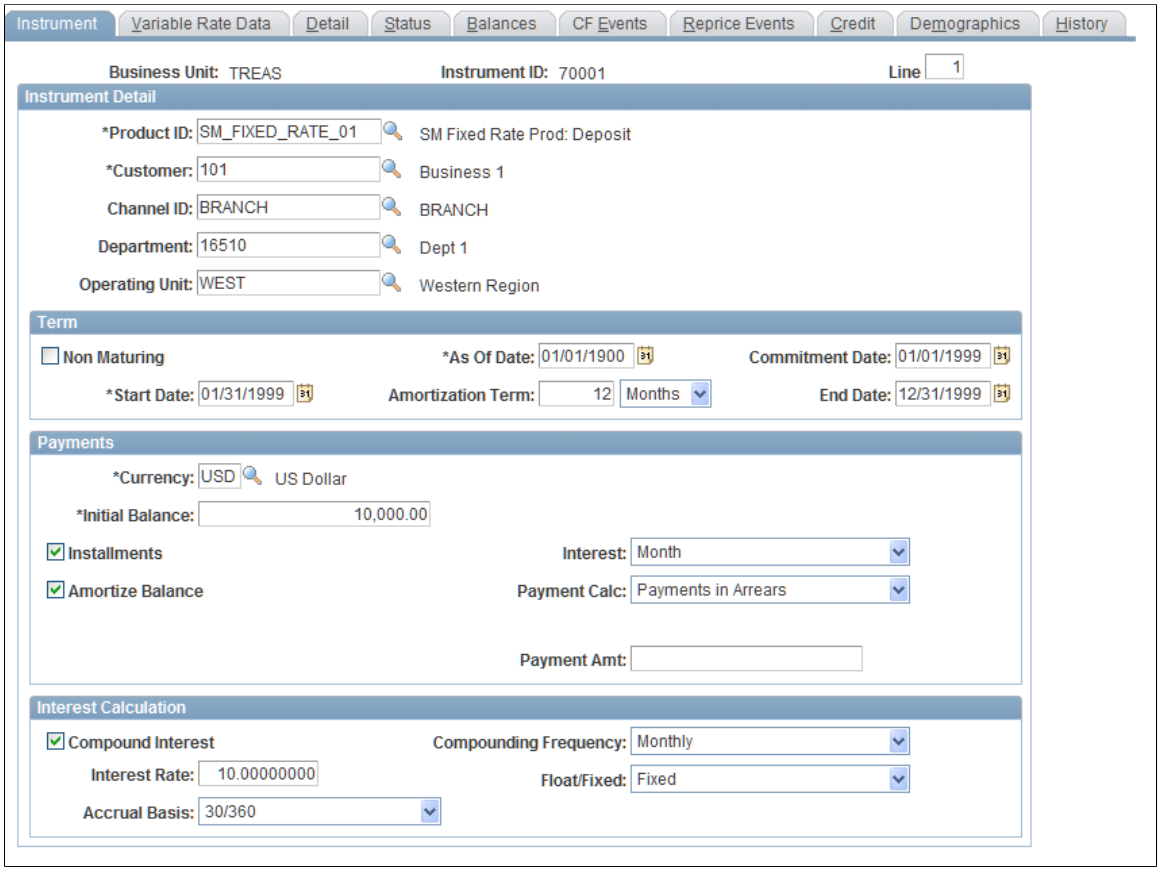
Navigation

Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Instrument

Image: Instrument page

This example illustrates the fields and controls on the Instrument page. You can find definitions for the fields and controls later on this page.



To describe an instrument:

1. Enter general instrument detail information.

2. Set up general term information.

3. Set up payments information.

   Select the currency and enter an initial balance and payment amount. If you want the payments to be made in installments, select the frequency for the payments. Indicate whether you want to amortize the balance and whether you want to amortize the balance negatively. Select the payment calculation method.

4. Use the Interest Calculation group box to set up how you want to calculate the interest.

   Select the Compound Interest option if you want to compound the interest. If so, specify a compounding frequency. Enter the interest rate (if this is a fixed loan) and select how the rates are to be determined in theFloat/Fixed field. Values are:

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Administered	The rate is evaluated on the cash flow dates. The cash flow calculation looks to the pricing index to determine if there is a product rate change based on the current rate environment.
Floating	The rate changes according to a defined schedule.
Fixed	The rate never changes. The system looks at the index value on the cash flow dates to determine new product rates for input to the deposit runoff model.

5. Enter a value for the accrual basis.

Variable Rate Data Page

Use the Variable Rate Data page (FI_INSTR_VAR) to enter the interest rate and reprice data for instruments with variable rates.

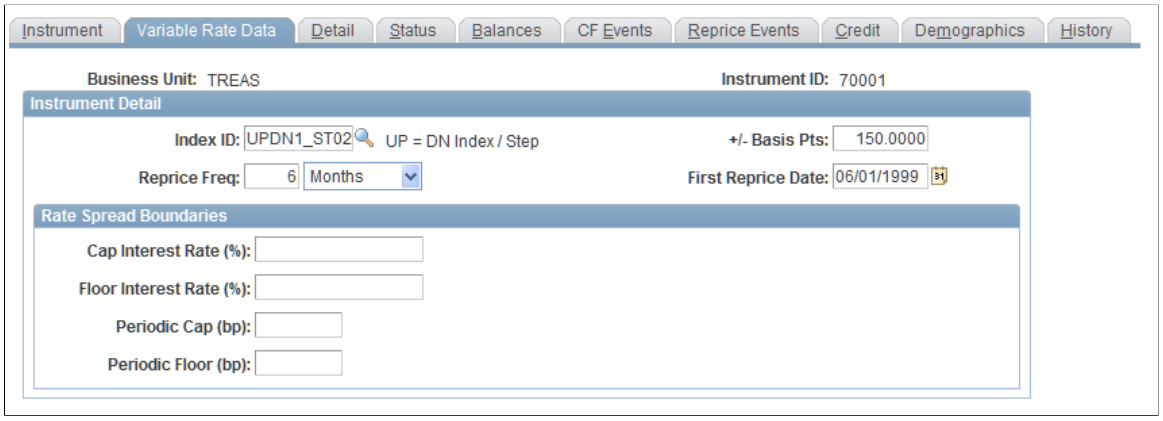
The data that you enter writes to the FI_ISTR_F00 table.

Navigation

Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Variable Rate Data

Image: Variable Rate Data page

This example illustrates the fields and controls on the Variable Rate Data page. You can find definitions for the fields and controls later on this page.



To enter data about instruments with variable rates:

1. Specify general instrument detail information.

   Enter the pricing index to use in the construction of the interest rate in the Index ID field.

2. Select the number of basis points to add or subtract from the interest rate that is constructed from the pricing index in the +/- Basis Pts (margin in basis points) field.

3. If you specify as a floating instrument, determine how often an interest rate is repriced or recalculated, enter a number and then select *Months, Days,* or *Years.*

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4. Enter the first date during the instrument's life that a new interest rate is calculated in the First Reprice Date field.

5. Indicate the absolute maximum rate that the instrument can have at any point during its life in the Cap Interest Rate (%) field.

6. Indicate the absolute minimum rate that the instrument can have at any point during its life in the Floor Interest Rate (%) field.

7. Enter the maximum increase in basis points that the instrument can have from reprice period to reprice period in the Periodic Cap (bp) field.

Instrument Detail Page

Use the Instrument Detail page (FI_INSTR_MISC) to enter detailed data, such as rate locks and teaser rate data about the instrument.

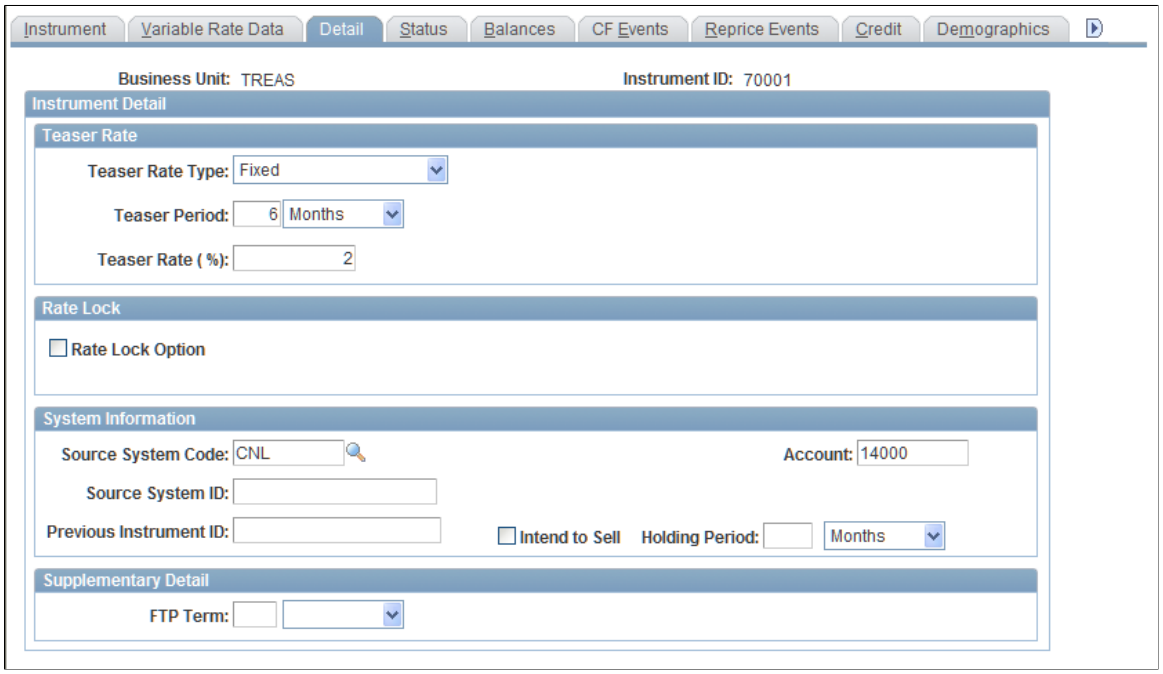
The data that you enter writes to the FI_ISTR_F00 table.

Navigation

Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Instrument Detail

Image: Instrument Detail page

This example illustrates the fields and controls on the Instrument Detail page. You can find definitions for the fields and controls later on this page.



Note: The fields on this page may vary depending on how you set up the instrument page.

To enter detailed instrument data:

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1. Select a teaser rate type.

   Values are: *0: None,1: Variable Rate,* and*2: Fixed Rate.*

2. Select the number of days, months, or years in the Teaser Period field.

3. Specify how often an interest rate reprices or recalculates.

   Enter a number in the Teaser Re-Price Freq (teaser reprice frequency) field and then select *Months, Days,* or*Years.*

4. If the teaser rate is variable, enter the price index underlying the teaser rate in the Teaser Index field.

5. If the teaser rate is variable, use the Teaser Margin (bps) field to enter the number of basis points to add or subtract from the rate that is constructed from the pricing index.

6. Select the Rate Lock Option check box if the instrument has a rate lock option.

   Clear the check box if it does not.

7. Enter the rate lock frequency in the Rate Lock Freq field.

   Values are *Months, Days,* and*Years.*

8. Select the Set Rate Lock From Index check box if this rate lock is based on an index.

   Clear the check box if it is not.

9. Select the One Time Option check box if this is a onetime option.

   Clear the check box if it is not.

10. If the rate lock rate is fixed, enter the rate lock rate (percentage) Rate Lock Rate (%) field.

11. If applicable, select the index on which the rate lock is based in the Rate Lock Index field.

12. If the rate lock rate is variable, enter the basis point adjustment to the rate lock index in the Rate Lock Margin (bps) field.

13. Select the predefined source system code.

14. Enter an optional general ledger account number with which this instrument is associated in the Account field.

15. Enter the instrument ID from the source system in the Source System ID field.

16. Enter the instrument ID prior to its renewal or extension in the Previous Instrument ID field.

17. Enter the term number used for transfer pricing the instrument balance in the FTP Term field.

    Values are *Months, Days,* and*Years.*

Status Page

Use the Status page (FI_ISTATUS_PNL) to enter current status information about the instrument.

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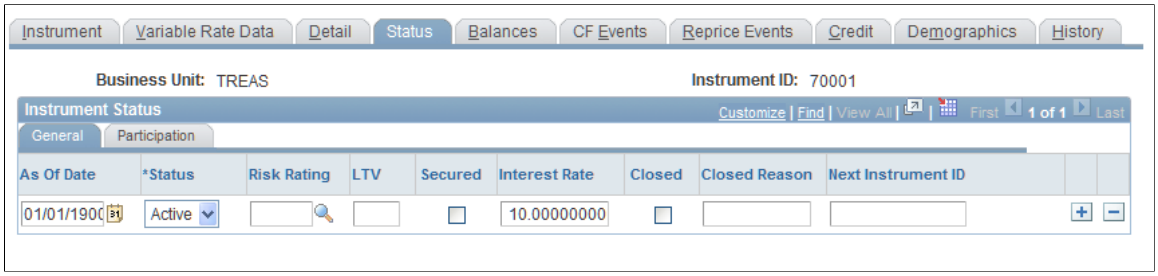
Navigation

Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Status

Image: Status page

This example illustrates the fields and controls on the Status page. You can find definitions for the fields and controls later on this page.



To enter current status information about an instrument:

1. Specify the last date for which the report or process includes data in the As of Date field.
2. Select the status.

   Enter a risk rating and an LTV (loan to value) percentage ratio. Select the Secured check box if there is some underlying collateral that makes the instrument secure.
3. Specify the interest rate (as a percentage) to apply to instruments with variable interest rates.
4. Select the Closed check box to indicate that this contract is closed. If so, enter the reason why.
5. Specify the next instrument ID.
6. Select the Participation tab.

   Select the Sold check box to indicate that the instrument has been sold.
7. Specify the proportion of the balance retained as a percentage in the Percent Retained field.
8. Select an optional predefined risk rating code in the Risk Rating field.

   Use this option to assign a level of risk (credit or other) associated with the instrument.
9. Enter the instrument that replaced or superseded this instrument in the Next Instrument ID field.

Option Page

Use the Option page

Navigation

Financial Services Industries, Product Portfolio, Instrument Detail Information, Financial Instrument Entry, Option.

This page is available only if the product that you are defining has an option leg defined at the product level. Currently, PeopleSoft Financial Services Industry offers two option products, a swaption and a

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callable bond. At the instrument level, a swaption consists of two instruments that you must define, the fixed pay side of the swap and the floating receive side of the swap. You define a callable bond as a bond. Define the optionality for a swaption or callable bond on the Option page. The system stores the instrument level option information that you enter on this page in the FI_IOPTION_R00 table. Many of the fields in the FI_IOPTION_R00 table are not relevant to creating future cash flows for swaptions and callable bonds and are therefore currently not in use; however, they are important to the data model.

To enter option information about an instrument:

1. Enter a date for this row of option data in the As of Date field.
2. Select whether the status of this row is active or inactive in the Status field.
3. During future cash flow processing, the cash flow engine examines the value of the In/Out field (OPT_CD_VALUE) on the I_OPTION_R00 table to determine how the cash flow engine processes the instrument for each swap leg or for the bond leg.

   This field has two possible values:

   ***IN* (for swaptions):** The swaption is *in-the-money.* This tells the cash flow engine to generate cash flows for the instrument as it normally would for the instrument.

   ***OU* (for swaptions):** The swaption is *out-of-the-money* or not exercised. This tells the cash flow engine to examine the strike rate against the yield curve and specified dates, all of which are entered on the Instrument Entry - Options page. If any rates from the yield curve exceed the strike rate for the dates indicated, then the cash flow engine generates cash flows for the instrument. Otherwise, the cash flow engine does not process the instrument.

   ***IN* (for callable bonds):** The bond is *in-the-money* or has not been called. This tells the cash flow engine to examine the strike rate against the yield curve and specified dates, all of which are entered on the Instrument Entry - Options page. If any rate from the yield curve is less than the strike rate, then the cash flow engine calls the instrument on the date used for the yield curve lookup. The cash flow engine does not generate cash flows for the instrument for any date after the call date. The cash flow engine generates all cash flows for the instrument for dates less than the call date but no further, and generates a final settlement payment for the bond on the call date.

   ***OU* (for callable bonds):** The bond is *out-of-the-money.* This tells the cash flow engine not to process the instrument.

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Note: When you create an instrument on the Instrument Entry component for each swap leg, the system automatically sets the value of the OPT_CD_VALUE field on the I_OPTION_R00 table to *OU* by default. When the swaption has been exercised, you must manually set the OPT_CD_VALUE field value to*IN.*
When you create an instrument on the Instrument Entry component for the bond leg, the system automatically sets the value of the OPT_CD_VALUE field on the I_OPTION_R00 table to *IN* by default. When the callable bond has been exercised, you must manually set the OPT_CD_VALUE field value to*OU.*

---

4. Select the type of option in the Exercise Type field.

   Values are:

European:	The option can be exercised on one date only.
Bermudan:	The option can be exercised on a series of discrete dates.
American:	The option can be exercised at any time between two dates.

5. Enter the rate at which the swap in a swaption contract is invoked or the rate at which a bond is called in the Strike Rate field.
6. Enter the first possible option exercise date in the Start Date field.
7. Enter the last possible option exercise date in the End Date field.

   If the exercise type is *European,* this date equals the start date.
8. Enter the index against the strike rate of the option is to be compared in the Index ID field.
9. Enter a number that determines how often an option is examined in the Reprice Freq (reprice frequency) field.

   If the exercise type of the option is *Bermudan,* this is the frequency of the discrete dates on which the strike rate of the option is compared to the rate from a curve.
10. Enter the unit of measure (UOM) for the option frequency in the Reprice UOM field.

Entering the Remaining Instrument Data

Use the remaining pages. These pages have basic setup, which is explained as follows:

- *Balances page*

  Enter the type of balance, the as of date, the balance amount and the accrued interest. Then enter the balance in base currency and the accrued interest. These two sets of balance and accrued interest amounts are different only if the balance amount is expressed in a transaction currency that is not the base currency.

- *CF Events page* (cash flow events)

  Enter an event code. Values are *DrawDown* (borrowing against a line of credit),*Payment,Margin Adj,*or*Prepayment.* Enter an event date and payment amount.

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- *Reprice Events page*

  Enter the start date for the reprice event, the variable rate or the interest rate (for a fixed rate instrument). If it is a variable rate instrument, enter the index ID to which the interest rate is tied, and the margin in basis points (adjustment to the index).

- *Demographics page*

  Enter the codes for standard industry, country or industry sector, and demographics. Specify the status and enter a demographic value to associate with the demographic code. The system uses this code in conjunction with constraints to more precisely control processing. Enter a demographic date and amount. Finish by entering a location code to represent an additional geographic or location attribute.

- *History page*

  Select the transaction date from the calendar (date on which the transaction occurred). Select the transaction code to describe the transaction event. Values are *Standard Payment, Standard Deposit, Withdrawal, Drawdown on Commitment, Renegotiation w/Blend & Extend, Renegotiation W/O Blend & Ext, Fixed Rate Renewal, Fixed Rate Add Loan, Fixed Rate Blend & Extend, Reset FTP Rate, Option Conversion, Cancelled Drawdown, Loan Prepayment, FTP Recalibrated Rate, ATM Transaction, Check Processed, Stop Payment Request, Statement Reprint, Balance Inquiry,* and*Statistical Measure.* Statistical measure can be used, for example, to indicate the number of ATM transactions. Enter the currency code. Enter the payment amount twice, expressed in the base currency equivalent, and in the transaction currency.

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Chapter 11

Creating Model Definitions

Understanding Model Definitions

Models enable you to specify at a very high level how you want to organize products or ledger accounts for purposes of analysis and performance management. You create model IDs in the EPM Warehouse. After creating the model IDs, you define the model for the FSI application specifying how the application assigns the model IDs to its definitions and processing rules.

Model definition is a onetime setup that specifies the product trees, balance sheet trees, or income statement trees defining the balances that you are processing, and their cash flow characteristics, such as accrual basis and term structure ID. On the Model Definition pages, you also indicate whether you want to net risk weighted capital allocations from balances for transfer pricing purposes. You specify the dimensions (product, channel, department, operating unit, or customer) by which you want to group the calculations when reconciling ledger balances with product detail balances.

Setting Up Model Definitions

This section discusses how to:

- Create model definitions.
- Define engine settings for model definitions.

Pages Used to Create Model Definitions

Page Name	*Definition Name*	*Navigation*	*Usage*
Model Definition	FI_CONFIG_TBL	Financial Services Industries, Models and Parameters Setup, Financial Services Models, Model Definition	Specify the product and account trees for this model ID, the accrual basis, and whether the behavioral model and risk-weighted capital results should be factored into the processing.
Engine Settings	FI_CONFIG_SEQ	Financial Services Industries, Models and Parameters Setup, Financial Services Models, Engine Settings	Specify any risk-weighted capital allocations that require transfer pricing and the dimensions that you want to use to group calculations when reconciling ledger balances with product detail balances.

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Model Definition Page

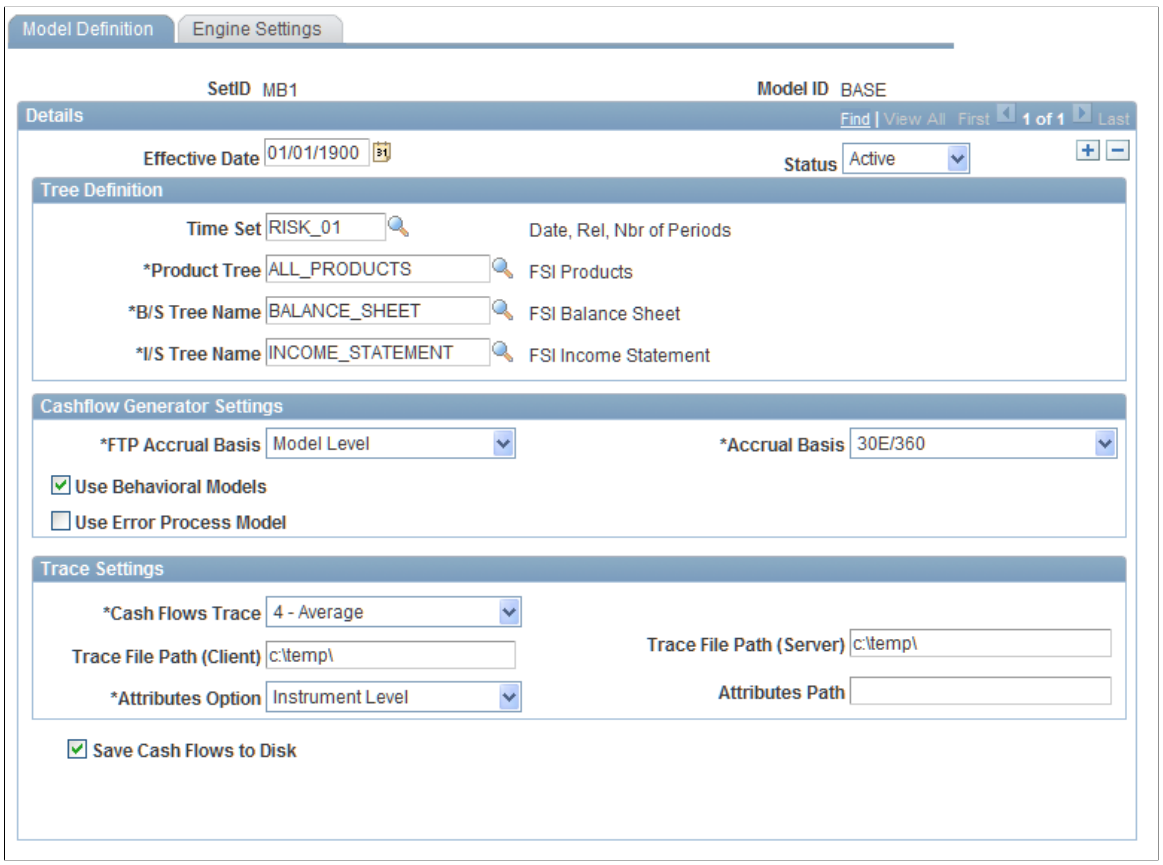
Use the Model Definition page (FI_CONFIG_TBL) to specify the product and account trees for this model ID, the accrual basis, and whether the behavioral model and risk-weighted capital results should be factored into the processing.

Navigation

Financial Services Industries, Models and Parameters Setup, Financial Services Models, Model Definition

Image: Model Definition Page

This example illustrates the fields and controls on the Model Definition Page. You can find definitions for the fields and controls later on this page.



To set up model ID definitions:

1. Set up tree definitions.

   a. Select a time set code to indicate the time buckets that help create the reprice or maturity buckets for stratified pooled data.

   b. Select a product, balance sheet, and income statement tree.

      These trees are used to process rules for products, the balance sheet, and the income statement (respectively) according to the tree levels that you define in the warehouse.

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2. Set up the cashflow characteristics in the Cashflow Generator Settings group box.

   a. Define the level of FTP accrual basis.

      Options are: *Model Level, Instrument Level,* or*Product Level.*

      Then define an accrual basis for FTP cashflows. Options are: *30/360, 30E/360, 30N/360, Actual/360, Actual/365,* and *Actual/Actual.*

   b. If you want to include estimated prepayments (from the behavioral model) in the cash flow calculations, select the Use Behavioral Models check box.

      This check box enables all behavioral models and the service fee model.

   c. Similarly, select the Use Error Process Model check box to use error process models.

3. In the Trace Settings group box, control the amount of cash flow detail information (if any) that is written to log files in theCash Flows Trace field.

   Valid values range from *0-No Trace* (for production use) to*8-Complete* (for debugging purposes) with increasing detail.

   Note: Specifying a Trace Settings field value of*8-Complete* could compromise performance capability significantly while processing cash flows.

   ---

4. Specify the path where the cash flow trace files is created.

   Do this for client or server paths. This is a required field to set up when you specify any option other than *No Trace* in theCash Flows Trace field. Otherwise, processing cannot commence.

5. In the Attributes Option field, set the pricing index type for the model.

   Pricing indexes drive the new interest rates generated by processes that use the Cash Flow engine, such as the Financial Performance Measures (FPM) engine. PeopleSoft Funds Transfer Pricing also makes extensive use of this functionality. The option that you select here determines whether the Cash Flow engine generates pricing indexes for pricing events on the product or instrument level. Depending on the selection, pricing indexes for pricing events are set up on the Financial Product Definition component or the Financial Instruments Entry component. Your selection applies to processing of both historic and forecast scenarios.

   Note: A pricing event is any time a pricing index is used to provide an interest rate to an instrument or product. Pricing events include pricing, repricing, teasers, and rate locks. These events are usually based on a pricing index.

   Options are:

   Instrument Level — Select to have the Cash Flow engine create pricing indexes for all pricing events from instrument data in the FI_INSTR_F00 table. Set up instrument data on the Financial Instrument Entry component.

   Product Level — Select to have the Cash Flow engine create pricing indexes for all pricing events from product data in the FI_

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PRODUCT_SEQ table. Set up product data on the Financial Product Definition component.

Attributes File

Select to have the Cash Flow engine create pricing indexes for all pricing events from the cash flow attributes configuration file *cfattributes.ini.* This file enables you to specify the field and transaction name, which is associated with a table, where the Cash Flow engine obtains the data to assign cash flow attributes their values.

6. If in the Attribute Options field you selected*Attributes Files,* specify in theAttributes Path field the location of cash flow attributes configuration file*cfattributes.ini.*

7. Select the Save Cash Flows To Disk check box to save cash flow information to disk.

   Processing functions only when running the Cash Flow engine.

Engine Settings Page

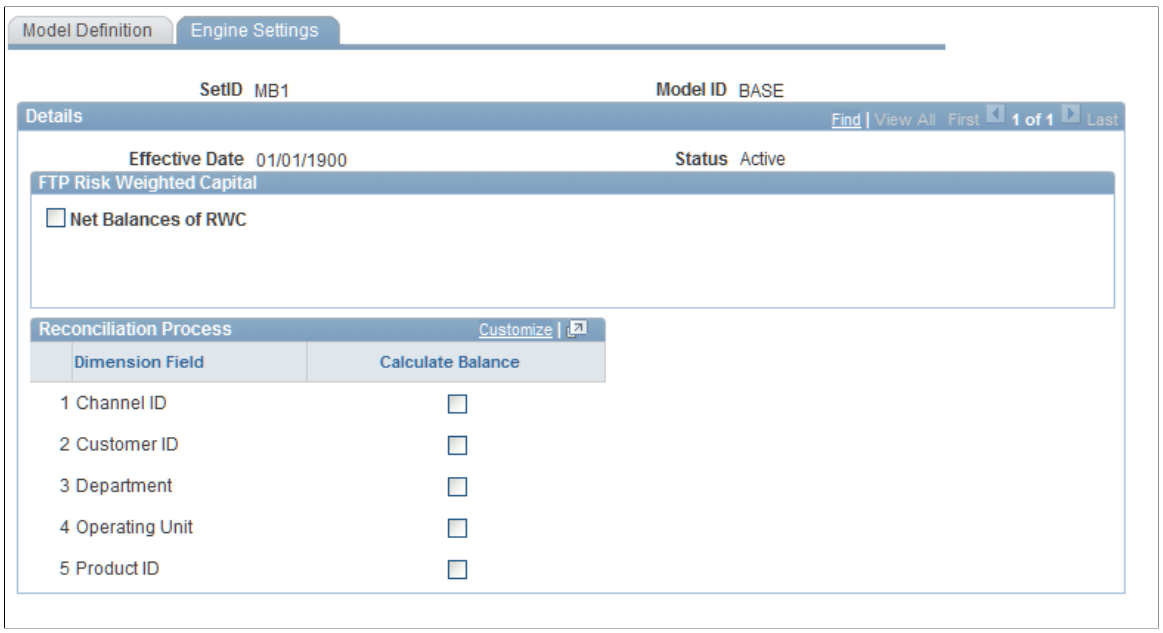
Use the Engine Settings page (FI_CONFIG_SEQ) to specify any risk-weighted capital allocations that require transfer pricing and the dimensions that you want to use to group calculations when reconciling ledger balances with product detail balances.

Navigation

Financial Services Industries, Models and Parameters Setup, Financial Services Models, Engine Settings

Image: Engine Settings Page

This example illustrates the fields and controls on the Engine Settings Page. You can find definitions for the fields and controls later on this page.



To specify engine settings for the model ID:

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1. The FTP Risk-Weighted Capital group box is used to give instructions to the PeopleSoft Funds Transfer Pricing (FTP) application on transfer pricing risk-weighted capital.

   Set up the fields in this group box:

   a. When the Net Balances of RWC field is selected, this check box tells the FTP processes (FTP_INST, FTP_ACCT, FTP_TRPS, and FTP_FPOOL) to net allocated capital from the balances that it is processing.

      It also activates the remaining fields in the group box.

   b. Select a Cost of Funds Table.

      This specifies that FTP calculates an FTP charge for the allocated capital amount, based on this cost of funds rate. The resulting cost of allocated capital is stored in a standard output table, with an FTP_SEQ_TYPE code of RWC.

   c. Indicate the point on the yield curve when calculating the cost of allocated capital rate in the Term of Capital field.

   d. Define to which PF (Performance) ledger account the funds transfer charge is posted in the Ledger Event Code field.

2. In the Reconciliation Process group box, indicate whether you want to group the calculations across dimensions when reconciling ledger balances with product detail balances.

   To do this, select the Calculate Balance check box for the appropriate dimensions:*Channel ID, Customer ID, Department, Operating Unit,* or*Product ID.* The FI_RECON and FI_RCN_BS engines use these dimensions during reconciliation.

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Chapter 12

Defining Balance Sheet and Income Statement Rules

Defining Balance Sheet Rules

This section provides an overview of balance sheet rules and discusses how to:

- Set up ledger accounts detail.
- Assign products and positions detail.

Pages Used to Define Balance Sheet Rules

Page Name	*Definition Name*	*Navigation*	*Usage*
Ledger Accounts	FI_BSR_DEFN	Financial Services Industries, Financial Rules, Balance Sheet Rules, Ledger Accounts	Define the relationship between the PF Ledger account and the product detail (instrument) or treasury position account. Also assign FSI application rules to the PF Ledger account or treasury position account. In addition, use this page for reconciliation purposes.
Products/Positions	FI_BSR_PROD_SEQ	Financial Services Industries, Financial Rules, Balance Sheet Rules, Products/ Positions	Assign an FSI application rule to a position, and define the relationship between PF Ledger accounts and their corresponding product detail or treasury positions.
Balance Sheet Rules - Notes	FI_BSR_DESCRLONG	Financial Services Industries, Financial Rules, Balance Sheet Rules, Notes	Enter notes.

Understanding Balance Sheet Rules

Balance sheet rules define the hierarchy for the reconciliation of products and position balances to their respective ledger accounts. For that reason, it is important to take into account the reconciliation process when assigning balance sheet rules.

The balance sheet rules are also used to assign the FSI application rules to PF ledger accounts or to treasury position accounts. (You assign rules for products on the Financial Calculation Rules page).

The Balance Sheet Rules pages have two primary functions:

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- They identify the relationships between balance sheet accounts in the PF Ledger and the product detail or treasury positions.

  The pages are set up so that you can create an ID for the appropriate level on the ledger account tree, and then identify product details or treasury positions that are associated with that set of ledger accounts. Through the use of constraints, you can define as simple or complex a set of mappings between ledger accounts and products or positions as needed. For each ID you can elect to have the reconciliation process compare the ledger account balances with the associated product or position balances, and optionally post the difference to a ledger (suspense) account.

- They enable you to assign an analytic application rule to a PF Ledger account or treasury position.

  You can also use constraints to narrow the range of ledger accounts, or positions to which the analytic application rule (for PeopleSoft Risk-Weighted Capital, or PeopleSoft Funds Transfer Pricing) should be applied.

This section discusses:

- Balance types.
- Balance sheet rules processing sequence.

Balance Types

The PF Ledger table (PF_LEDGER_F00) stores current, end-of-period balances. The ADB Ledger table (PF_LED_ADB_F00) stores average daily balances. The financial analytic applications enable you to choose either PF Ledger or ADB Ledger type balances for processing. The balance sheet rules for FTP, RWC, and reconciliation processing can be set up to use either of these ledger types to establish a basis for account balance selection.

PF Ledger is the master table that contains the master list of account information, and it is the sole basis for selection of rows for processing. The ADB Ledger is treated as a subordinate table to the PF Ledger table. When a business rule is defined so that it processes balances from the ADB Ledger, the processing logic is:

1. The subset of accounts selected for processing are from the PF Ledger table.
2. For each row that is selected in step one, rows with the same key field values are selected from the ADB Ledger.
3. The balance amounts that are used are from the ADB Ledger for the rows that are identified in step two.

Regardless of which data source is used, PF Ledger or ADB Ledger, once a balance sheet rule processes an account row, it does not process it again. The reason for this is to prevent any possibility of double-counting a balance that may be included in more than one basis ID. Likewise, a balance sheet rule can process a ledger row as either an ADB or a PF Ledger type of balance, but never both.

Balance Sheet Rules Processing Sequence

The applications process balance sheet rules in a sequence based on the hierarchical structure of the tree for the product, position, or account tree; the processing sequence is from the most specific nodes in the tree to the more general nodes. This processing sequence must be taken into account when assigning balance sheet rules.

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For example, assume that you have a high level ledger node representing all cash accounts, and child nodes underneath for cash on hand, personal checks, and travelers checks. Also assume that you want to assign slightly different rules for the cash on hand and the checks, due to different operational risks.

You have two options for setting up balance sheet rules, and both achieve the same result:

- You could set up two rules, one rule for the parent node, cash, and a specific rule for the cash on hand child node.
- You could set up three specific rules, one for each of the child nodes: cash on hand, travelers checks, and personal checks.

If, from a performance measurement standpoint, you consider all checks the same, you may choose the first option, which enables you to group all three of the cash nodes together, but still process the cash on hand balances differently than the check balances.

Ledger Accounts Page

Use the Ledger Accounts page (FI_BSR_DEFN) to define the relationship between the PF Ledger account and the product detail (instrument) or treasury position account.

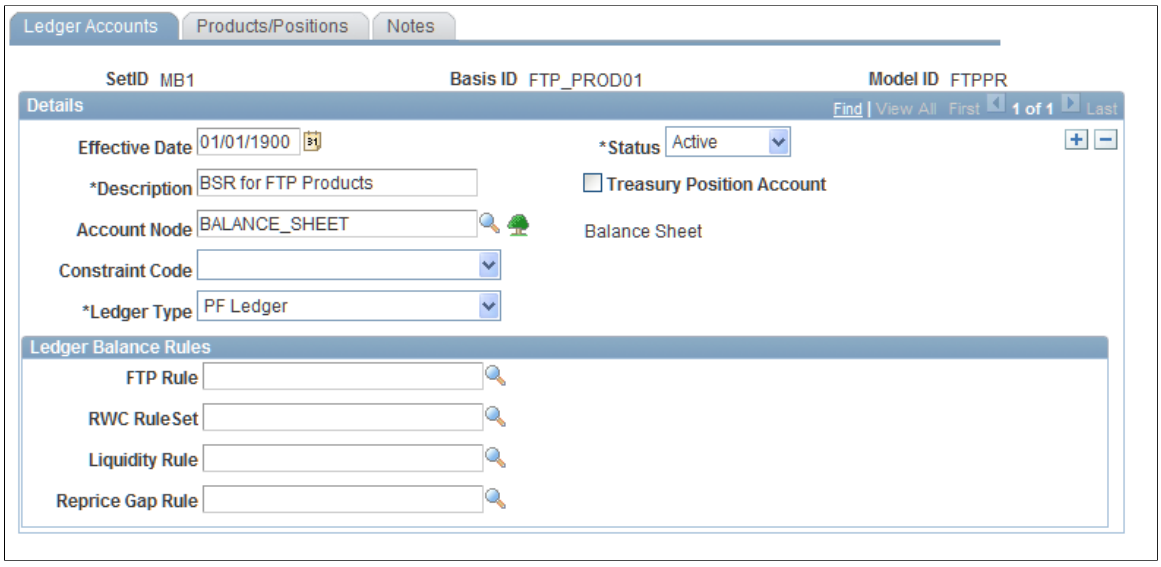
Also assign FSI application rules to the PF Ledger account or treasury position account. In addition, use this page for reconciliation purposes.

Navigation

Financial Services Industries, Financial Rules, Balance Sheet Rules, Ledger Accounts

Image: Ledger Accounts page

This example illustrates the fields and controls on the Ledger Accounts page. You can find definitions for the fields and controls later on this page.



To set up ledger accounts detail for balance sheet rules:

1. Enter a description of the ledger account for which you want to establish rules.
2. Select the Treasury Position Account check box to define a rule for treasury position balance.

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This check box determines some of the fields that appear on the Products/Positions page.

3. Specify in the Account Node field the PF Ledger tree node that contains the PF Ledger accounts that are related to this rule.

   Click the Tree button to view the tree for this account node.

4. Select a constraint code and ledger type (either *PF Ledger* or*ADB Ledger*).

5. Set up the ledger balance rules for the FSI applications.

   Select the FTP rule code, RWC ruleset, liquidity, and reprice gap rules that you want to apply to the ledger balance during processing.

Warning! Ensure that all PF Ledger accounts are accounted for in the balance sheet rules by assigning every account node in the PF Ledger to a balance sheet rule.

Products/Positions Page

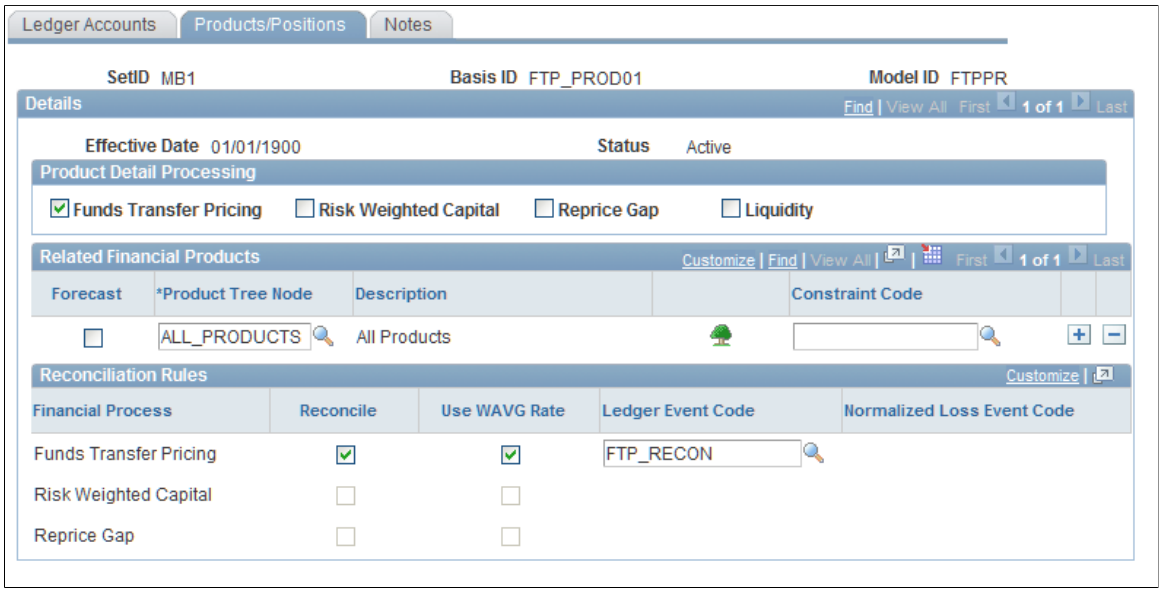
Use the Products/Positions page (FI_BSR_PROD_SEQ) to assign an FSI application rule to a position, and define the relationship between PF Ledger accounts and their corresponding product detail or treasury positions.

Navigation

Financial Services Industries, Financial Rules, Balance Sheet Rules, Products/Positions

Image: Products/Positions page

This example illustrates the fields and controls on the Products/Positions page. You can find definitions for the fields and controls later on this page.



Note: The Treasury Position Account check box on the previous page affects the fields that are activated on this page. All possible fields are detailed in the following text.

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To assign products and positions detail to balance sheet rules:

1. Indicate if you want to apply this basis ID to the processing for PeopleSoft Funds Transfer Pricing and Risk-Weighted Capital, Reprice Gap, and Liquidity.

2. Both PeopleSoft Funds Transfer Pricing and PeopleSoft Risk-Weighted Capital applications evaluate the check boxes in the Product Detail Processing section.

   If you select the product detail flags, the Funds Transfer Pricing and Risk-Weighted Capital engines process at a product detail-level (pools, instrument balances, or positions) rather than at a ledger-level. RWC_ACCT and FTP_ACCT engines do not perform ledge-level processing for the accounts that are associated with this basis ID. In addition, selecting the flag activates the Reconcile check box in theReconciliation Rules group box below. A cleared product detail flag indicates that you want to perform ledger-level processing only.

3. Set up the related positions for treasury or financial products (depending on whether or not you select the Treasury Position check box on the previous page).

   For treasury positions, select the position source ID, constraint code, funds transfer pricing, and risk-weighted capital rules that you want to assign to this basis ID. For financial products, select the Forecast check box if you want to process forecasted balances and select a product tree node and constraint code to filter the instruments in that node. (Click theTree button to view the product tree hierarchy).

4. The Reconciliation Rules group box applies only to application-level reconciliation.

   To perform application-level reconciliation, set up the reconciliation rules for the balance sheet rule.

   See Performing Application-Level Reconciliation.

Note: You can define a one-to-many relationship between the ledger account (specified on the Ledger Accounts page) and multiple product nodes, or multiple treasury position IDs on this page, by using the constraint codes.

Defining Income Statement Rules

This section provides an overview of income statement rules and discusses how to set up income statement rules.

Pages Used to Set Up Income Statement Rules

Page Name	*Definition Name*	*Navigation*	*Usage*
Income Statement Rules - Definition	FI_BISR_DEFN	Financial Services Industries, Financial Rules, Income Statement Rules, Definition	Assign a risk weighted capital ruleset to an income statement account.
Income Statement Rules - Notes	FI_BISR_NOTES	Financial Services Industries, Financial Rules, Income Statement Rules, Notes	Enter information relating to the income statement rule.

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Understanding Income Statement Rules

For risk calculations that are based on income or expense levels, assign risk-weighted capital rules to income statement accounts. For example, you may want to allocate capital for legal or operational risk based on the income that is generated by an activity or product line. If so, you can use the income statement rules to set up rules that enable the appropriate amounts to be processed during reconciliation.

Note: Income statement rules are used by the PeopleSoft Risk-Weighted Capital application only.

Income Statement Rules - Definition Page

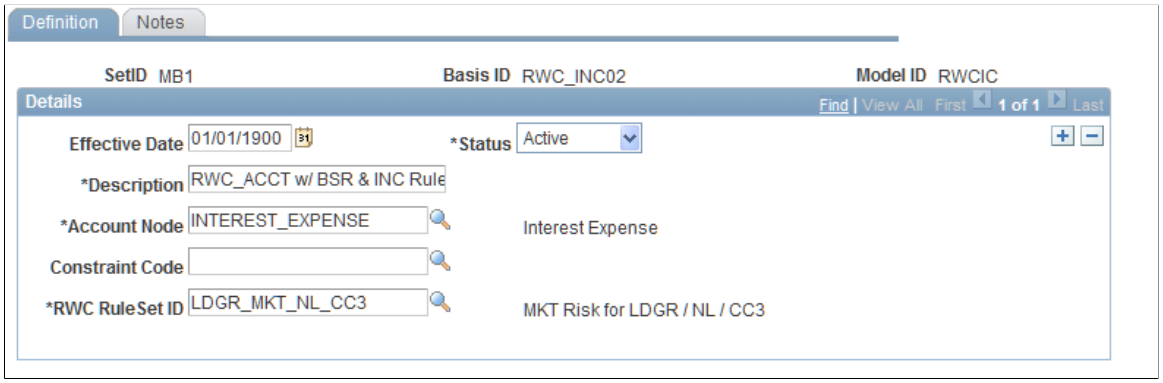
Use the Income Statement Rules - Definition page (FI_BISR_DEFN) to assign a risk weighted capital ruleset to an income statement account.

Navigation

Financial Services Industries, Financial Rules, Income Statement Rules, Definition

Image: Income Statement Rules - Definition page

This example illustrates the fields and controls on the Income Statement Rules - Definition page. You can find definitions for the fields and controls later on this page.



To set up income statement rule definitions:

1. Specify in the Account Node field the PF Ledger tree node that contains the PF Ledger accounts that are related to this rule.
2. Select a constraint code to limit the range of balances that are included in this income statement rule.
3. Select the RWC ruleset ID to define this income statement rule.

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Chapter 13

Setting Up and Performing Reconciliation

Setting Up Reconciliation Rules

This section discusses how to set up reconciliation rules.

The three types of reconciliation are:

- Instrument level.
- Balance sheet.
- Application level.

Pages Used Set Up Reconciliation

Page Name	*Definition Name*	*Navigation*	*Usage*
Reconciliation Rules	FI_RECON_DEFN	Financial Services Industries, Financial Rules, Reconciliation Rules	Reconcile instrument or account data to the performance ledger using dimensions from source data.
Reconciliation Rules - Notes	FI_RECON_DESCRLONG	Financial Services Industries, Financial Rules, Reconciliation Rules, Notes	Enter text about the reconciliation rule.

Reconciliation Rules Page

Use the Reconciliation Rules page (FI_RECON_DEFN) to reconcile instrument or account data to the performance ledger using dimensions from source data.

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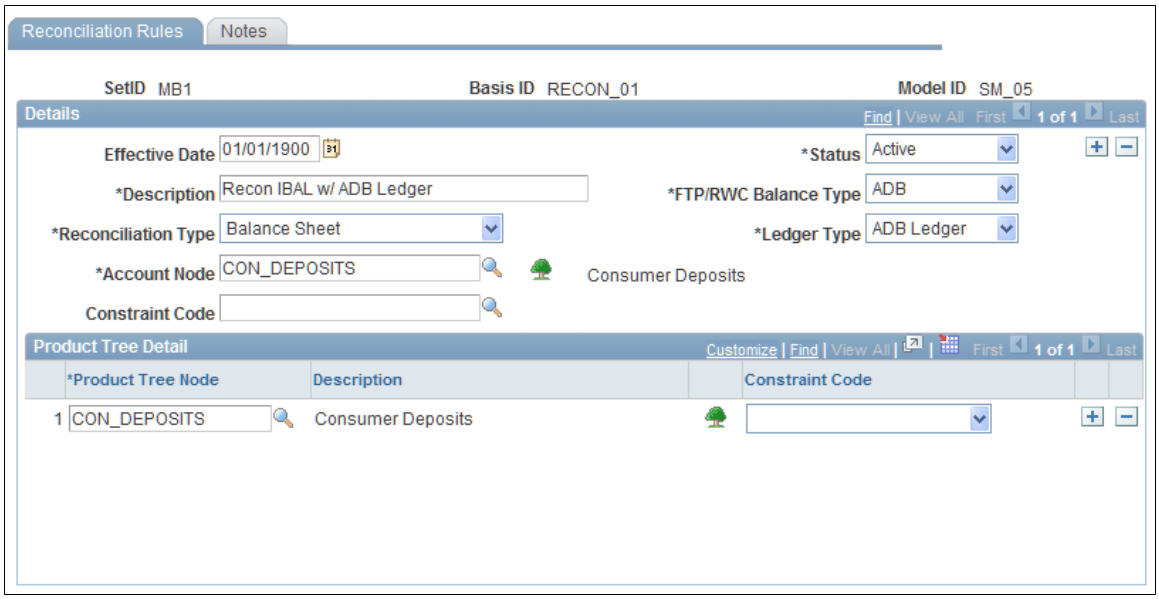
Navigation

Financial Services Industries, Financial Rules, Reconciliation Rules

Image: Reconciliation Rules page

This example illustrates the fields and controls on the Reconciliation Rules page. You can find definitions for the fields and controls later on this page.



To set up reconciliation rules:

1. Specify the instrument tables and ledger tables that you want to reconcile.

   To do so, set up the balance type code, reconciliation type code, ledger type, and account node. The account node that you select specifies the PF Ledger (Performance Ledger) tree node that contains the PF Ledger accounts that are related to this rule. (Click the Tree button to view the tree for this account node).

2. (Optional) Select an uppermost constraint code to filter the accounts that are assigned to the basis ID.

3. (Optional) To filter the instruments that fall under a specific product node, select in the Product Tree Detail group box a product tree node and corresponding constraint code.

Performing Instrument-Level Reconciliation

The Instrument-Level Reconciliation application engine (FI_RECON) enables you to reconcile ledger balances with the equivalent tables at the instrument level by using specific reconciliation rules. Instrument-level reconciliation makes it possible for you to quickly analyze data, generate ad hoc reports, and update ledger information as frequently as business needs dictate. Instrument-level reconciliation facilitates comparison between any one of the summary-level balance tables that are listed on the left side of the following table with any one of the instrument-level balance tables listed on the right side:

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Summary-Level Table	***Instrument-Level Table***
PF_LED_ADB_F00 The ADB Ledger table stores average daily balances at the summary ledger-account level.	FI_IINC_R00 Stores income statement transactions and balances at the instrument detail level. Choose balances from this table for reconciliation by selecting *Income Statement* from the available options that are in theReconciliation Type field (Reconciliation Rules page).
PF_LGR_RCN_F00 Stores any summary ledger balances that you may want to reconcile against the instrument balance tables.	FI_IBAL_R00 Stores balance sheet statement transactions and balances at the instrument detail level. The application engine obtains the dimensions from the parent, FI_INSTR_F00. All transactions matching a specific instrument ID receive the same dimensions. Choose balances from this table for reconciliation by selecting *Balance Sheet* from the available options in theReconciliation Type field (Reconciliation Rules page).
PF_LEDGER_F00 Stores current, end-of-period balances at the summary ledger-account level.	FI_IBALANCE_R00 Stores balance sheet statement transactions and balances at the instrument detail level. Each transaction balance has its own dimension and account information. Choose balances from this table for reconciliation by selecting *Balance Sheet with Dimensions* from the available options in the Reconciliation Type field (Reconciliation Rules page).
	FI_ILDGR_F00 Stores multidimensional instrument balances (instrument balances by dimension), using the precise dimension proportions that are in the source data. Choose balances from this table for reconciliation by selecting *Reconciled Ledger* from the available options in theReconciliation Type field (Reconciliation Rules page).

Using the Reconciliation Rules page, instrument-level reconciliation summarizes balances first by account, then by the selected table dimensions that are on the Model Definition - Engine Settings page, and puts the results to a specified table for further analysis or processing.

The Instrument-Level Reconciliation process can be run as needed to reconcile instrument-level balances to their respective ledger balances based on specific reconciliation rules that you define.

Performing Balance Sheet Reconciliation

The Balance Sheet Reconciliation application engine (FI_RCN_BS) facilitates comparisons between the sum of the ledger-level totals (from PF_LEDGER_F00 or PF_ADB_LDGR_F00) with the sum of the instrument-level balances (from FI_IBAL_R00 or FI_POOLBAL_R00). The balances are calculated

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according to each balance sheet rule, for PF Ledger or ADB Ledger accounts, instruments, and positions. The process is based solely on the balance sheet rules that are defined on the Balance Sheet Rules page.

Run and review the reconciliation differences prior to running the financial services industry application engines. The Balance Sheet Reconciliation application engine evaluates every active balance sheet rule during processing. Significant differences that are posted in the reconciliation table alert you to errors or omissions in the rule setup, or they may alert you to invalid mappings between the PF Ledger (Performance Ledger) account balance and the instrument or position balances for a given rule. Differences may also be caused by errors or omissions during the extract, transform, and load (ETL) process.

You can run the Balance Sheet Reconciliation process to verify the balance sheet rules. During this process, the system:

- Calculates the PF Ledger account balances, the instrument, and the treasury position balances relating to each rule.
- Compares the PF Ledger account balances to their related instrument balances and the PF Ledger account balances to their related treasury position balances.
- Posts both balances to the FI_RCN_BS_F00 table and the FI_RCN_DIM_F00 table.

Dimensions are factored into balance sheet reconciliation when you set up the Model Definition - Engine Settings page.

Note: Balance sheet reconciliation does not insert difference records into FTP, RWC or Liquidity Reprice Gap output tables, unlike application-specific reconciliation. Output is placed onto special output tables for review and analysis. This program can run repeatedly.

Performing Application-Level Reconciliation

The Application-Level Reconciliation process ensures that all account balance amounts are processed and that reconciliation is performed by the applications based on information set in the balance sheet rules.

You must create specific balance sheet rules, as defined on the Balance Sheet Rules component, for the applications to perform reconciliation.

On the Ledger Accounts page of the component, select the Account Node.

On the Products/Positions page of the component, select the instrument node in the Product Tree Node field.

Select the Product Detail Processing option for the appropriate application engine.

In the Reconciliation Rules group box, select theReconcile option to reconcile PF Ledger account balances to the product or position balances that are processed by the appropriate application engine based on the specified basis ID.

Select the Use WAVG option for the Funds Transfer Pricing application to use a weighted average rate. For Risk-Weighted Capital, the system always selects this option and makes it unavailable for edit because Risk-Weighted Capital always uses a weighted average rate.

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See Defining Balance Sheet Rules.

For Funds Transfer Pricing and Risk-Weighted Capital, select a Ledger Event Code to which the reconciliation results are posted. For Risk-Weighted Capital, you can also select aNormalized Loss Event Code to which the results for normalized loss are posted.

This configuration defines normal instrument level processing and special treatment for the reconciled balance amounts only.

Because the reconciliation process uses the balances from the output of the instrument processing, there are two things to keep in mind:

- You use this rule for instrument processing.

  The applications recognize this rule for processing by looking at the Product Detail Processing flag that you set on the Products/Positions page.

- You run instrument processing before running ledger processing so that the instrument balances are ready for reconciliation.

The reconciliation process nets the instrument balances from the account balances and applies the processing rules that you select in the Ledger Balance Rules group box on the Ledger Accounts page to the difference.

The reconciliation process posts the results to the regular application output tables.

See *PeopleSoft Funds Transfer Pricing Product Documentation*

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Chapter 14

Defining Financial Calculation Rules

Understanding Financial Calculation Rules

Use the Financial Calculation Rules pages to assign rules to the templates that you create with the Financial Products pages. The Financial Calculation Rules pages enable you to view how these products are treated in the other FSI applications. You also specify the conventional financial measures that the system calculates for these products.

This section discusses:

- Pricing rules for rate sensitivity.
- Conventional financial measures calculations.

Pricing Rules for Rate Sensitivity

For rate sensitivity (behavioral) models to accurately assess delta rates, you need to define the pricing rules that the model uses. For example, you can define a pricing index as a single rate from a particular yield curve such as the seven-year Chicago Mercantile Trade US Treasury; or you can use more complex indices based on more than one rate from more than one yield curve to describe how you reprice products in response to changes in interest rates.

You can also assign alternative pricing rules to subsets of the financial product based upon criteria that you define. For example, for certificates of deposit (CD) above 100,000 USD in Arizona, you might want to assign an additional 50 points to the rate that is derived from the product pricing index. However, for CDs that are below 100,000 USD in New York, you might want to use a different pricing index. You have flexibility in defining the pricing structure of financial products, according to regions, balances, products, and so on.

Note: The number of pricing models that you assign to a product is unlimited; however, the number of criteria that you define determines the level to which you can summarize the instruments when you use the Stratification Engine feature.

Conventional Financial Measures Calculations

The Financial Calculator application engine calculates a number of conventional financial measures for a pool of instruments. The financial measures that are supported are:

- *Net Present Value:* NPV is the fair value that should be paid for the financial instrument. A common way of determining this value is to obtain the expected value of the series of discounted cash flows that are projected from current date to maturity.

  for single path analysis, where *t* equals time.

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for multi-path analysis, where I equals 1 through N number of paths, and where t equals time. DF is discount factor, and CF is cash flow. For example, CF_{ti} is the cash flow at time *t* for path*I* and similarly for $DF_{ti.}$

Other equations exist for determining NPV.

- *Effective Duration:* The measure of the sensitivity of NPV to parallel shifts of rates that takes into account changes of projected cash flows.

- *Effective Convexity:* The measure of sensitivity of duration with respect to parallel shift rate changes as a second order effect on NPV.

  where NPV^- is the NPV in the case of decreasing rate paths. NPV^+ is the NPV in the case of the increasing rate paths. Delta R is the size of the parallel shift of the interest rates.

- *Cash Flow Duration:* The weighted average time of projected cash flows weighted by the discounted cash flows.

  where DF_t is discount factor for time*t* and CF_t is cash flows at time*t.* NPV is net present value of cash flows.

- *Modified Duration:* A modification of cash flow duration, taking into account the internal rate of return.

  Modified cash flow duration = [Duration / (1 + IRR / Frequency)], where IRR equals the internal rate of return, and frequency is the frequency of the payments per year. For example, for semiannual payments, the value is 2.

- *Average Life:* The time necessary for principal to be reduced by one half of its current value. You should not select average life for products that do not have an initial balance such as credit cards, savings accounts, and lines of credit.

- *Dollar Duration:* A measure of the change in the dollar price of an instrument.

- *Internal Rate of Return:* (IRR) represents the interest rate at which NPV is book plus accrued income.

Note: The financial calculations above are not relevant for instruments that are not amortizing and have no maturity term.

Setting Up Financial Calculation Rules

This section discusses how to:

- Describe financial calculation rules.
- Establish general processing information.
- Assign behavioral models.
- Assign pricing rules to behavioral models.
- Assign stratification rules.

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- Specify portfolio forecast definitions.
- Assign funds transfer pricing (FTP) rules.
- Assign break funding rules.
- Assign risk-weighted capital (RWC) rulesets.
- Assign repricing gap and liquidity rules.
- Set up balance segmentation rules.

Note: Rules for ledger and treasury position accounts are assigned on the Balance Sheet Rules and Income Statement Rules pages.

Pages Used to Set Up Financial Calculation Rules

Page Name	*Definition Name*	*Navigation*	*Usage*
Financial Calculation Rules - Definition	FI_FCALC_DEFN	Financial Services Industries, Financial Rules, Financial Calculation Rules, Definition	Describe the financial calculation rule.
Financial Calculation Rules - Financial Calculation	FI_FCALC_FC_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, Financial Calculation	Indicate the financial measures that are calculated for the product.
Financial Calculation Rules - Behavioral Models	FI_FCALC_PP_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, Behavioral Models	Assign the rule to a behavioral model.
Financial Calculation Rules - Pricing	FI_FCALC_PR_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, Pricing	Assign pricing rules to the behavioral model.
Financial Calculation Rules - Stratification	FI_FCALC_SE_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, Stratification	Assign stratification rules to products and exceptions to stratification rules for product subsets.
Financial Calculation Rules - Portfolio Forecast	FI_FCALC_FA_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, Portfolio Forecast	Specify a portfolio forecast definition for each product. You need to define a forecast definition with prior to using this page. Also define the forecast FTP settings for the calculation of FTP rates based on spreads or indices.
Financial Calculation Rules - FTP Rules	FI_FCALC_FT_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, FTP Rules	Assign FTP rules to a product through Financial Calculation Rules.

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Page Name	*Definition Name*	*Navigation*	*Usage*
Financial Calculation Rules - FTP BF Rules	FI_FCALC_BF_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, FTP BF Rules	Assign break funding rules to a product through financial calculation rules.
Financial Calculation Rules - RWC Rules	FI_FCALC_RW_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, RWC Rules	Assign RWC rulesets to a product through Financial Calculation Rules.
Financial Calculation Rules - Reprice & Liquidity	FI_FCALC_AL_SEQ	Financial Services Industries, Financial Rules, Financial Calculation Rules, Reprice & Liquidity	Assign reprice gap and liquidity rules to a product through financial calculation rules.
Balance Segmentation	BALANCE_SEGMENTS	Financial Services Industries, Models and Parameters, Balance Segmentation	Allocate balances for various accounts according to your specifications.
Balance Segmentation-Notes	BAL_SEG_NOTES_PNL	Financial Services Industries, Models and Parameters, Balance Segmentation, Notes	Enter any notes about setup.

Financial Calculation Rules - Definition Page

Use the Financial Calculation Rules - Definition page (FI_FCALC_DEFN) to describe the financial calculation rule.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, Definition

Use this page to set up a description for the rule. Proceed to the Financial Calculation page for specific rule setup.

Financial Calculation Rules - Financial Calculation Page

Use the Financial Calculation Rules - Financial Calculation page (FI_FCALC_FC_SEQ) to indicate the financial measures that are calculated for the product.

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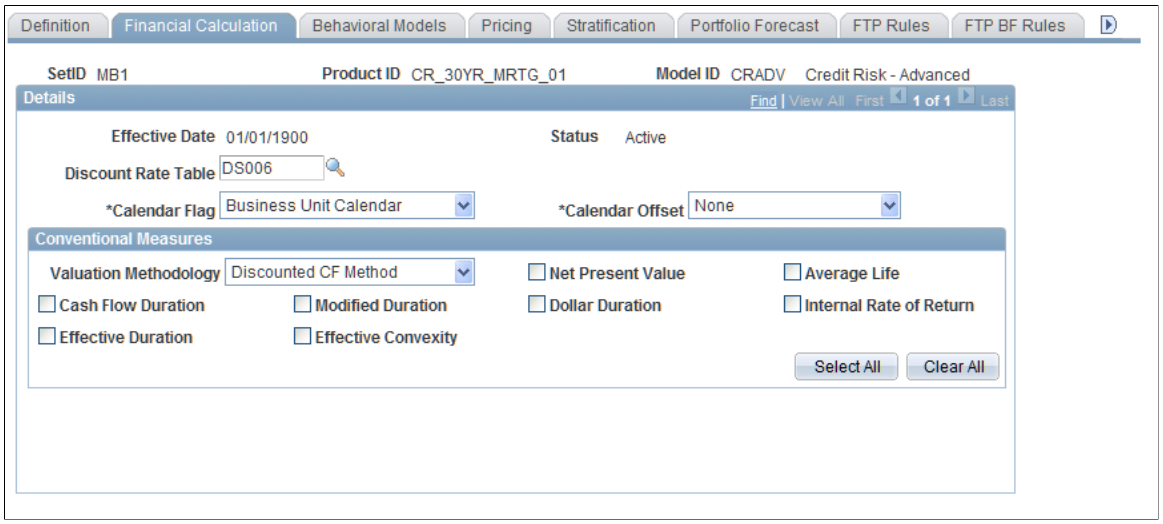
Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, Financial Calculation

Image: Financial Calculation Rules - Financial Calculation page

This example illustrates the fields and controls on the Financial Calculation Rules - Financial Calculation page. You can find definitions for the fields and controls later on this page.



To further specify how the system processes financial products:

1. Specify the discount rate yield curve with the Discount Rate Table field to discount cash flows that are used to calculate the conventional measures.

2. Determine which calendar the system uses with the Calendar Flag field.

   Select either the*Business Unit Calendar* or the*Currency Calendar.*Use the currency calendar for cash flow calculations; it differs from the domestic operations calendar. For example, use it for financial products whose rate and maturity dates are derived from indices or markets in another country.

3. Select the calendar offset to indicate the number of business days between interest dates (adjusted for weekends and holidays) that are used to calculate interest payments. Options are:

End Month:	Use the end of the current month.
Following End Month:	Use the end of the next month.
Following:	Use the following business day.
Modified Following:	Use the following day if it's a business day; otherwise switch to preceding.
Modified Preceding:	Use the preceding day if it's a business day; otherwise switch to following.
Preceding:	Use the preceding business day.

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None: Use the day in question regardless of business calendar concerns. The actual number of days between interest dates is used to calculate interest payments.

4. Establish the conventional measures that this rule uses:

   a. Set up the valuation methodology.

      Use *Discounted CF* for conventional cash flows,*Indeterminate Deposit* for nonmaturing deposit products (such as demand deposits and money market accounts).

   b. Select one or more of the following financial measures: Cash Flow Duration, Effective Duration, Modified Duration, Effective Convexity, Net Present Value, Dollar Duration, Optional Adjusted Spread, Average Life, Internal Rate of Return, andOption Cost.

   c. Click theSelect All button to select all of them, or click theClear All button to clear all selections.

5. If you select Optional Adjusted Spread orOption Cost, define the benchmark instrument information.

   Select if the product pool is a market-issued financial product (select the Benchmark Instrument field) and define the market issue code. If the product pool is not a market-issued financial product, selectCalculated NPV to calculate the NPV for this product by using the discount rate table. This is the likely choice when you calculate values for products that do not have a corresponding market trading.

Financial Calculation Rules - Behavioral Models Page

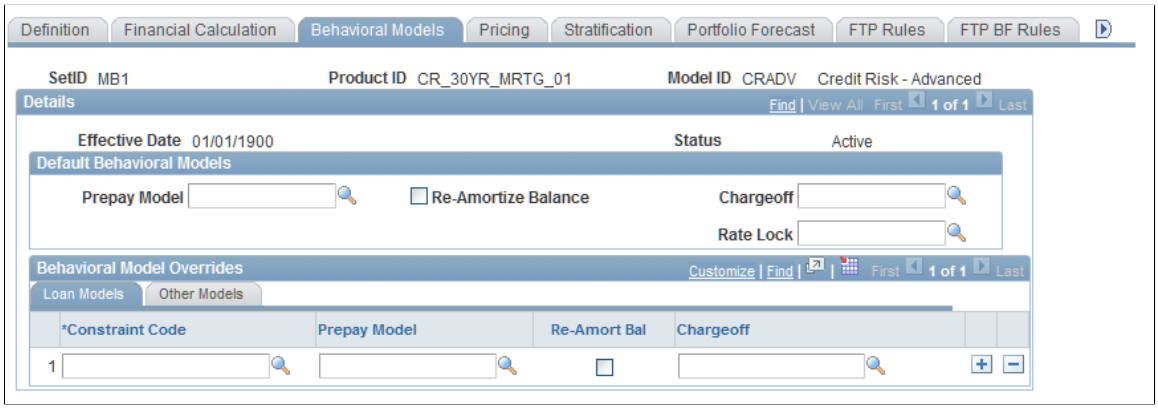
Use the Financial Calculation Rules - Behavioral Models page (FI_FCALC_PP_SEQ) to assign the rule to a behavioral model.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, Behavioral Models

Image: Financial Calculation Rules - Behavioral Models page

This example illustrates the fields and controls on the Financial Calculation Rules - Behavioral Models page. You can find definitions for the fields and controls later on this page.



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Options for default behavioral models are limited to those that are relevant to the product type that you define. For example, the Prepay Model field is active if this a loan, but not active if this is a deposit account.

To assign a financial calculation rule to a behavioral model:

1. Specify a particular model in the active field.
2. If the prepay model applies, then you can specify that the Cash Flow Generator reamortizes the loan balances after every payment period.

   If the deposit growth model applies, the Cash Flow Generator can recalculate the instrument count of a pool after every payment period.
3. Specify behavioral model overrides for Constraint Code, the particular model, and whether to reamortize the loan balances or recalculate the instrument count of a pool after every payment period.

Financial Calculation Rules - Pricing Page

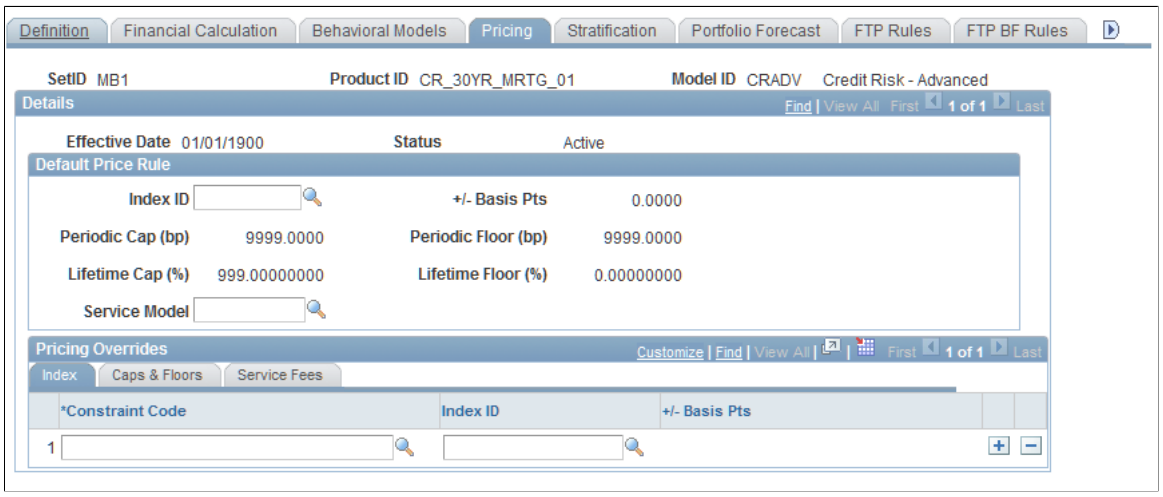
Use the Financial Calculation Rules - Pricing page (FI_FCALC_PR_SEQ) to assign pricing rules to the behavioral model.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, Pricing

Image: Financial Calculation Rules - Pricing page

This example illustrates the fields and controls on the Financial Calculation Rules - Pricing page. You can find definitions for the fields and controls later on this page.



Use this page to set the pricing index that is used to construct benchmark interest rates for behavioral models. The Cash Flow application engine uses the data that you enter on this page to determine whether behavior models must be invoked. The selection applies to both historic and forecast scenarios.

To assign pricing rules to the behavioral model:

1. Set up the default price rule.

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In the Index ID field, select the pricing index to use in the construction of the interest rate. Then, enter in the+/- Basis Pts field a spread for pricing index in basis points) to further refine the interest rate that is constructed from the pricing index. The spread can be a positive or negative value depending on the relationship of the product to the pricing index.

2. If it applies, enter a Periodic Cap value and aPeriod Floor value in basis points.

   These values constrain the basis point shift that is assigned in the previous field. The periodic rate change can never be higher than the periodic cap, and, conversely, it can never be lower than the periodic floor.

3. If it applies, enter a percentage value in the Lifetime Cap field.

   This value serves as the absolute ceiling limit for the pricing structure of the product class. For example, ARMS have lifetime caps that must be assigned to those products according to the original pricing period agreement. The same logic applies to lifetime floor, but in this case, the value serves as the absolute floor limit for the pricing structure.

4. You may assign a predefined Service Model ID. For example, some products may have a one-time origination fee or recurring service fees that are associated with them. Recurring fees are applied by the Cash Flow Generator in accordance with the product's payment frequency.

5. Specify pricing overrides by using the Index, Cap & Floors, and Service Fees tabs.

   This enables you to specify subsets of instruments by using the Constraint Code, for which you can assign different pricing models. The fields that are displayed in this group box correspond to the constraint code. As with pricing indices, you can use constraints to override service fees.

Financial Calculation Rules - Stratification Page

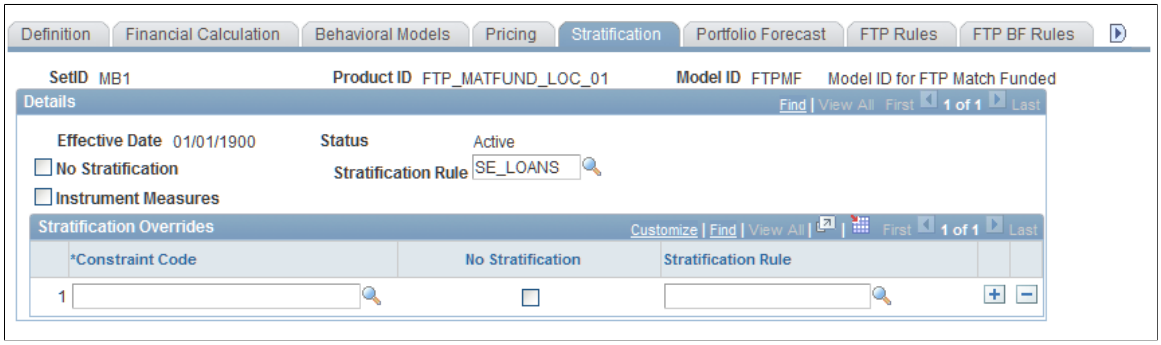
Use the Financial Calculation Rules - Stratification page (FI_FCALC_SE_SEQ) to assign stratification rules to products and exceptions to stratification rules for product subsets.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, Stratification

Image: Financial Calculation Rules - Stratification page

This example illustrates the fields and controls on the Financial Calculation Rules - Stratification page. You can find definitions for the fields and controls later on this page.



To assign stratification rules to products and exceptions to stratification rules for product subsets:

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1. Set up general stratification information.

   Select the No Stratification check box if you do not want the stratification rule to be applied to the product ID (in that case every instrument is processed separately by the Cash Flow Generator.

   Depending on the number of instruments that a bank has, this can be a very time-consuming process). If you apply the rule, then specify the stratification rule in the Stratification Rule field.

2. To populate the Instrument Financial Calculations table (FI_ICALC_R00), select the Instrument Measures check box (in this case, the pooled calculations, such as NPV and durations, are recalculated at an individual instrument level).

   Clear the check box to store the measures at the pool level only (for example, stored in the FI_POOLCALC_R00). The advantage of storing the measures at the pool level is that it can result in significantly less data being populated in the warehouse and faster processing times. The disadvantage of not storing the measures at the instrument level is that if you want to query or report on measures at the instrument level, it requires a minimum of a three-table join.

   A financial product might have a subset that would not be stratified by a desired stratification rule that is defined for the product class. The exception could be assigned in the Stratification Overrides group box. For example, financial institutions use vanilla swaps frequently to limit their interest rate risk exposure. There may be a custom swap on the books that the institution wants to track closely. Rather than having the custom swap agreement lumped into the vanilla swap pool by the default stratification rule, you can establish an exception to this rule for the desired swap product according to the unique attributes of the product.

3. In the Stratification Overrides group box you may specify subsets of instruments (by using the constraint code) for which you may assign different stratification models.

   The fields that appear in this group box correspond to the fields that are active in the Default Stratification Rule group box. Select from the drop-down list box the overriding stratification rule that you want to assign to the specified constraint code defined in the EPM Warehouse.

Financial Calculation Rules - Portfolio Forecast Page

Use the Financial Calculation Rules - Portfolio Forecast page (FI_FCALC_FA_SEQ) to specify a portfolio forecast definition for each product.

You need to define a forecast definition with prior to using this page. Also define the forecast FTP settings for the calculation of FTP rates based on spreads or indices.

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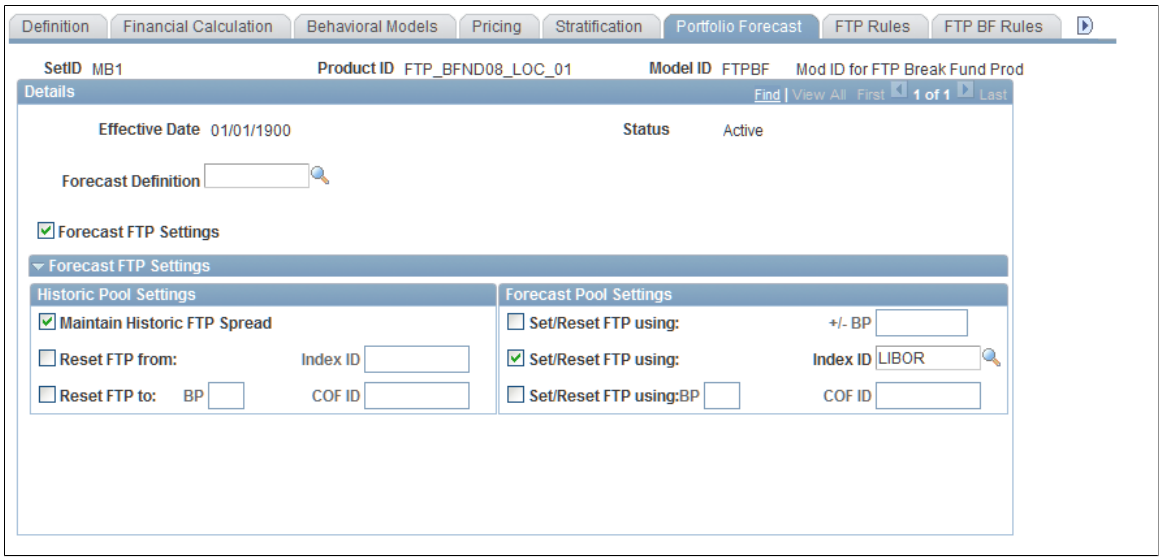
Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, Portfolio Forecast

Image: Financial Calculation Rules - Portfolio Forecast page

This example illustrates the fields and controls on the Financial Calculation Rules - Portfolio Forecast page. You can find definitions for the fields and controls later on this page.



To specify a portfolio forecast definition for each product:

1. Select a predefined forecast definition to apply to this product and the resulting instrument pool if you want to generate cash flows for this product based on forecasted product origination amounts.

2. Select the Forecast FTP check box if you want to also forecast FTP rates when you run the Portfolio Forecast application engine (FI_FCSTFTP).

   The system displays the Forecast FTP Settings group box, providing you with multiple ways to set FTP rates on the historic or current book and on new forecast balances. Historic pool settings and forecast pool settings function independently from one another. When you run the Portfolio Forecast application engine, it sets the FTP rate based on the rate calculation settings that you specify. To forecast FTP rates based on the more detailed historic FTP setup information, clear this check box and run the FTP_FRATE engine separately after you run the Portfolio Forecast engine.

3. In the Historic FTP Settings group box, select from the following FTP rate calculation settings:

   a. Select the Maintain Historic FTP Spread check box to have the Portfolio Forecast application engine compare the FTP rate for historic pools and the current interest rate, calculate the spread, and set the forecasted FTP rate based upon maintaining that spread over the currency cost of funds index for future periods.

   b. Select the Reset FTP From check box to have the Portfolio Forecast application engine reset the FTP rate for all historic pools based on the currency cost of funds index that you specify in the correspondingIndex field.

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c. Select the Reset FTP To check box to specify additional basis points in the correspondingBP field, and enter the index rate that you want the Portfolio Forecast engine to use in calculating the FTP rate in the correspondingto Index field.

4. In the Forecast Pool Settings group box, select from the following FTP rate calculation settings:

   a. Select the Set/Reset FTP Using check box to specify the basis point spread by which you want to set or reset the FTP rate, and enter the basis point spread in the correspondingBP Spread field.

      The engine sets the FTP rate equal to the forecasted interest rate plus the spread.

   b. Select the Set/Reset Rate Using check box to have the Portfolio Forecast application engine set or reset the FTP rate for all forecast pools based on the currency cost of funds index that you specify in the corresponding Index field.

   c. Select the Set/Reset FTP Using check box to specify additional basis points in the correspondingBP field, and enter the exact index rate that you want the Portfolio Forecast application engine to use in calculating the FTP rate in the correspondingto Index field.

Financial Calculation Rules - FTP Rules Page

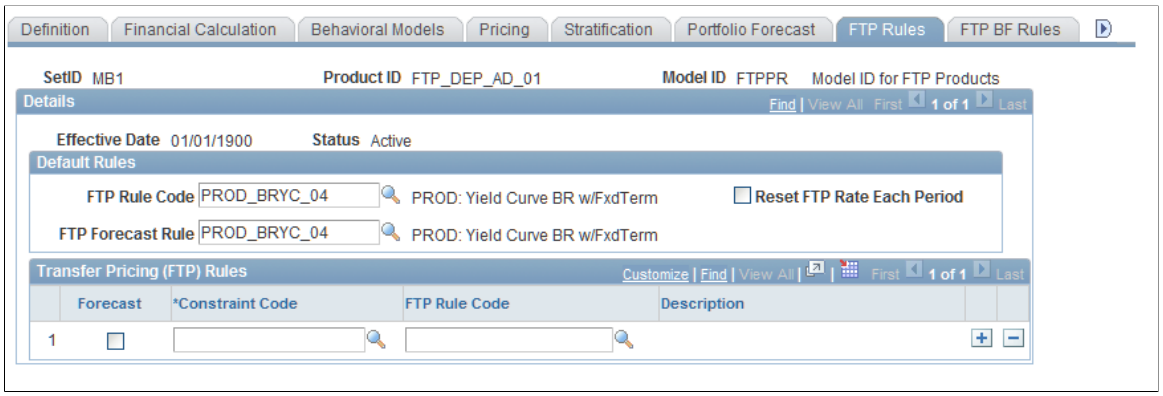
Use the Financial Calculation Rules - FTP Rules page (FI_FCALC_FT_SEQ) to assign FTP rules to a product through Financial Calculation Rules.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, FTP Rules

Image: Financial Calculation Rules - FTP Rules page

This example illustrates the fields and controls on the Financial Calculation Rules - FTP Rules page. You can find definitions for the fields and controls later on this page.



To assign FTP rules to a product through a financial calculation rule:

1. Set up default rules to assign the default funds transfer pricing rules for historical and forecasted balances of this product.

   The FTP Rule Code establishes an FTP rule for this product ID andFTP Forecast Rule specifies the product's forecasted balance.

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2. If you have a product that reprices or has variable interest rates, you may want to select Reset FTP Rate each Period check box to recalculate the FTP rate each period.

3. Specify subset or overriding values in the Transfer Pricing (FTP) Rules group box.

   You can assign FTP rules that differ from the default rules for products that fall within specified constraint codes. Select Forecast if you are setting alternate rules for a forecast balance. Assign a constraint code to specify subsets of balances under this product ID. Then assign a rule code that applies to balances under this constraint code.

Financial Calculation Rules - FTP BF Rules Page

Use the Financial Calculation Rules - FTP BF Rules page (FI_FCALC_BF_SEQ) to assign break funding rules to a product through financial calculation rules.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, FTP BF Rules

To assign break funding rules to a product through a financial calculation rule:

1. Select a Break Funding Rule to apply to this product.

2. Specify subsets of this rule by assigning a constraint code and additional break funding rules to this product ID.

Financial Calculation Rules - RWC Rules Page

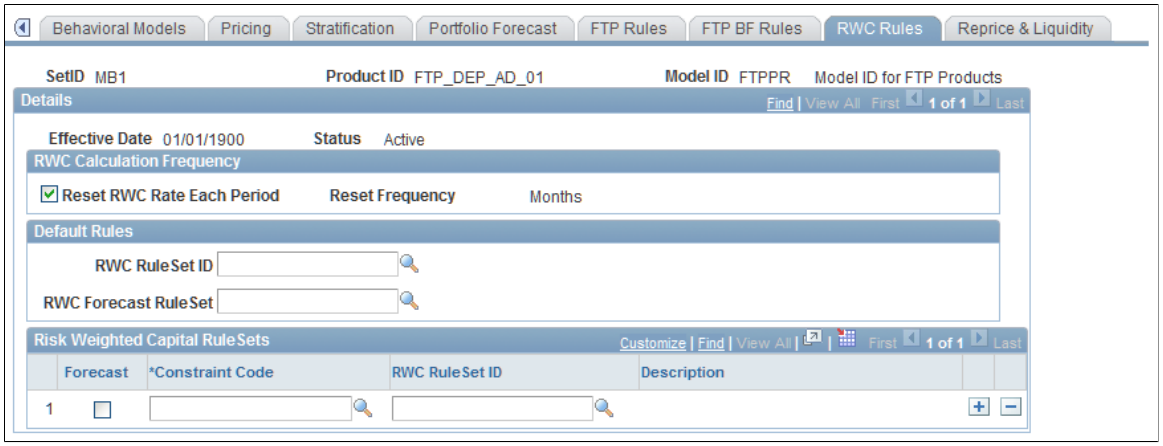
Use the Financial Calculation Rules - RWC Rules page (FI_FCALC_RW_SEQ) to assign RWC rulesets to a product through Financial Calculation Rules.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, RWC Rules

Image: Financial Calculation Rules - RWC Rules page

This example illustrates the fields and controls on the Financial Calculation Rules - RWC Rules page. You can find definitions for the fields and controls later on this page.



To assign RWC rulesets to a product through a financial calculation rule:

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1. Select Reset RWC Rate Each Period to recalculate the RWC and normalized loss rates for each processing period for all instruments for this product.

   Enter the Reset Frequency to recalculate risk weights and normalized loss weights for any instruments that exceed the recalculation frequency period.

2. Define the default RWC rulesets for this product.

   Select an RWC ruleset ID and an RWC forecasted ruleset for this product ID.

3. Add exceptions to the default rules in the Risk-Weighted Capital RuleSets grid.

   Assign RWC rules that compliment the default rules established above for products that occur within specified constraint codes. Select the Forecast option to set alternate RWC rules for a forecasted pool balance. Specify a constraint code and an RWC ruleset ID to apply to balances for the constraint code.

Financial Calculation Rules - Reprice & Liquidity Page

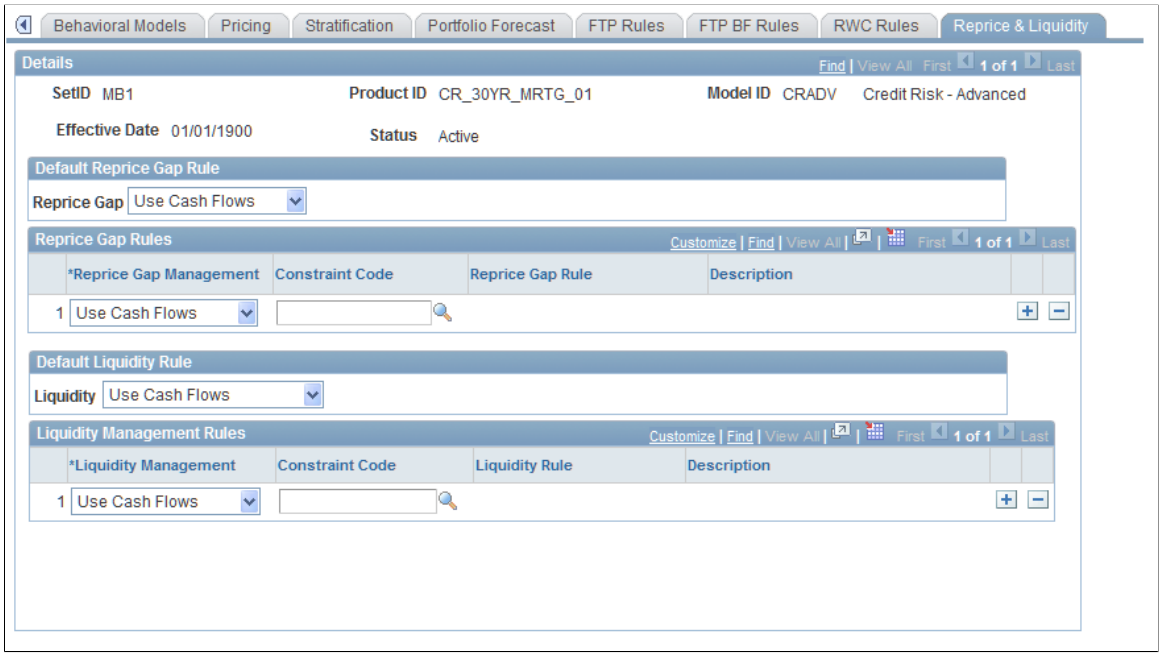
Use the Financial Calculation Rules - Reprice & Liquidity page (FI_FCALC_AL_SEQ) to assign reprice gap and liquidity rules to a product through financial calculation rules.

Navigation

Financial Services Industries, Financial Rules, Financial Calculation Rules, Reprice & Liquidity

Image: Financial Calculation Rules - Reprice & Liquidity page

This example illustrates the fields and controls on the Financial Calculation Rules - Reprice & Liquidity page. You can find definitions for the fields and controls later on this page.



To assign reprice gap and liquidity rules to a product through a financial calculation rule:

1. For both reprice gap rules and liquidity rules, you need to determine if the system manages the cash flows for this product by using the defined contractual cash flow (field values: *Use Cash Flows*), or

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if you want the system to manage the cash flow for this product differently than the stated product contractual cash flow (field values:*Override Cash Flows*).

For example, you might want to classify six-month time deposits with balances of 5,000 USD or less as a product subject to early withdrawal.

Specify one of these management options for the default reprice gap rule, and then do the same for the *Default Liquidity Rule.*

2. Specify subsets of instruments for the reprice gap and liquidity default rules.

   Select how the system manages the cash flows, apply a constraint code, and apply a Reprice Gap Rule or Liquidity Rule, if necessary (these fields appear if you select *Override Cash Flows*).

Balance Segmentation Page

Use the Balance Segmentation page (BALANCE_SEGMENTS) to allocate balances for various accounts according to your specifications.

Navigation

Financial Services Industries, Models and Parameters, Balance Segmentation

Your organization may have a policy regarding the allocation of balances according to a schedule. This schedule might allocate 60 percent of total balance of demand deposit accounts (DDAs) in the one month reprice bucket, followed by 20 percent in the eighteen month bucket and finally 20 percent in the thirty-six month bucket. The Balance Segmentation page enables you to specify both percent of balance and dollar amounts for accounts that have widely varying balances. You may find it more effective to assign a recurring balance amount in an assigned reprice bucket rather than a percentage of balance.

Another useful feature of balance segmentation is the reprice assignment of off-balance sheet (OBS) products. Often, the product definitions of OBS products suffice for an aggregation rule, but there may be instances where you must assign reprice information that contradicts the contracts for hedge accounting treatment. For example, the contracts may be June 2003 contracts identified to assets repricing or maturing in September 2003. You can override the June flow to September to adhere to the hedge identification. Similarly, you can attach PF Ledger accounts to balance segmentation rules as well.

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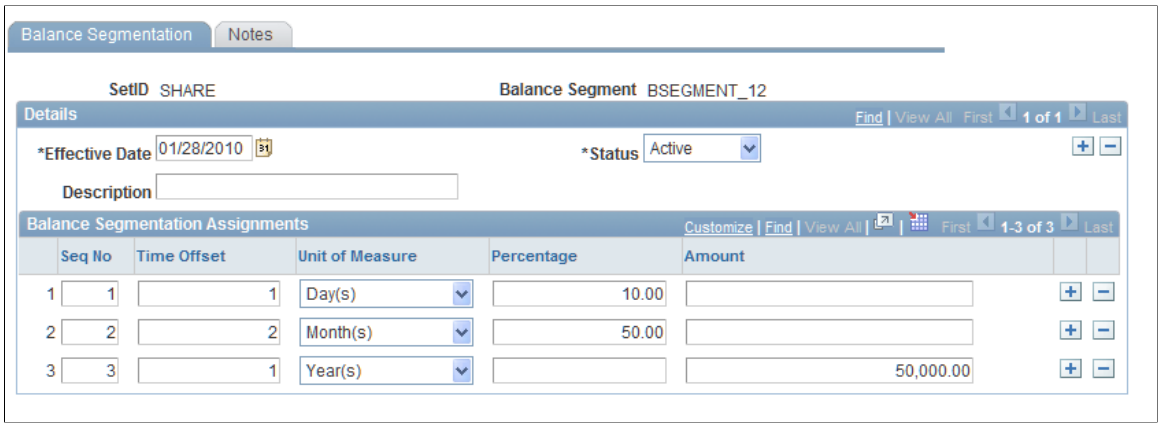
Once you set up the balance segmentation rules, you can assign them to the Financial Calculator and Balance Sheet Rules pages.

Image: Balance Segmentation page

This example illustrates the fields and controls on the Balance Segmentation page. You can find definitions for the fields and controls later on this page.



Establish a balance segmentation rule for cash flows. Create an assignment that specifies when the balance segmentation is to be effective. The Time Offset andUnit of Measure fields determine the length of time for this balance segmentation rule. ThePercentage andCurrency fields enable you to choose how you want the balance of the product to be pooled. If you choose percentage, enter a percentage of the product's pool balance. If you choose currency, enter a fixed amount.

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Chapter 15

Creating User-Defined Functions

Understanding User-Defined Functions

You can define functions through a common interface for use throughout many of the analytic applications. The options that are available to you when you define functions are based on predefined modules that are provided with the system.

To define a function:

- Configure the module by associating it with a DataMap code and defining the output type.
- Define the module parameters.
- Create the function based on the defined module.

Using Functions

This section discusses how to:

- Configure modules for user functions.
- Define module parameters.
- Create user functions.
- Use built-in functions.

Pages Used to Define Functions

Page Name	*Definition Name*	*Navigation*	*Usage*
Module Configuration	PF_FN_ENG_PNL	EPM Foundation, EPM Setup, Common Definitions, System Objects, Module Configuration	Review configuration options or make changes.
Module Parameters	PF_FN_ENG_SEQ_PNL	EPM Foundation, EPM Setup, Common Definitions, System Objects, Module Configuration, Module Parameters	View detailed information about the parameters for a module before you define a user function that is associated with a module.

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Page Name	*Definition Name*	*Navigation*	*Usage*
User Functions	PF_FN_DEFN_PNL	• EPM Foundation, Business Metadata, Constraint and Expressions, User Functions • Financial Services Industries, Risk-Weighted Capital Rules, Risk-Weighted Capital Rules, Function Definition, User Functions	Define functions that you can use with multiple analytic applications.
Built In Function	PF_FN_BIF_PNL	EPM Foundation, EPM Setup, Common Definitions, System Objects, Built In Function	View predefined functions that are delivered with the system.

Module Configuration Page

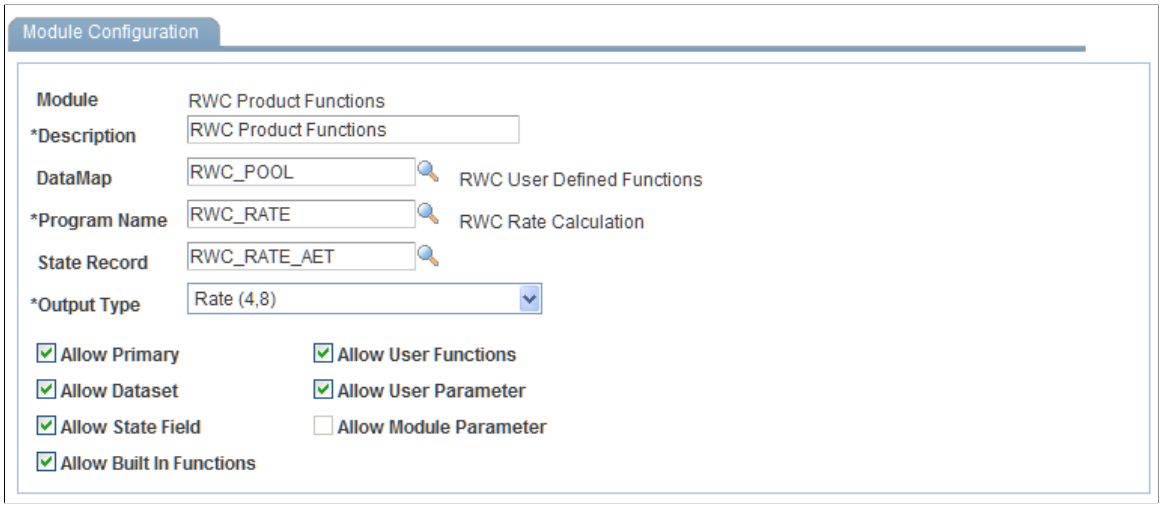
Use the Module Configuration page (PF_FN_ENG_PNL) to review configuration options or make changes.

Navigation

EPM Foundation, EPM Setup, Common Definitions, System Objects, Module Configuration

Image: Module Configuration page

This example illustrates the fields and controls on the Module Configuration page. You can find definitions for the fields and controls later on this page.



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Note: You should typically use the Module Configuration page only to verify information. You should not add or modify modules unless you have a thorough understanding of the system and the database tables that are affected. The only exception to this guideline concerns the Output Type field. This page displays pertinent module information that you may want to review before you define user formulas based on a specific module.
The DataMap code on the module page serves as the default DataMap displayed on the User Functions page. You can modify the DataMap on the User Functions page.

On the Module Configuration page, the DataMap Code designates the DataMap from which those who are defining user formulas are able to select. In the Program Name field, select the application engine that uses this module for its processing. If theAllow State Field check box is selected, the fields on the state record that is designated here are available to user formulas that are associated with this module. Output types define the output for user formulas that designate this module. You can change the output type. For example, if the output type is rate, and you want the result of a formula to be an amount, select*Amount* from the drop-down list box. The options are*Amount, Basis Points, Date, Integer, Rate,* and*String.* The*Allow* check boxes designate what types of data elements are allowed in user formulas that are associated with the module. For example, theAllow State Field check box, specifies that users defining formulas are able to use state fields in formulas that are associated with this module. The specific state record is designated in the top portion of this page. TheAllow Built In Functions andAllow User Functions check boxes designate functions that are provided with the system and functions that are defined through the User Functions page, respectively. TheAllow User Parameters andAllow Module Parameters check boxes are mutually exclusive. Module parameters are those that are defined on the Module Parameters page (which is automatically displayed if you selectAllow Module Parameters). User parameters are those that can be defined through the User Functions page by clicking the Input Parameters button at the top of the page (to the left of the Output Type field).

Module Parameters Page

Use the Module Parameters page (PF_FN_ENG_SEQ_PNL) to view detailed information about the parameters for a module before you define a user function that is associated with a module.

Navigation

EPM Foundation, EPM Setup, Common Definitions, System Objects, Module Configuration, Module Parameters

Use the Module Parameters page to verify information only. Do not add parameters.

If the Allow Module Parameters check box is selected on the Module Configuration page, the parameters that you define on this page are available for user-defined formulas that use the selected module.

User Functions Page

Use the User Functions page (PF_FN_DEFN_PNL) to define functions that you can use with multiple analytic applications.

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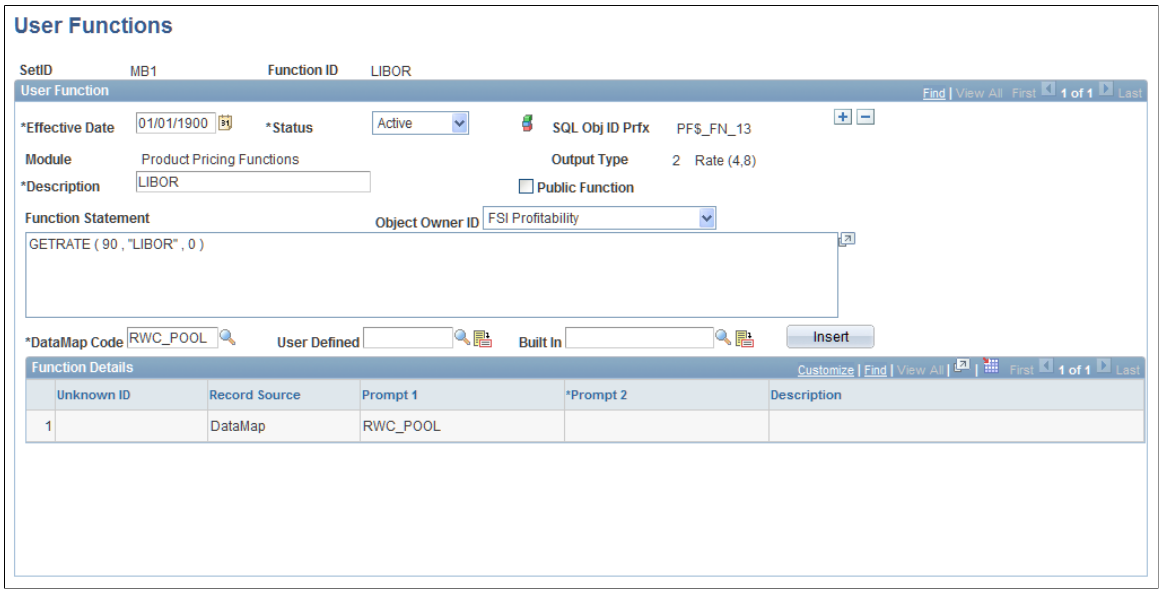
Navigation

- EPM Foundation, Business Metadata, Constraint and Expressions, User Functions
- Financial Services Industries, Risk-Weighted Capital Rules, Risk-Weighted Capital Rules, Function Definition, User Functions

Image: User Functions page

This example illustrates the fields and controls on the User Functions page. You can find definitions for the fields and controls later on this page.



To define user functions:

1. Enter an effective date and select a status.
2. The module that you select determines which data elements are available to this function.
3. To make this function available to all modules, select the Public Function check box.

   Functions can call only other public user functions that use the same module. The check box is set by default to clear, which indicates a private function. This enables the function to use DataMaps (primary), DataSets, and state record fields. You can choose to make the function public, but public functions are not allowed to use DataMaps, DataSets, or state record fields.

   Note: After a function is made public, you cannot change it to private.

4. Click the Insert button to insert a DataMap Code, User Defined, or Built In function into the grid.

   The Output Type field on the User Functions page displays the input parameters that you specify.

5. After defining a parameter, you can use that parameter in the function if the Allow User Parameters check box is selected on the Module page for the module that is associated with this function.

   Note: You should not change module definitions.

6. As you build the function, the function text appears in the Function box.

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You can type directly in the Function box.

You can create parameters for the function and if the system does not recognize the parameter, the grid is populated with every token or unknown ID that the system does not recognize.

After you populate the grid, you select a datatype or record source for that ID.

The page is dynamic and the prompts vary according to your selection here.

The User Defined andBuilt In prompt look up public user defined functions and all built-in functions that exist in the system. After looking up the function ID, you can click the button to the right of the prompt to be taken to an informational page in the case of built-in functions. If you click the button for user defined it will transfer you modally to the user-defined function specified. After choosing either a built-in or user defined function, clickInsert to append the function at the end of the text in theFunction Statement box.

The function you insert defaults the parameters for each defined parameter in the function chosen.

Record Source

Select from the following options:

DataMap,DataSet,Parameter, and*State.*

When you select the *DataMap* option, you can specify a DataMap code and DataMap column from which to retrieve data.

The DataMap code is determined by the module that you select, because DataMaps are associated with modules; however, you can select any appropriate DataMap code. After you select a DataMap code, the system does not allow you to change it. Select the appropriate DataMap column from the list and click the Insert button to place the selection in the text area of the page. When a DataMap is used in a function, the application engine program that calls the function evaluates the function for every row in the DataMap. For example, if you use a DataMap of 17 PRODUCT_IDs, the application engine program calling the function gets 17 results—one result for each PRODUCT_ID.

Note: For PeopleSoft Risk-Weighted Capital, if you are stratifying, then you must choose a DataMap based on the FI_POOLINST_F00 table. If you are not stratifying, then choose a DataMap based on the FI_INSTR_F00 table.

When you select the *DataSet,* you can select a DataSet and an affiliated DataSet column. The DataSet column is determined by the constraint that is specified when the DataSet is defined. This is because DataSet columns are specified when defining constraints. Select the appropriate DataSet column from the list and click theInsert button to place the selection in the Function area of the page. The Function Evaluator feature pulls in the entire DataSet to operate on. If a DataSet is created and comes to 100 rows, the Function Evaluator stores all 100 rows. Then, when a built-in function operates on the DataSet, it operates on the stored data. For example, Count(MyDataSet.MyColumn)

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returns the number of rows in that DataSet. DataSets can be used only within a built-in function; and if the built-in function takes more than one DataSet (GETNUMERICDATA, GETCHARDATA, GETDATEDATA?), the columns that are selected must be from the same DataSet.

When you select the *Parameters,* you can select either a parameter that you define by clicking the Parameter button near the top of the page, or a module parameter (one that is defined at the module level). The module that you select at the top of the page determines which module parameters are available to use. Select the appropriate parameter from the list and click theInsert button to place the selection in the Function area of the page. You do not set the values for module parameters. They are passed in based on data that is already in the system. Values for user-defined parameters are set through the originating module. For example, the parameter values for PeopleSoft Risk-Weighted Capital are set on a page through the Risk Function Rules, Functions page by clicking the Parameters button and specifying field values.

When you select State, you can select a field from the displayed state record. The module that is specified at the top of the page determines the state record. Select the appropriate field from the list and click theInsert button to place the selection in the Function area of the page.

Warning! The sum function works only with DataSets. Do not use it with a primary (DataMap) data element because it may return incorrect results.

Note: You cannot use the State within a public function.

Insert

After you select a data source, click to insert the data source into the Function text area. The system inserts the element at the position that is designated by the work area, pushing everything else back.

Note: If you create an invalid function, the system displays an error message. However, the system still saves the function to preserve your work. Keep in mind that unless the system allows you to save the function without error, the function does not work.

Warning! The Built In Function page should be used to view the predefined functions only.

Using Built-In Functions

The following tables list the predefined functions that you can use when building custom functions. The following functions are reproduced under license from NAG, Inc. For detailed descriptions of the following functions, please consult NAG documentation.

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NAG Functions

Function	*Use*
Mean (sample-col, wght-col)	Return the mean.
Std dev (sample-col, wght-col)	Standard deviation.
Std dev w	Standard deviation using weights.
Coeff of skewness (sample-col, wght-col)	Coefficient of skewness.
Coeff of skewness w.	Coefficient of skewness using weights.
Coeff of kurtosis (sample-col, wght-col)	Coefficient of kurtosis.
Coeff of kurtosis w	Coefficient of kurtosis using weights.
Lower hinge (input-col)	Lower hinge.
Upper hinge (input-col)	Upper hinge.
Median (input-col)	Median.
Binomial dist lt (n, p, k)	Binomial distribution, lower tail probability.
Binomial dist ut (n, p, k)	Binomial distribution, upper tail probability.
Binomial dist pt (n, p, k)	Binomial distribution, point probability.
poisson dist lt (rlamda, k)	Poisson distribution, lower tail probability.
Poisson dist ut (rlamda, k)	Poisson distribution, upper tail probability.
Poisson dist pt (rlamda, k)	Poisson distribution, point probability.
Hypergeom dist lt (n, l, m, k)	Hypergeometric distribution, lower tail probability.
Hypergeom dist ut (n, l, m, k)	Hypergeometric distribution, upper tail probability.
Hypergeom dist pt (n, l, m, k)	Hypergeometric distribution, point tail probability.
Deviates normal dist (p)	Deviate associated with given lower tail probability.
Rank scores sbr (input-col, rank)	Return element with this rank.
Rank scores sbe (input-col, elem)	Return rank of this element.
Normal scores sbr (input-col, rank).	Return element with this rank.
Normal scores sbe (input-col, elem)	Return rank of this element.

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Function	*Use*
Prob normal lt	Standard distribution, lower tail probability.
Prob normal ttc	Standard distribution, two tail confidence interval probability.
Prob normal tts	Standard distribution, two tail significance level probability.
Prob normal ut	Standard distribution, upper tail probability.
Random beta n	Random beta, no repeat, meaning that the pseudo-random numbers generated from this function do not repeat.
Random beta r	The pseudo-random numbers that are output can repeat.
Rand cont uni abn	Random continuous uniform, taken over interval [a, b], no repeating.
Rand cont uni abr	Random continuous uniform, taken over interval [a, b], with repeating output.
Rand cont uni n	Random continuous uniform, no repeating output.
Rand cont uni r	Random continuous uniform, with repeating output.
Rand dis uniform n	Random discrete uniform, without repeating output.
Rand dis uniform r	Random discrete uniform, with repeat.
Rand exp n	Random number taken from exponential distribution without repeating output.
Rand exp r	Random number taken from exponential distribution with repeating output.
Rand gamma n	Random gamma, no repeat.
Rand gamma r	Random gamma, repeat.
Rand normal n	Random normal, no repeat.
Rand normal r	Random normal, repeat.
Ran permut vec n	Random permutation of an integer vector, no repeating output.
Ran permut vec r	Random permutation of an integer vector, with repeating output.
Ret dis binomial n	Return dis binomial, no repeat.

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Function	***Use***
Ret dis binormial r	Return dis binomial, repeat.
Ret dis poisson n	Return dis poisson, no repeat.
Ret dis poisson r	Return dis poisson, no repeat.
savage scores sbr(*scores, *ties, input-col, rank)	Return element with this rank.
savage scores sbe(*scores, *ties, input-col, elem)	Return rank of this element.
Normal dist lt(*tail, x)	Lower tail probability.
Normal dist ut (*tail, x)	Upper tail probability.
Normal dist pt (*tail, x)	Point probability.
Student's-t lt (*tail, t, deg-of-freedom)	Lower tail probability.
Student's-t ut (*tail, t, deg-of-freedom)	Upper tail probability.
Student's-t tts (*tail, t, deg-of-freedom)	Two tail significance level probability.
Student's-t ttc (*tail, t, deg-of-freedom)	Two tail confidence level probability.
Prob chi sq lt (*tail, x, deg-of-freedom)	Lower tail probability.
Prob chi sq ut (*tail, x, deg-of-freedom)	Upper tail probability.
Prob f dist lt (*tail, f, df1, df2)	Lower tail probability.
Prob f dist ut (*tail, f, df1, df2)	Upper tail probability.
Prob beta dist lt (x, a, b, tol)	Lower tail probability.
Prob beta dist ut (x, a, b, tol)	Upper tail probability.
Prob beta dist pd (x, a, b, tol)	Probability density function.
Gamma dist lt (*tail, g, a, b)	Lower tail probability.
Gamma dist ut (*tail, g, a, b)	Upper tail probability.
Deviates normal lt (*tail, p)	Lower tail probability.
Deviates normal ut (*tail, p)	Upper tail probability.
Deviates normal tts (*tail, p)	Two tail significance level probability.

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Function	***Use***
Deviates normal ttc (*tail, p)	Two tail confidence level probability.
Deviates students-t lt (*tail, p, df)	Lower tail probability.
Deviates students-t ut (*tail, p, df)	Upper tail probability.
Deviates students-t tts (*tail, p, df)	Two tail significance level probability.
Deviates students-t ttc (*tail, p, df)	Two tail confidence level probability.
Deviates chi sq (p, df)	Deviate associated with given lower tail probability.
Deviates f dist (p, df1, df2)	Deviate associated with given lower tail f probability.
Deviates beta (p, a, b, tol)	Deviate associated with given lower tail beta probability.
Deviates gamma dist (p, a, b, tol)	Deviate associated with given lower tail gamma probability.
Bivariate normal dist (x, y, rho)	Lower tail probability for bivariate Normal dist.
Beta dist lt	Beta dist, lower tail.
Beta dist pdf	Beta dist, probable density function.
Beta dist ut	Beta dist, upper tail.
Chi sq lt	Chi square, lower tail.
Chi sq ut	Chi square, upper tail.
Cumul normal	Cumulative normal distribution.
Erf	Error function.
Erfc	Complementary error function.
F dist lt	F dist, lower tail.
F dis ut	F dist, upper tail.
Gamma	Gamma function.
Getchardata	Get a character value from a column.
Getdatedata	Get a date value from a column.
Getnumericdata	Get numeric data from a column.

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Function	***Use***
Getrate	Get yield rate. This function is used exclusively by the Product Pricing Module.
Inc gamma p	Incomplete gamma function.
Inc gamma q	Incomplete gamma function.
Mean weighted	Mean, weighted.
Tsa auto corr coef	TSA auto correlation.
Tsa auto corr mean	TSA auto correlation mean.
Tsa auto corr parm	TSA auto correlation parameter.
Tsa auto corr part	TSA auto correlation partial.
Tsa auto corr pred	TSA auto correlation predictor.
Tsa auto corr stat	TSA auto correlation stat.
Tsa auto corr var	TSA auto correlation variance.

Other Predefined Functions

Function	***Use***
Average (col)	Returns the average of a column.
Count (col)	Returns the number of columns.
Earliest (col)	Earliest of all periods.
Latest (col)	Latest of all periods.
Max (col)	Returns the maximum value of the set.
Min (col)	Returns the minimum value of the set.
MaxVal (x, y)	If x > y return x else y.
MinVal (x, y)	If x < y return x else y.

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Function	***Use***
Sum (col)	Returns the sum of the set. Works only with DataSets. Do not use with a Primary (DataMap) Data Element.
Beginning of month (date_from)	Beginning of date's month.
Beginning of year (date_from)	Beginning of date's year.
End of month (date_from)	End of date's month.
End of year (date_from)	End of date's year.
Round (expression, factor)	Percent round.
Substring (string, start, length)	Substring of a string.
TrimSubStr (string, start, length)	Substring without trailing blanks.
Truncate (expression, factor)	Truncate a numeric value. Numeric value to truncate. Number of decimal places to truncate to.
ln (x)	Natural log.
log10 (x)	Log base 10.
Square Root (x)	Square root.
Cos (x)	Cosine.
Sin (x)	Sine.
Tan (x)	Tangent.
Absolute (x)	Absolute value of x.
Date (string)	Convert string to date.
RunDate ( )	Run date of the job. Uses the system date.
Frequency (col, elem)	Frequency of a specified element in a column.
Product (col)	Product of series of elements.

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Function	*Use*
MSE (col, *n, degrees-of-freedom).	Mean squared error.
MAD (col, *n, degrees-of-freedom)	Mean absolute deviation.
RWC_BRW1	For BASEL Accord calculations. This function calculates the risk weight (RW_c) for corporate exposures, according to the formula specified following this table.
RWC_BRW2	Calculation of an exposure's risk weight (RW_c) with maturity adjustment for corporate exposures, according to the formula specified following this table.
RWC_BCR1	Calculation of the capital requirement K with maturity adjustment, according to the formula specified following this table.
RWC_BCR2	Calculation of the capital requirement K with firm-size adjustment, according to the formula specified following this table.
RWC_BCR3	Calculation of the capital requirement K for residential mortgage exposures, according to the formula specified following this table.
RWC_BCR4	Calculation of the capital requirement K for qualifying revolving exposures, according to the formula specified following this table.
RWC_BCR5	Calculation of the capital requirement K for other retail exposures, according to the formula specified following this table.

RWC_BRW1

Formula:

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$$RW_c = \text{Mumimum}\left\{\begin{array}{l}\dfrac{LDG \times BRW_c(PD)}{50}, \\ \\ 12.5 \times LDG\end{array}\right\},$$

with

$$BRW_c(PD) = 976.5 \times N(1.118 \times G(PD) + 1.288) \times (1 + \frac{0.0470 \times (1 - PD)}{PD^{0.44}}),$$

where

PD is the probability of default;
LGD is the loss given default;
$N(.)$ is the cumulative standard normal distribution function,

and

$G(.)$ denotes the inverse cumulative standard normal distribution function.

Calling Sequence: RWC = RWC_BRW1(PD,LGD)

RWC_BRW2

Formula:

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$$RW_c = \text{Mumimum}\left\{\begin{array}{l}\dfrac{LDG \times BRW_c(PD)}{50} \times [1 + b(PD) \times (M\text{-}3)], \\ \\ 12.5 \times LDG\end{array}\right\},$$

with

$$BRW_c(PD) = 976.5 \times N(1.118 \times G(PD) + 1.288) \times (1 + \frac{0.0470 \times (1 - PD)}{PD^{0.44}}),$$

and

$$b(PD) = \begin{cases} 7.6752 \times PD^2 - 1.92111 \times PD + 0.0774, & \text{if } PD < 0.05, \\ 0 & \text{otherwise,} \end{cases}$$

where

PD is the probability of default;
LGD is the loss given default;
M is the maturity time for the exposure,
$N(.)$ is the cumulative standard normal distribution function,

and

$G(.)$ denotes the inverse cumulative standard normal distribution function.

Calling Sequence: RWC = RWC_BRW2(PD,LGD,M)

RWC_BCR1

Formula:

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$$K = LGD \times N\left(\frac{G(PD) + G(0.999)\sqrt{R}}{\sqrt{1-R}}\right) \times \left(\frac{1 + (M - 2.5)b}{1 - 1.5b}\right)$$

with

$$b = (0.08451 - 0.05898 \times \log(PD))^2,$$

and

$$R = 0.24 - 0.12\frac{1 - e^{-50PD}}{1 - e^{-50}},$$

where

PD is the probability of default;
LGD is the loss given default;
M is the maturity time for the exposure,
$N(.)$ is the cumulative standard normal distribution function,

and

$G(.)$ denotes the inverse cumulative standard normal distribution function.

Calling Sequence: RWC_BCR1(PD,LGD,M)

RWC_BCR2

Formula:

$$K = LGD \times N\left(\frac{G(PD) + G(0.999)\sqrt{R}}{\sqrt{1-R}}\right) \times \left(\frac{1 + (M - 2.5)b}{1 - 1.5b}\right)$$

with

$$b = (0.08451 - 0.05898 \times \log(PD))^2,$$

and

$$R = 0.24 - 0.12\frac{1 - e^{-50PD}}{1 - e^{-50}} + 0.04 * \left(1 - \frac{S - 5}{45}\right),$$

where

PD is the probability of default;
LGD is the loss given default;
M is the maturity time for the exposure,
S is the total annual sale in millions of Euros,
$N(.)$ is the cumulative standard normal distribution function,

and

$G(.)$ denotes the inverse cumulative standard normal distribution function.

Calling Sequence: K = RWC_BCR2(PD,LGD,M,S)

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RWC_BCR3

Formula:

$$K = LGD \times N\left(\frac{G(PD) + G(0.999)\sqrt{R}}{\sqrt{1-R}}\right),$$

with

$$R = 0.15,$$

where

PD is the probability of default;
LGD is the loss given default;
$N(.)$ is the cumulative standard normal distribution function,

and

$G(.)$ denotes the inverse cumulative standard normal distribution function.

Calling Sequence: K = RWC_BCR3(PD,LGD)

RWC_BCR4

Formula:

$$K = LGD \times N\left(\frac{G(PD) + G(0.999)\sqrt{R}}{\sqrt{1-R}}\right) - 0.9PD \times LGD,$$

with

$$R = 0.15 - 0.13\left(\frac{1-e^{-50PD}}{1-e^{-50}}\right),$$

where

PD is the probability of default;
LGD is the loss given default;
$N(.)$ is the cumulative standard normal distribution function,

and

$G(.)$ denotes the inverse cumulative standard normal distribution function.

Calling Sequence: K = RWC_BCR4(PD,LGD)

RWC_BCR5

Formula:

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$$K = LGD \times N\left(\frac{G(PD) + G(0.999)\sqrt{R}}{\sqrt{1-R}}\right),$$

where

$$R = 0.17 - 0.15\left(\frac{1-e^{-35PD}}{1-e^{-35}}\right),$$

where

PD is the probability of default;
LGD is the loss given default;
$N(.)$ is the cumulative standard normal distribution function,

and

$G(.)$ denotes the inverse cumulative standard normal distribution function.

Calling Sequence: K = RWC_BCR5(PD,LGD)

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Chapter 16

Modeling Cash Flows

Understanding the Cash Flow Modeler

The Cash Flow Modeler enables you to interactively model cash flows for an instrument or product, graph and view the results online, and write the results to the database. You can explore assumptions affecting cash flows such as the interest rate environment, terms, and payment characteristics of the instrument and the effects of the Behavioral Model.

You can use the Cash Flow Modeler in one of three ways:

- To retrieve one of the delivered instrument cash flows, temporarily change selected parameters (for example, start date, initial balance, and interest rate), run the cash flow, and view the statistical and graphical results online.
- To modify a previously created user-defined instrument, override some of the parameters, model the cash flows, and view the results.
- To create a new instrument or pool from scratch based on your own implementation environment, model the cash flows, and view results online.

You can save the results of the Cash Flow Modeler (for both user-defined and new instruments) to the Cash Flow Modeler table. For delivered cash flows, you can view the results from changes that you make to the parameters online, but you cannot save those results and override the delivered cash flows.

Modeling Cash Flows for New Instruments

Access the Cash Flow Modeler from the PeopleSoft Funds Transfer Pricing application.

This section discusses how to:

- Generate cash flows for new instruments.
- Define detailed parameters.
- View cash flows.
- View financial measures.
- View error messages.
- Save modeling results.

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Pages Used to Model Cash Flows for New Instruments

Page Name	*Definition Name*	*Navigation*	*Usage*
Model New Instruments	FI_MODEL_NEW_INSTR	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Model a New Instrument, Model New Instruments	Generate cash flows for instruments, products, or pools.
Detailed Parameters	FI_CF_DETAIL_PARAM	Click the Detailed Parameters link on the Model New Instruments page.	View, modify, and define detailed parameters.
Cashflows	FI_CF_R00	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Model a New Instrument, CashFlows	View cash flow modeling results (statistics and charts).
Financial Measures	FI_CFCALC_R00	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Model a New Instrument, Financial Measures	View financial measures resulting from cash flow modeling.
Financial Calculation Output	FI_CFE_R00	Click the Display Error Message link on the Cashflows page.	Displays financial calculation output when cash flow is generated online from the Cash Flow Modeler process. View error messages concerning missing data, and errors generated when running the cash flow process. The system automatically displays the Error Messages page if you attempt to run the Cash Flow Modeler with missing data or if the process fails. The system displays the set, message number, message text, and process instance for each processing error.
Notes	FI_CASHFLOW_NOTES	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Model a New Instrument, Notes	Enter a description of the cash flow model.

Model New Instruments Page

Use the Model New Instruments page (FI_MODEL_NEW_INSTR) to generate cash flows for instruments, products, or pools.

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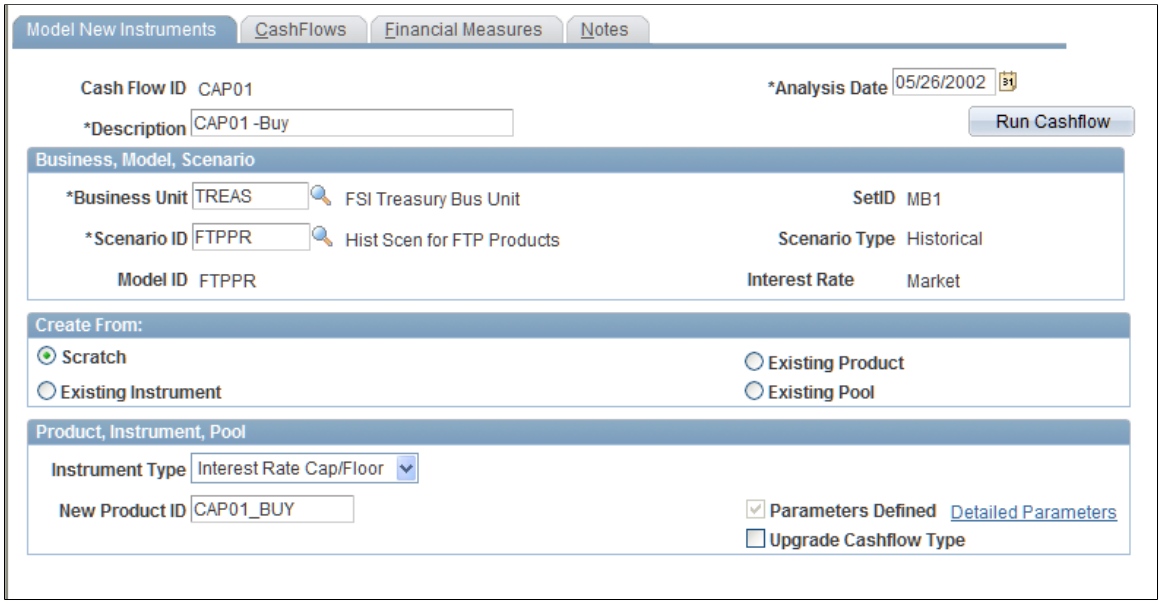
Navigation

Financial Services Industries, Analysis and Processing, Cashflow Modeler, Model a New Instrument, Model New Instruments

Image: Model New Instruments page

This example illustrates the fields and controls on the Model New Instruments page. You can find definitions for the fields and controls later on this page.



Run Cashflow Click to run the cash flow process after defining the parameters.

Business, Model, Scenario

Business Unit Select a predefined business unit from your business environment.

Scenario ID Select a scenario ID from the predefined values. When you enter the scenario ID, the system displays default values for the Scenario Type, FIN Model, andInterest Rate fields.

Note: On the Historic Business Rules page (Support Modules, Scenarios, Historic Business Rules) a model ID is associated with the specified scenario ID. Before you process cash flows, make sure that theTrace Settings field on the Model Definition page is set to a moderate value for that model ID. ATrace Settings field value of*8-Complete* could compromise performance capability significantly while processing cash flows.

FIN Model After you select a scenario ID, the system displays the financial model.

See Setting Up Model Definitions.

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Interest Rate

After you select a scenario ID, the system displays the Interest Rate type. The possible values are*Market, Deterministic,* or*Stochastic.*

Create From:

ScratchExisting Instrument, Existing Product, andExisting Pool

Select Scratchif you are modeling a new instrument.

If you are not modeling a new instrument, select one of the other options to use a template as a starting point.

Product, Instrument, Pool

Instrument Type

Select *Bond/Note, Cap/Floor, Deposit, LOC, Loan,* or*Swap Leg.*

Instrument ID, Product ID, andPool ID

Select an Instrument ID,Product ID, orPool ID.

The selection that you make depends on the Instrument Type selection.

Template Type

This field is available if you are using a loan template. Select *15FX Loan, 20FX Loan, 30FX Loan, 40FX Loan,* or*FL Loan.*

Parameters Defined

The system selects the Parameters Defined check box to indicate that all the parameters required to run the cash flow are defined. Define the parameters on the Detailed Parameters page if this option is not selected.

Upgrade Cashflow Type

Select to save this cash flow as a user-defined cash flow. Otherwise, the system saves the cash flow as a new instrument cash flow.

Note: You also need to click the Save button at the bottom of the page to save the cash flow results.

Detailed Parameters

Click to access the Detailed Parameters page. Enter or modify the instrument, product, or pool details.

Detailed Parameters Page

Use the Detailed Parameters page (FI_CF_DETAIL_PARAM) to view or modify parameters.

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Navigation

Click the Detailed Parameters link on the User Defined Cashflows page.

Image: Detailed Parameters page (1 of 2)

This example illustrates the fields and controls on the Detailed Parameters page (1 of 2). You can find definitions for the fields and controls later on this page.

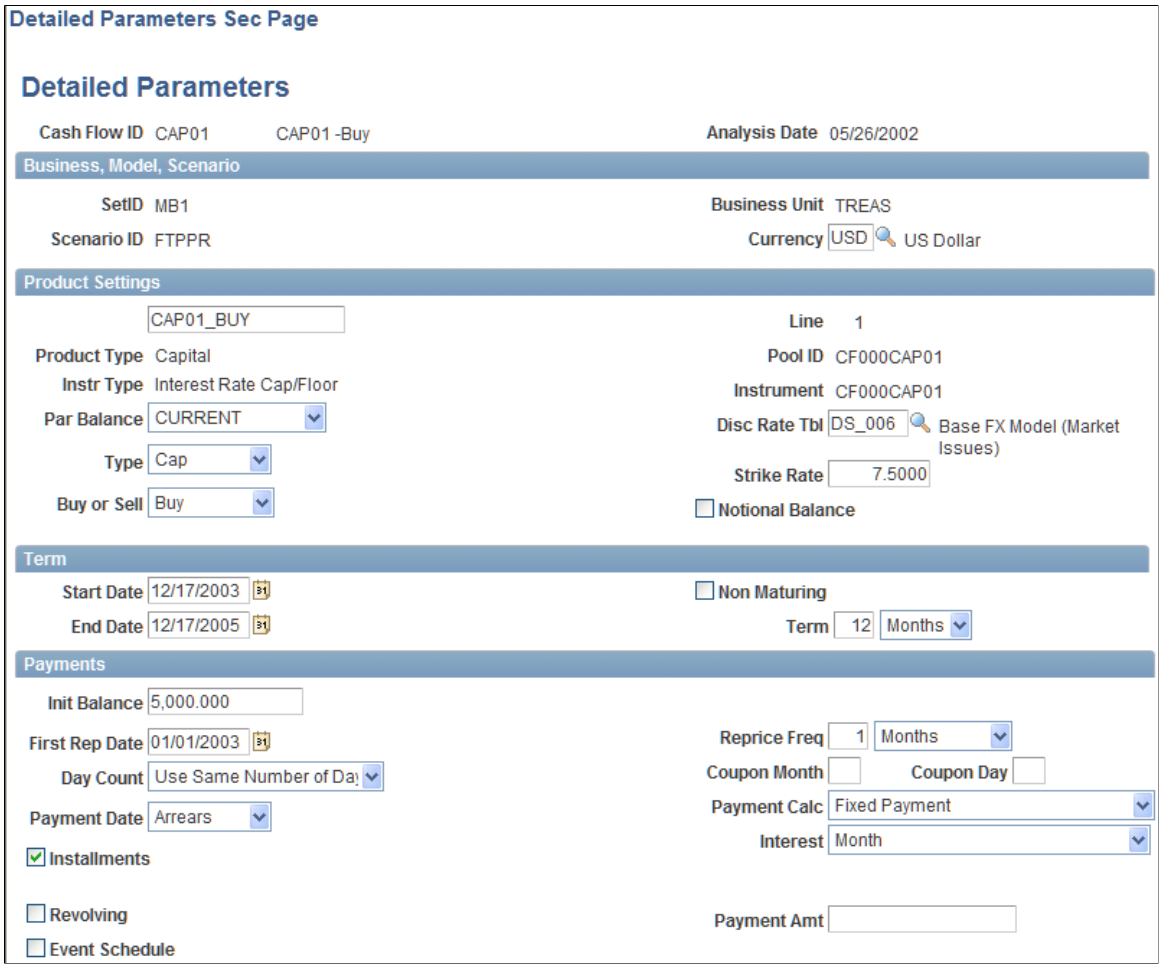

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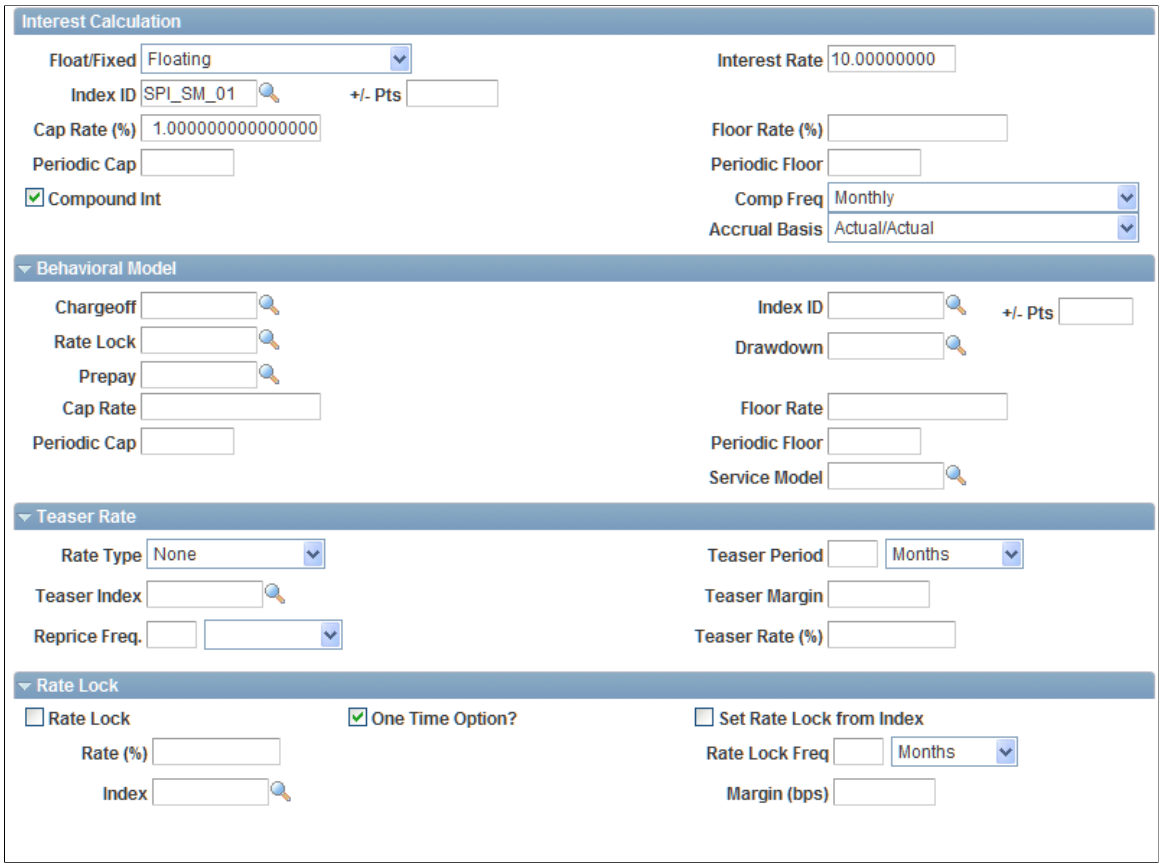
Image: Detailed Parameters page (2 of 2)

This example illustrates the fields and controls on the Detailed Parameters page (2 of 2). You can find definitions for the fields and controls later on this page.



You define the fields on the Detailed Parameters page by using the Product Portfolio Definition product, under the Product Setup and Behavioral Models pages. If you use an existing instrument, product, or pool template for your cash flow model, the system populates most of these fields, but you can modify many of the fields. If you are creating a new cash flow model, you need to provide much of the information on the Detailed Parameters page; however, the system automatically populates some of the fields, which you can modify as needed.

Depending on whether you are modeling cash flows for an instrument, product, or pool, the following are required fields:

- Disc Rate Tbl (discount rate table)
- Start Date
- First Rep Date (first reprice date)
- Reprice Freq (reprice frequency)
- Init Balance (initial balance)
- Installments
- Amortizing

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- Interest Rate
- Index ID

Related Links

Setting Up Product Definitions
Setting Up Behavioral Models

Viewing Cash Flows

The system displays four tabs depending on the instrument, product, or pool that you are modeling.

Cashflow Data Tab

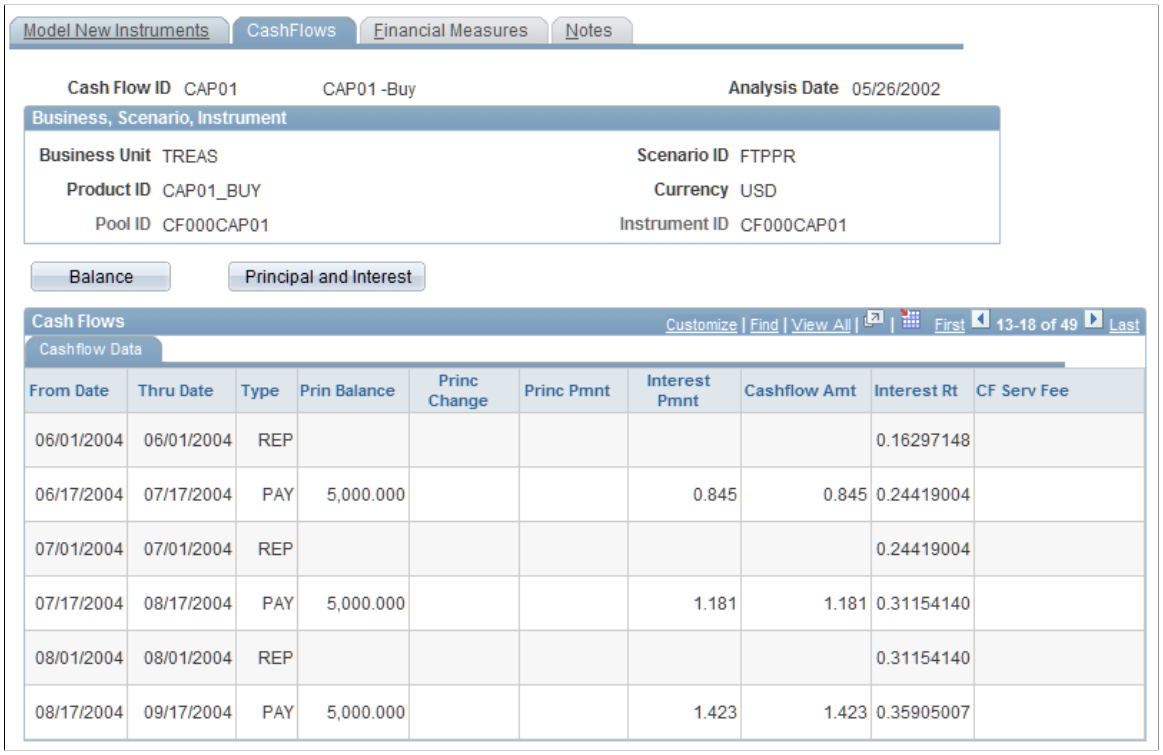
Use the Cashflows page (FI_CF_R00) to view the cash flow modeling results (statistics and charts).

Navigation

Financial Services Industries, Analysis and Processing, Cashflow Modeler, User Defined Cashflow, Cashflows

Image: Cashflows page: Cashflow Data tab

This example illustrates the fields and controls on the Cashflows page: Cashflow Data tab. You can find definitions for the fields and controls later on this page.



From Date	Thru Date	Type	Prin Balance	Princ Change	Princ Pmnt	Interest Pmnt	Cashflow Amt	Interest Rt	CF Serv Fee
06/01/2004	06/01/2004	REP						0.16297148	
06/17/2004	07/17/2004	PAY	5,000.000			0.845	0.845	0.24419004	
07/01/2004	07/01/2004	REP						0.24419004	
07/17/2004	08/17/2004	PAY	5,000.000			1.181	1.181	0.31154140	
08/01/2004	08/01/2004	REP						0.31154140	
08/17/2004	09/17/2004	PAY	5,000.000			1.423	1.423	0.35905007	

The cash flow results appear on the Cashflows page, and include balance, principal, and interest amounts. Click the Balance button to chart the balance amounts Click thePrincipal and Interest button to chart the principal and interest amounts.

See Understanding Financial Calculation Rules.

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Earning Output Tab

If the instrument, product, or pool that you are modeling uses a Forecast Scenario type, then the system displays the Earning Output page, which includes income, fees, and amounts associated with gains or losses.

Click the Balance button to view the charted balance amounts. Click thePrincipal and Interest button to view the charted principal and interest amounts.

Behavioral Output Tabs

If the instrument, product, or pool that you are modeling uses a Behavioral Model, then the system displays the deposit behavioral output page or the loan or line of credit behavioral output page.

Click Balance to chart the balance amounts. Click thePrincipal and Interest button to chart the principal and interest amounts.

See Setting Up Behavioral Models.

Financial Measures Page

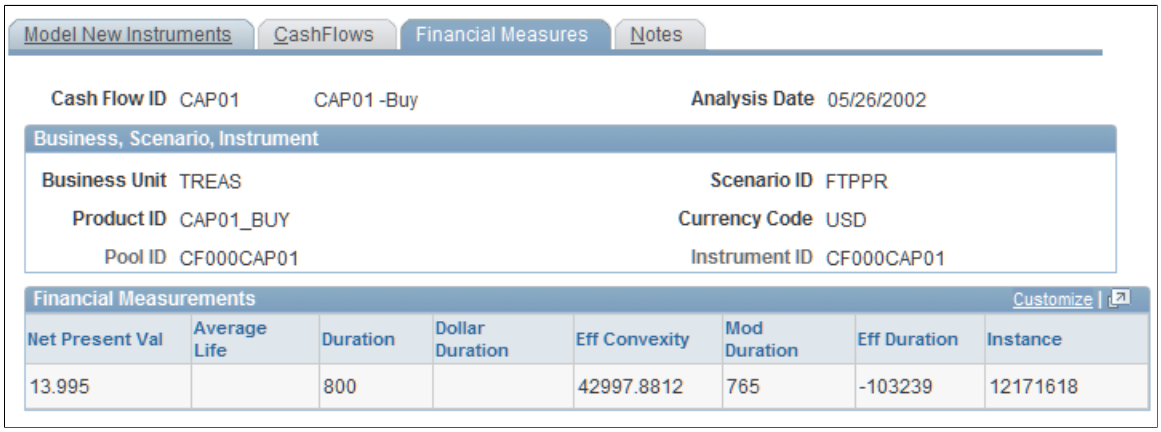
Use the Financial Measures page (FI_CFCALC_R00) to view financial measures resulting from cash flow modeling.

Navigation

Financial Services Industries, Analysis and Processing, Cashflow Modeler, Model a New Instrument, Financial Measures

Image: Financial Measures page

This example illustrates the fields and controls on the Financial Measures page. You can find definitions for the fields and controls later on this page.



After you run the Cash Flow Modeler, the system displays the resulting financial measurements for the modeled instrument, product, or pool.

See Understanding Financial Calculation Rules.

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Financial Calculation Output Page

Use the Financial Calculation Output page (FI_CFE_R00) to displays financial calculation output when cash flow is generated online from the Cash Flow Modeler process.

View error messages concerning missing data, and errors generated when running the cash flow process.The system automatically displays the Error Messages page if you attempt to run the Cash Flow Modeler with missing data or if the process fails. The system displays the set, message number, message text, and process instance for each processing error.

Navigation

Click the Display Error Message link on the Cashflows page.

The system displays the Error Messages page if you attempt to run the Cash Flow Modeler with missing data or if the process fails. The system displays the set, message number, message text, and process instance for each processing error.

Saving Modeling Results

To save the modeling results, click the Save button on the Model New Instruments page. The system saves the Model New Instruments page data in the FI_CF_DEFN table, the Detailed Parameters page data in the FI_CF_INSTR_SEQ table, the cash flow data in the FI_CF_R00 table, and the Financial Measures page data in the FI_CFCALC_R00 table.

Modeling Cash Flows for User-Defined Instruments

After you have defined the cash flow model, you can run the CashFlow Modeler to view and save the results as needed.

This section discusses how to generate cash flows for user-defined instruments.

Pages Used to Model Cash Flows for User-Defined Instruments

Page Name	*Definition Name*	*Navigation*	*Usage*
User Defined Cashflows	FI_USER_DEFN_CF	Financial Services Industries, Analysis and Processing, Cashflow Modeler, User Defined Cashflow	Generate cash flows for user-defined instruments, products, or pools.
Detailed Parameters	FI_CF_DETAIL_PARAM	Click the Detailed Parameters link on the User Defined Cashflows page.	View or modify parameters.
Cashflows	FI_CF_R00	Financial Services Industries, Analysis and Processing, Cashflow Modeler, User Defined Cashflow, Cashflows	View the cash flow modeling results (statistics and charts).

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Page Name	*Definition Name*	*Navigation*	*Usage*
Financial Measures	FI_CFCALC_R00	Financial Services Industries, Analysis and Processing, Cashflow Modeler, User Defined Cashflow, Financial Measures	View the financial measures resulting from the cash flow modeling.
Error Messages	FI_CFE_R00	Click the Display Error Message link on the Cashflows page.	View error messages concerning missing data, and errors generated when running the cash flow process. The system automatically displays the Error Messages page if you attempt to run the CashFlow Modeler with missing data or if the process fails. The system displays the set, message number, message text, and process instance for each processing error.
Notes	FI_CASHFLOW_NOTES	Financial Services Industries, Analysis and Processing, Cashflow Modeler, User Defined Cashflow, Notes	Enter a description of the cash flow model.

User Defined Cashflows Page

Use the User Defined Cashflows page (FI_USER_DEFN_CF) to generate cash flows for user-defined instruments, products, or pools.

Navigation

Financial Services Industries, Analysis and Processing, Cashflow Modeler, User Defined Cashflow

The business unit, scenario ID, model ID, SetID, scenario type, interest rate, and product, instrument, or pool ID appear by default, depending on the cash flow ID that you selected.

Note: On the Historic Business Rules page (Support Modules, Scenarios, Historic Business Rules) a model ID is associated with the specified scenario ID. Before you process cash flows, make sure that theTrace Settings field on the Model Definition page is set to a moderate value for that model ID. ATrace Settings field value of*8-Complete* could compromise performance capability significantly while processing cash flows.

To model cash flows for a user-defined instrument, product, or pool, enter the start date, end date, initial balance, and interest rate for the cash flow model. Click Detailed Parameters to access the Detailed Parameters page, on which you can enter or modify additional instrument, product, or pool details.

After you have defined the required parameters, click the Run Cashflow button to run the Cash Flow Modeler process. To save the modeling results, click theSave button on the User Defined Cashflows page or the Financial Measures page. The system saves the results.

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Related Links

Modeling Cash Flows for New Instruments

Generating Delivered Cash Flows

You can quickly retrieve delivered instrument or product template data, alter a minimal set of parameters, and process cash flows. You can view the results of the Cash Flow Modeler online, but you cannot save for later retrieval any changes that you make.

This section discusses how to generate delivered cash flows.

Pages Used to Generate Delivered Cash Flows

Page Name	*Definition Name*	*Navigation*	*Usage*
Delivered Cashflows	FI_DELIVERED_CF	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Delivered Cashflows	Modify and run delivered cash flow models.
Detailed Parameters	FI_CF_DETAIL_PARAM	Click the Detailed Parameters link on the Delivered Cashflows page.	View or modify parameters.
Cashflows	FI_CF_R00	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Delivered Cashflows, Cashflows	View cash flow modeling results (statistics and charts).
Financial Measures	FI_CFCALC_R00	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Delivered Cashflows, Financial Measures	View the financial measures resulting from the cash flow modeling.
Error Messages	FI_CFE_R00	Click the Display Error Message link on the Cashflows page.	View error messages concerning missing data, and errors generated when running the cash flow process. The system automatically displays the Error Messages page if you attempt to run the Cash Flow Modeler with missing data or if the process fails. The system displays the set, message number, message text, and process instance for each processing error.
Notes	FI_CASHFLOW_NOTES	Financial Services Industries, Analysis and Processing, Cashflow Modeler, Delivered Cashflows, Notes	Enter a description of the cash flow model.

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Delivered Cashflows Page

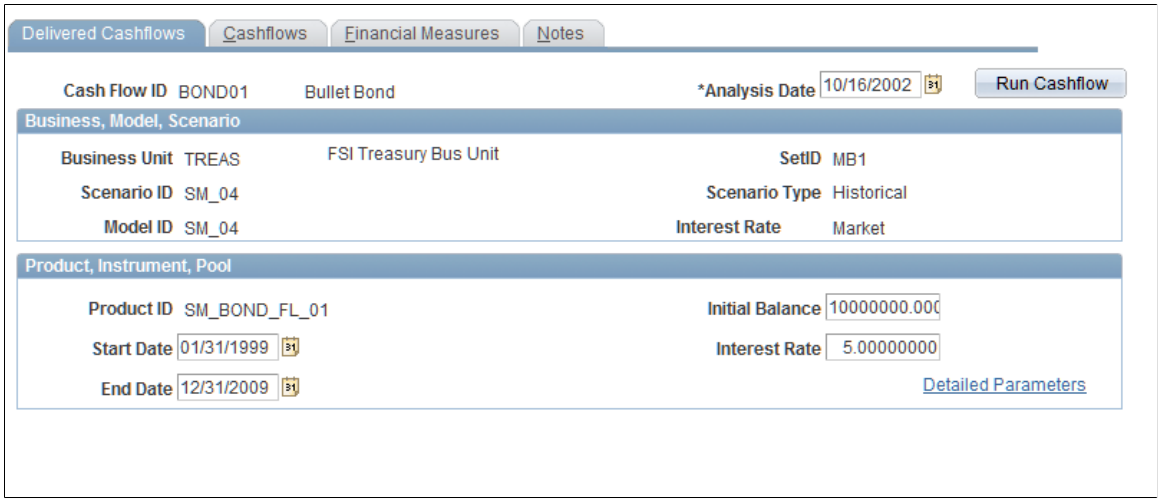
Use the Delivered Cashflows page (FI_DELIVERED_CF) to modify and run delivered cash flow models.

Navigation

Financial Services Industries, Analysis and Processing, Cashflow Modeler, Delivered Cashflows

Image: Delivered Cashflows page

This example illustrates the fields and controls on the Delivered Cashflows page. You can find definitions for the fields and controls later on this page.



The business unit, scenario ID, model ID, SetID, scenario type, interest rate, and product, instrument, or pool ID appear by default, depending on the cash flow ID that you selected.

Note: On the Historic Business Rules page (Support Modules, Scenarios, Historic Business Rules) a model ID is associated with the specified scenario ID. Before you process cash flows, make sure that theTrace Settings field on the Model Definition page is set to a moderate value for that model ID. ATrace Settings field value of*8-Complete* could compromise performance capability significantly while processing cash flows.

To modify and run a delivered cash flow model, enter the start date, end date, initial balance, and interest rate for the cash flow model. Click Detailed Parameters to access the Detailed Parameters page, on which you can enter or modify additional instrument, product, or pool details.

See Detailed Parameters Page.

After you have defined the required parameters or modified the parameters as needed, click the Run Cashflow button to run the cash flow. You cannot save the results from a delivered cash flow model that you have modified.

Related Links

Modeling Cash Flows for New Instruments

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Chapter 17

Performing Financial Services Industry Portfolio Forecasting

Understanding the Portfolio Forecast Engine

Portfolio Forecasting enables you to enter forecast assumptions and aggregate new volumes for use by the PeopleSoft Financial Services Industry applications easily, rapidly, and interactively.

Portfolio Forecasting uses the Portfolio Forecast application engines (FI_FCSTFTP/FI_FCSTRWC) for one streamlined set of functionality that is tailored specifically to Financial Services Industry needs. This enables you to model future changes in product portfolio composition based on unique business rules, projections, and assumptions.

Using the Portfolio Forecast application engine, you can forecast multiple periods, product balances, target balances, and FTP rates. The Portfolio Forecast application engines perform these functions:

- Updates balances of existing pools for future fiscal year and accounting periods based on existing cash flow output data.
- Uses forecasted product origination data to create new product pools with starting balances and the proper financial attributes.
- Calls the Cash Flow Generator process to create cash flows for the newly created product pools.

Run the Portfolio Forecast application engine to include forecasted product originations in the financial performance measurements of the future, including:

- Strategic corporate planning.
- Business unit, department, or product level planning.
- Analytic simulation runs for different scenario IDs.

The Portfolio Forecast application engine produces the following output:

- New future-dated instrument pools that represent new product originations (FI_POOLINST_F00 data).

  The application engine, FI_FCSTRWC creates new FI_POOLBAL_R00 data.
- New cash flow record output for future-dated instrument pools (FI_POOL_CF_R00).

  The engine saves these results to file, but retains only the ACC rows to limit output to one row per month per pool for most customers.
- Financial Calculator rows for future-dated instrument pools (FI_POOLCALC_R00)—one row per pool.

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- FI_FCSTFTP Forecasts FTP Rate output rows—one row per pool.

The main objective of using the Product Forecast application engine is to enable you to enter forecasted volumes and to prepare and aggregate these volumes for the Portfolio Forecast application engine. When you run the Portfolio Forecast application engine, it automatically identifies and processes the entire forecast horizon as defined in the analytic forecasting rules, generating new origination pools and building balance records for each period that reflects runoff.

Typically, you run the Portfolio Forecast application engine in a job stream. This job stream must always be run with a scenario ID with a type of FORECAST, and the dates on the run control page must occur within the forecasted scenario's time span.

The main purpose of the Portfolio Forecast application engine is to provide future balances to forecasting jobs. This means that the Portfolio Forecast application engine must translate the new business assumptions from Product Forecast application engine into starting product balances (starting balance of a product that starts at a particular time in the future). The Portfolio Forecast application engine also must obtain amortized balances from historic products (products that have already started in the past) and historic new business assumptions (the amortized balances of the new business assumptions from previous fiscal year and accounting periods). Here is an example:

Analysis date: 01/01/2001

Existing portfolio data:

- Start date: 11/01/2000
- Historic balance amounts: 11/01/2000, 1,000,000 USD, 12/01/2000, 990,000 USD, 01/01/2001, 980,000 USD

New business assumptions:

- January 2001: 2,000,000 USD (this amount will be amortized like the historic balance—that is, 02/01/2001, 1,990,000 USD, 03/01/2001, 1,980,000 USD, and so on).
- February 2001: 5,000,000 USD (this amount will be amortized like the historic balance—that is, 03/01/2001, 4,990,000 USD, 04/01/2001, 4,980,000 USD, and so on).

Note: Processing *does not* consider dimensions (channels, customers, products, and departments) when allocating forecasted amounts. You should configure forecast definitions with product and channel keys.

Understanding Target Balances

A target balance is a forecast capability that nets forecasted origination volume to historic runoff for a product. The processing logic in the Portfolio Forecast application engine assures you that the outstanding principal balance of the product for a particular period equals the amount specified as the target balance. In essence, the Portfolio Forecast application engine subtracts the outstanding principal balance of the cash flow runoff from the forecasted pool volumes.

Here is an example of the logic-and-process flow using a multidimensional (multipool per product) forecast assumption:

1. Run the Financial Performance Measures (FPM) application engine for the historic book at any time.

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2. Assume that the historic CF principal balance (from FI_POOL_CF_R00) for period #1, Prod P160 totalled 20 USD.

3. The Portfolio Forecast application engine would therefore create five new FI_POOLINST_ F00 rows, each with an initial balance of 196 USD each.

   This represents the adjustment of 20 USD over the five pools.

4. The Portfolio Forecast application engine would also create the cash flow records for new FI_POOLINST_ F00 rows as part of the process.

   The sum of all principal balance fields for product P160 would thus equal 1,000 USD (the target balance for that period from the forecast).

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Chapter 18

Running Financial Services Industry Application Engines

Running Jobstreams

This section lists the pages used to run jobstreams.

Pages Used to Run Jobstreams

Page Name	*Definition Name*	*Navigation*	*Usage*
Run Jobstream	RUN_PF_JOBSTREAM	Financial Services Industries, Analysis and Processing, Run Engines, Run Jobstreams, Run Jobstream	Run jobstreams automatically and in sequence. Each job in the jobstream initiates automatically after the previous job completes.
Record Suites	PF_RECSUITE_TBL1	Financial Services Industries, Analysis and Processing, Run Engines, Review Record Suites, Record Suites	View all of the defined record suites.
Message Header	PF_ENGMSG_HEAD	Financial Services Industries, Analysis and Processing, Run Engines, Messages, Message Header Click the Run Engines link. Then click the Messages link in the Run Jobstreams menu.	View display-only process information such as the record suite ID and engine ID, as well as the run control parameters for the process instance of the engine that you just ran.
Message Detail	PF_ENGMSG_LOG	Financial Services Industries, Analysis and Processing, Run Engines, Messages, Message Detail Click the Run Engines link. Then click the Messages link in the Run Jobstreams menu.	View display-only process information such as the source name, field name, and field value for the process instance of the engine that you just ran.
Process List	PMN_PRCSLIST	Financial Services Industries, Analysis and Processing, Run Engines, Process Monitor, Process List Click the Run Engines link. Then click the Process Monitor link in the Run Jobstreams menu.	View a list of requested processes.

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Page Name	Definition Name	Navigation	Usage
Server List	PMN_SRVRLIST	Financial Services Industries, Analysis and Processing, Run Engines, Process Monitor, Server List Click the Run Engines link. Then click the Process Monitor link in the Run Jobstreams menu.	View a list of servers available.

Running the Journal Post Engines

This section provides an overview of instrument-level posting and lists the pages used to run the journal post engines.

Note: To do instrument-level profitability reporting from the PF_Ledger, make sure that you use only 18 characters to uniquely identify each instrument ID; that is, use only 18 of the available 20 characters in FI_INSTRUMENT_ID. The reason is that when the PF_EDIT program is run prior to posting data to PF_Ledger, it checks that each of these instrument IDs is found in the PF_OBJ_TBL, which can only handle field sizes up to 18 characters.

Pages Used to Run the Journal Post Engines

Page Name	Definition Name	Navigation	Usage
FI Journal Post	RUN_FI_POST	Financial Services Industries, Analysis and Processing, Journal Post Engines, FI Journal Post Click the Run Engines link. Then click the FI Journal Post link in the Journal Post Engines menu.	Post instrument data from FI _JRNL_F00 to FI_ILDGR_ F00.
FI Batch Selection	FI_POST_BATCH	Financial Services Industries, Analysis and Processing, Journal Post Engines, FI Journal Post, FI Batch Selection Click the Run Engines link. Then click the FI Journal Post link in the Journal Post Engines menu.	Select by batch ID the instrument data to post from FI_JRNL_F00 to FI_ILDGR _F00.

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Page Name	*Definition Name*	*Navigation*	*Usage*
Run FI Unpost	RUN_FI_UNP	Financial Services Industries, Analysis and Processing, Journal Post Engines, FI Journal Unpost, Run FI Unpost Click the Run Engines link. Then click the FI Journal Unpost link in the Journal Post Engines menu.	Unpost data by batch ID from FI_ILDGR_F00.
FI Journal Unpost - Batch Selection	FI_UNPOST_BATCH	Financial Services Industries, Analysis and Processing, Journal Post Engines, FI Journal Unpost, Batch Selection Click the Run Engines link. Then click the FI Journal Unpost link in the Journal Post Engines menu.	Select by batch ID the instrument data to unpost from FI_ILDGR_F00.
Journal Cleanup	RUN_FI_DELB	Financial Services Industries, Analysis and Processing, Journal Post Engines, FI Journal Cleanup, Journal Cleanup Click the Run Engines link. Then click the FI Journal Cleanup link in the Journal Post Engines menu.	Delete data from FI_IJRNL _F00 by batch ID according to the parameters that you select. You can only delete batches that are not posted. Once posted, the batch cannot be deleted.
FI Journal Cleanup - Batch Selection	FI_DELETE_BATCH	Financial Services Industries, Analysis and Processing, Journal Post Engines, FI Journal Cleanup, Batch Selection Click the Run Engines link. Then click the FI Journal Cleanup link in the Journal Post Engines menu.	Select by batch ID the unposted instrument data to delete from FI_IJRNL_F00.

Understanding Instrument-Level Posting

You have the option of posting the results of the enriched engines to the Instrument-Level Ledger (FI_POST). You can also unpost (FI_UNPOST) data previously posted to FI_ILDGR_R00. Additionally, you can delete groups of journals (batches) from the journal table (FI_DELBATCH).

The instrument-level posting process provides a mechanism to aggregate and store financial data associated with a specific instrument. This process is one means that an institution might choose to store and ultimately report on product profitability. Another alternative is posting profitability results at a more summarized level in the PF_LEDGER_F00 table. The key difference between these two approaches is that instrument-level posting stores data in a more detailed ledger table (FI_ILDGR_F00). This table includes the FI_INSTRUMENT_ID as an additional key.

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Instrument-level posting is similar to summary-level posting (as discussed in detail in the *PeopleSoft Enterprise Performance Management Fundamentals 9.1 Product Documentation*). Both require you to populate a journal table, then run a job that summarizes and inserts or updates a target ledger table. If data exists in the target table with the same dimensions (for example, Account, Department ID, Fiscal Year, Accounting Period, and so forth), it is added to the existing ledger rows.

Instrument-level processing differs from summary-level posting in that there is no edit process included. This means that the process does not check for invalid dimensions or out-of-balance conditions. Taking this approach can avoid lengthy processing times for what is normally a high volume set of tables. It is the responsibility of the implementation team to assure that the dimensions and amounts are valid.

You can choose which process (or combination of processes) to employ. Here are some guidelines:

1. Instrument-level posting generally implies a longer processing cycle due to the detailed instrument volumes.

2. In addition to other required fields, instrument-level posting requires you to associate an instrument ID and account with every row of data.

   This is sometimes difficult to achieve.

Both processes require competency with the use of data manager or other tools, when creating appropriate data in the journal tables.

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Appendix A

Using Online Analytic Reports

Building Custom Reports

This section discusses how to:

- Set up the report definition.
- Define Financial Services Industry (FSI) reporting templates.

Pages Used to Build Custom Reports

Page Name	*Definition Name*	*Navigation*	*Usage*
Reporting Definition	FI_RPT_DEFN	Financial Services Industries, Reports, Custom, Build Custom Reports, Reporting Definition	Set up the report definition by building and viewing online a customized FSI report.
FSI Reporting Templates	FI_RPT_TEMPLATE	Click the Templates link on the Reporting Definition page.	Define further the transactional data that you want to view in a report.

Reporting Definition Page

Use the Reporting Definition page (FI_RPT_DEFN) to set up the report definition by building and viewing online a customized FSI report.

Navigation

Financial Services Industries, Reports, Custom, Build Custom Reports, Reporting Definition

Use the Reporting Definition page to build a report off of any table that is keyed by fiscal year and accounting period. For example, a balance sheet or income statement type of report wherein you join the transaction table with a ledger account tree.

To build and view online a customized FSI report:

1. Select a SetID, scenario ID, and business unit.

   Specify the as of date or the year and period for the report.

2. Select the Perform Trend check box if you want to display multiple reporting periods at one time.

3. Specify in the Tree Name field the tree that you want to join with the source table containing the transaction data.

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4. Specify in the Source Table field the transaction table that you want to join with the tree.

   Note: The table must have the same product ID or account number as the tree that you specified.

5. Select in the Template ID field one of the predefined templates, if you want to view the data in more detail.

   See FSI Reporting Templates Page.

6. Specify in the Amount Field field if you want to view transactional detail.

7. Click the Templates button to access the FSI Reporting Templates page, where you can view an existing template or create a new template for viewing your data.

   See FSI Reporting Templates Page.

8. Specify in the Dimension field if you want to view the data for an additional dimension for example, a product node.

9. Enter a detail value if you want to view a specific value.

10. Specify in the Tree ID field if you want to join an additional tree to the data that you are viewing.

11. Specify in the Tree Node field if you want to join a specific tree node to the data.

12. Click the Run Report button to view the statistical data and its graphic representation.

On the left-hand side the system displays the reporting tree hierarchical structure. Click any of the links to view and chart the corresponding statistical data.

FSI Reporting Templates Page

Use the FSI Reporting Templates page (FI_RPT_TEMPLATE) to define further the transactional data that you want to view in a report.

Navigation

Click the Templates link on the Reporting Definition page.

To access or create a template for viewing your data in additional detail at the transactional level:

1. Specify in the Reporting Template ID field the template name.

2. Specify in the Table Name field the transactional table that you want to join to the reporting tree.

3. Specify in the Field Name field the table fields that you want to include in the template.

4. When you have defined the template, click the Apply button to create the template, then clickOK to return to the previous page.

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Viewing Dataset Statistics

The DataSet Statistics reporting feature provides a generic utility based on EPM Warehouse DataSets (see *PeopleSoft Enterprise Performance Management Fundamentals 9.1 Product Documentation)* to perform a quick statistical analysis on a selected set of values. The field selected for analysis must be a numeric measure or amount field. The utility also displays a histogram as part of the analysis.

This section discusses how to:

- Query datasets.
- View dataset statistics.

Pages Used to View Dataset Statistics

Page Name	*Definition Name*	*Navigation*	*Usage*
Dataset Statistics	FI_DS_STAT_PNL	Financial Services Industries, Reports, Custom, Dataset Statistics	Query datasets by specifying the report parameters for the dataset statistics.
Dataset Statistics	FI_DS_STAT_RES_PNL	Click the Run Report button on the Dataset Statistics (query) page.	View the dataset statistics and chart.

Dataset Statistics query Page

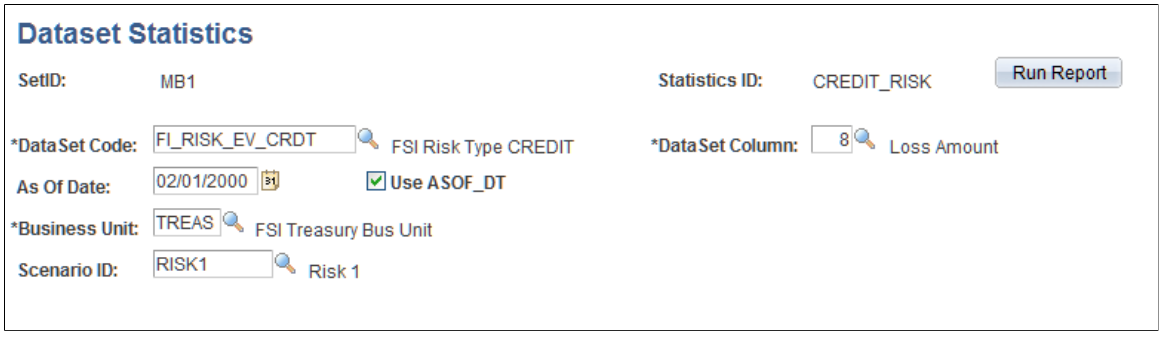
Use the Dataset Statistics query page

Navigation

Financial Services Industries, Reports, Custom, Dataset Statistics.

Image: Dataset Statistics query page

This example illustrates the fields and controls on the Dataset Statistics query page. You can find definitions for the fields and controls later on this page.



To perform a dataset query:

1. Select a predefined dataset code.

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2. Select a dataset column (or field) from the dataset.

   The field's description appears to the right of the field.

3. Enter the as of date or the year or period for the report.

4. Click the Run Report button to run the query and generate the report.

Each query is stored by statistics ID, allowing you to save and revisit queries at will.

Dataset Statistics results Page

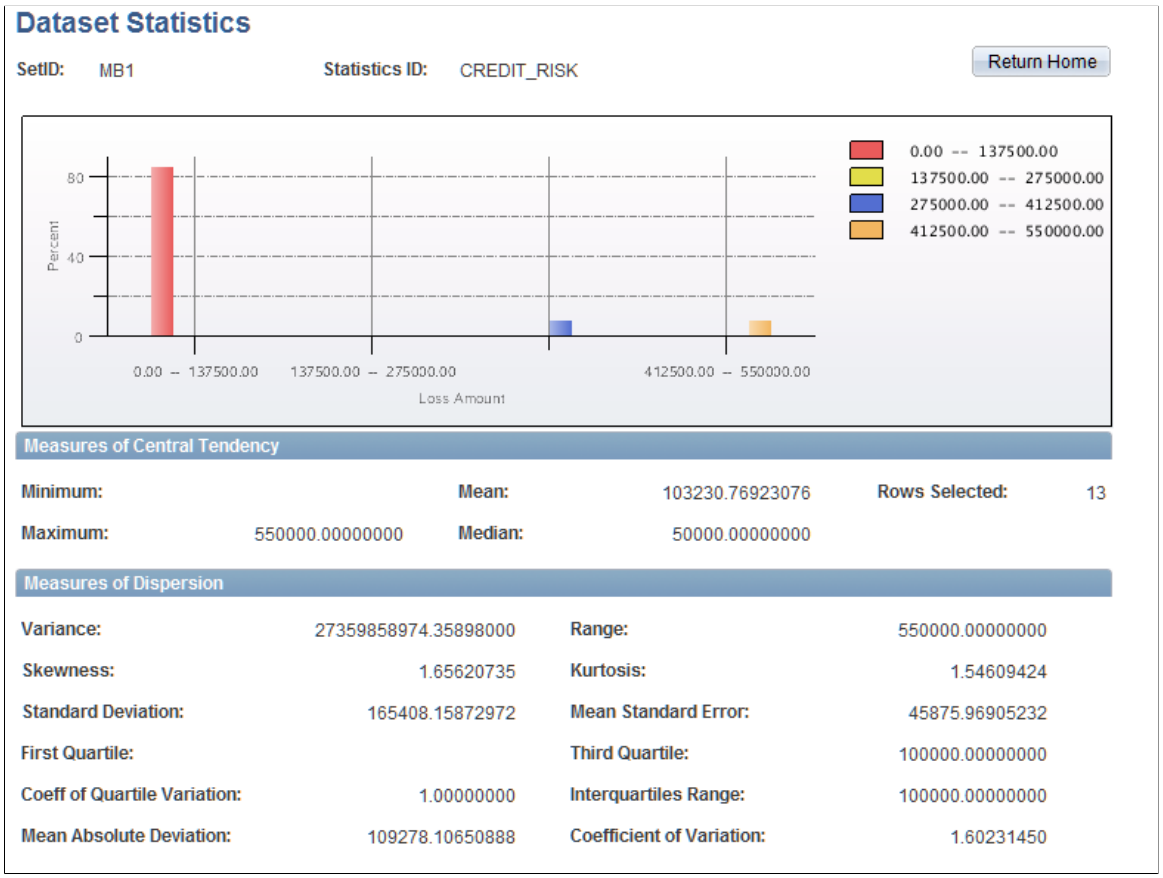
Use the Dataset Statistics results page

Navigation

Click the Run Report button on the Dataset Statistics (query) page.

Image: Dataset Statistics results page

This example illustrates the fields and controls on the Dataset Statistics results page. You can find definitions for the fields and controls later on this page.



The system displays the statistical results of the dataset query, including a graph that charts the frequency of each range of values returned.

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Using the Migration Matrix Utility

Use the migration matrix utility to analyze changes in instrument, facility, or collateral attributes. The migration matrix utility enables you to evaluate how selected financial instruments in a set of data change over time. The term *migration matrix* refers to the fact that the analytic results are arranged in a grid, with the starting value attributes arrayed along the X axis and the ending values shown along the Y. The results shown at the intersection can be shown as either an instrument count or a percentage.

Some representative questions that this utility is designed to answer are:

- Over the past year, what percentage of the loans in my portfolio that started with an "A" risk rating ended up in default?
- Over the past month, how many instruments in my portfolio went from 60 days delinquent to current?
- Of all the loans that ended up in default as of the end of the quarter, what percentage started as delinquent?

Page Used to Use the Migration Matrix Utility

Page Name	*Definition Name*	*Navigation*	*Usage*
FSI Migration Matrix	RWC_RISK_MIGR_PAGE	Financial Services Industries, Reports, Risk-Weighted Capital, FSI Migration Matrix	View the changes in selected attributes for a set of financial instruments.

FSI Migration Matrix Page

Use the FSI Migration Matrix page (RWC_RISK_MIGR_PAGE) to view the changes in selected attributes for a set of financial instruments.

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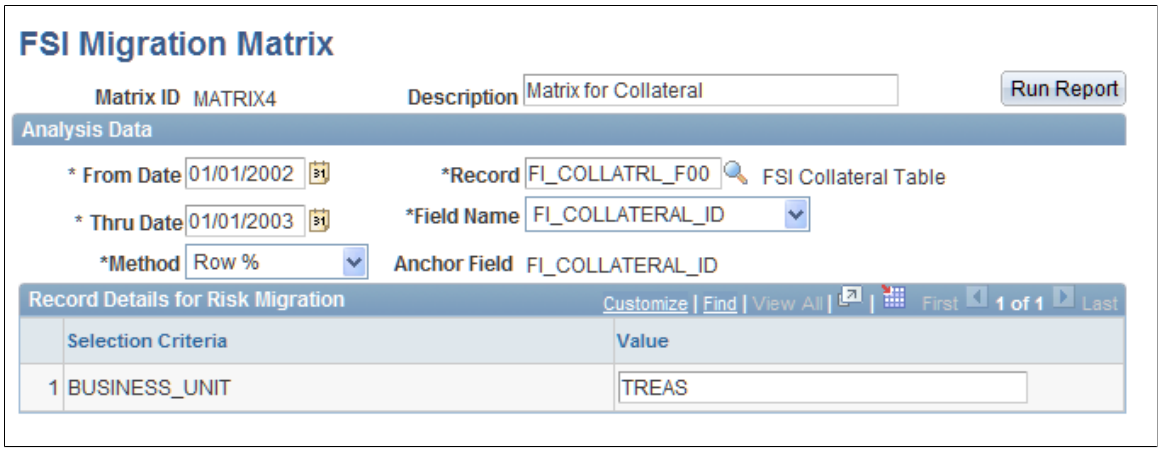
Navigation

Financial Services Industries, Reports, Risk-Weighted Capital, FSI Migration Matrix

Image: FSI Migration Matrix page

This example illustrates the fields and controls on the FSI Migration Matrix page. You can find definitions for the fields and controls later on this page.



From Date andThru Date Enter the date range for which you want to view the data.

Record andField Name Select the table (record) and the field name that you want to view.

Method Select how you want the grid to display the change in data. Options are: *Column %, Count, Overall %,* and *Row %.*

Anchor Field Displays the dimension across which your query is operating. The anchor is the primary unchanging element in the data that you are analyzing. For example, an anchor field might be *FI_FACILITY_ID, FI_INSTRUMENT_ID,* or*FI_COLLATERAL_ID.* The system then displays the migration of values within your date range for all facilities, instruments, or collateral IDs in the chosen table.

Click Run Report to view the resulting grid:

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Appendix B

Working with the Regulatory Reporting Center

Overview

PeopleSoft has an interface from Enterprise Performance Management (EPM) to FRS, a third party profitability and regulatory reporting solution. The FRS regulatory reporting system takes data from a bank's System of Record (SOR) and converts it to the required format and structure for reporting to regulatory agencies.

With this module, PeopleSoft delivers a set of components that allow you to map general ledger account and instrument balances into legal/regulatory reporting business units (RBUs) and assign FRS product

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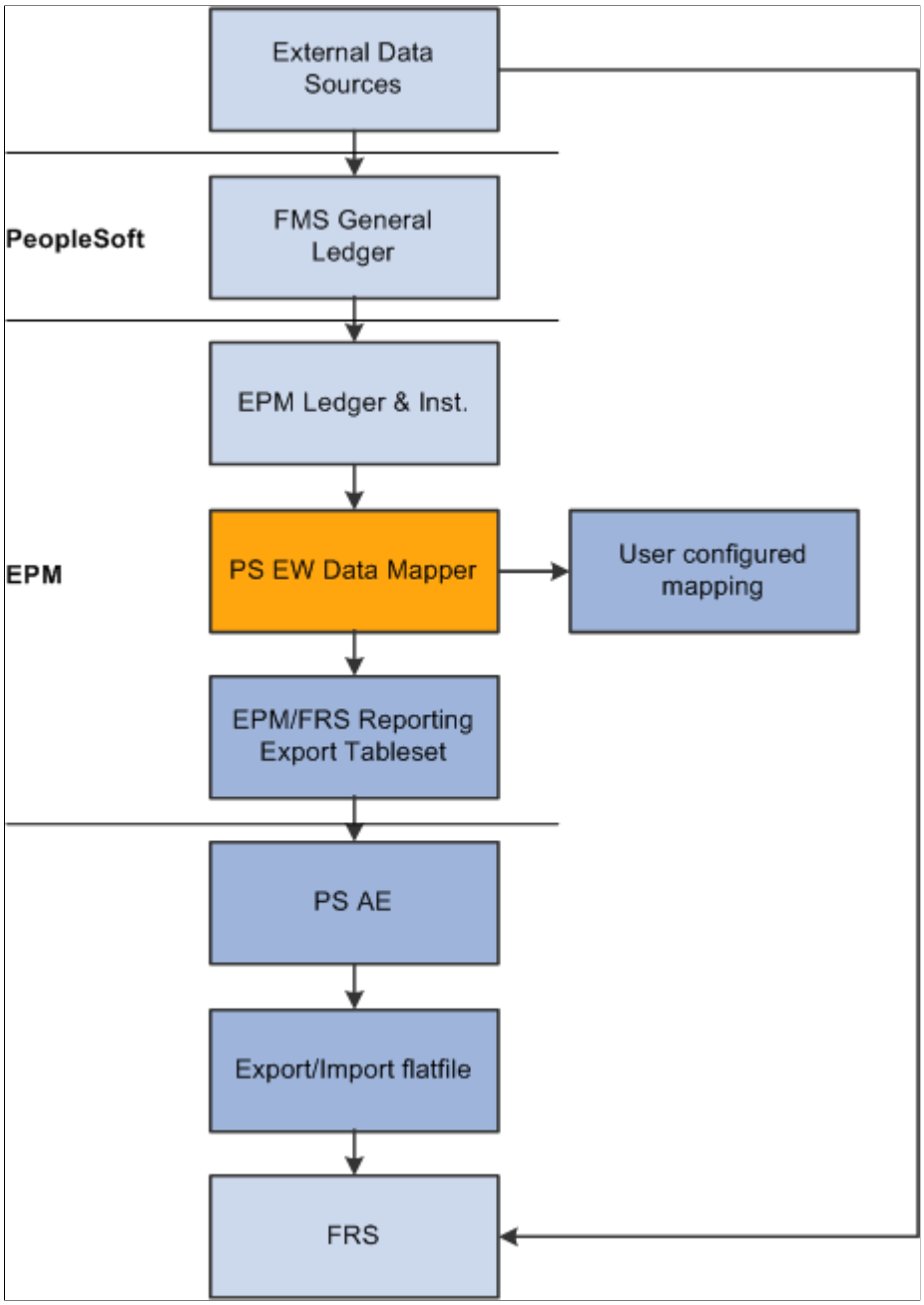
and type (profit/loss) codes. The resultant mapped records then are available to FRS via a PeopleSoft generated file.

Image: Data processing flow overview

The following high-level diagram highlights the overall data processing flow and functionality. The objects in gray represent new elements comprising this new module.



The External Data Sources object represents the System of Record as well as any other external sources of financial and relationship data.

The User Configured Mapping represents the module that allows you to define the mapping of your ledger and instrument balances into FRS product, type (profit/loss) codes and regulatory reporting business units.

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PeopleSoft supplies a set of export tables suitable for import into FRS.

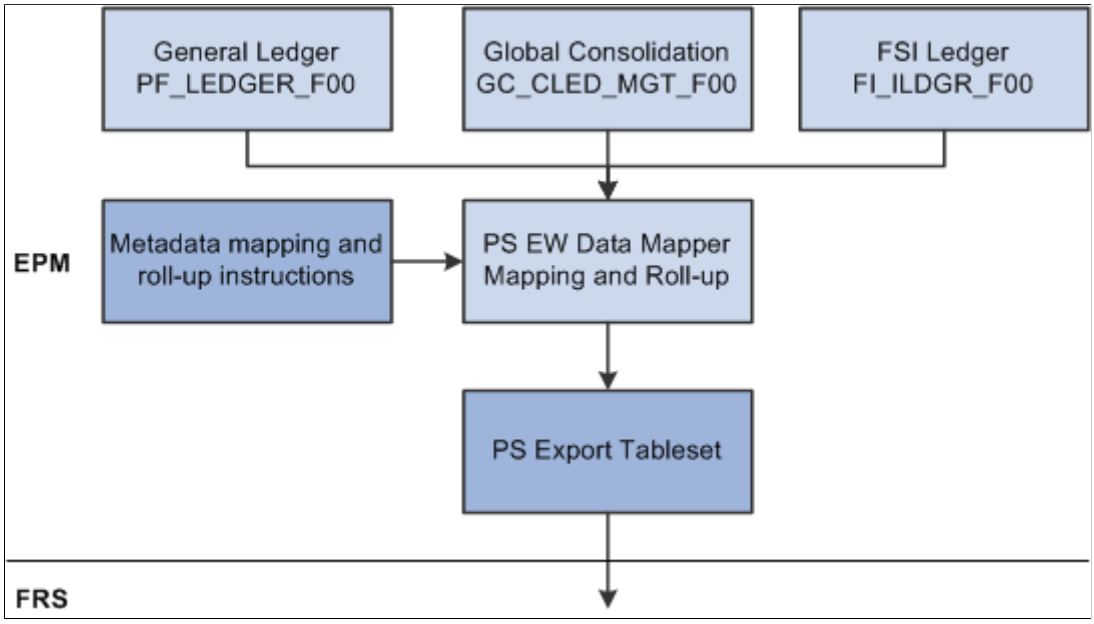
Features

The features of the Regulatory Reporting Center allow you to:

- Map to PS ledger accounts and instrument balances into legal/regulatory reporting business units, and into FRS product and type (profit/loss) codes.
- Use Application Engine programs to populate PS defined Report Export tables with data from PS ledger accounts and instrument balances based on implementation defined maps.
- Generate ASCII flat files suitable for import into FRS.
- Use pages to enter and maintain FRS product and type (profit/loss) codes.
- Use a set of pages to review the results prior to posting to FRS.
- Assign records for either 1:1 mapping or aggregation by legal/regulatory reporting business units which may, or may not, correspond to the business unit used for internal purposes.

Image: Detailed data flow

The following flowchart displays the data flow in greater detail.



The system processes *only one* of the following source tables for a given run:

- PS General Ledger (PF_LEDGER_F00)
- Global Consolidation (GC_CLED_MGT_F00)
- FSI Ledger (FI_ILDGR_F00)

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The Regulatory Reporting Center

Use the Regulatory Reporting Center page.

Navigation

Main Menu, Financial Services Industries, Regulatory Reporting Center.

Product Codes

The PeopleSoft Regulatory Reporting Center includes all 635 FRS Product Codes pre-loaded. To accommodate new codes and changes, the system allows you to edit the codes.

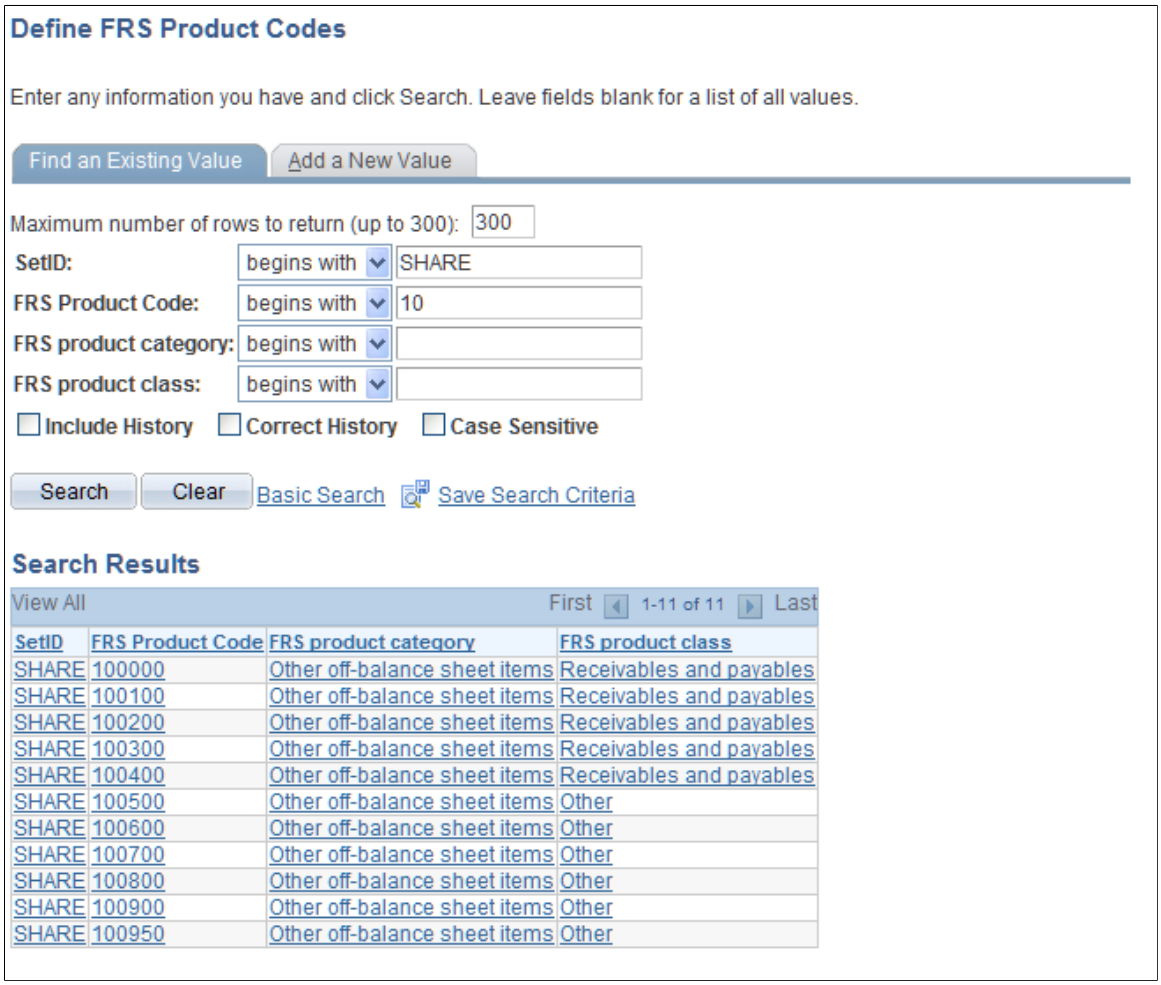
Use the FRS Product Codes page (FI_PRODUCT_PG) to maintain FRS product classification codes.

Navigation

Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Product Codes

Image: Define FRS Product Codes search page

This example illustrates the fields and controls on the Define FRS Product Codes search page. You can find definitions for the fields and controls later on this page.



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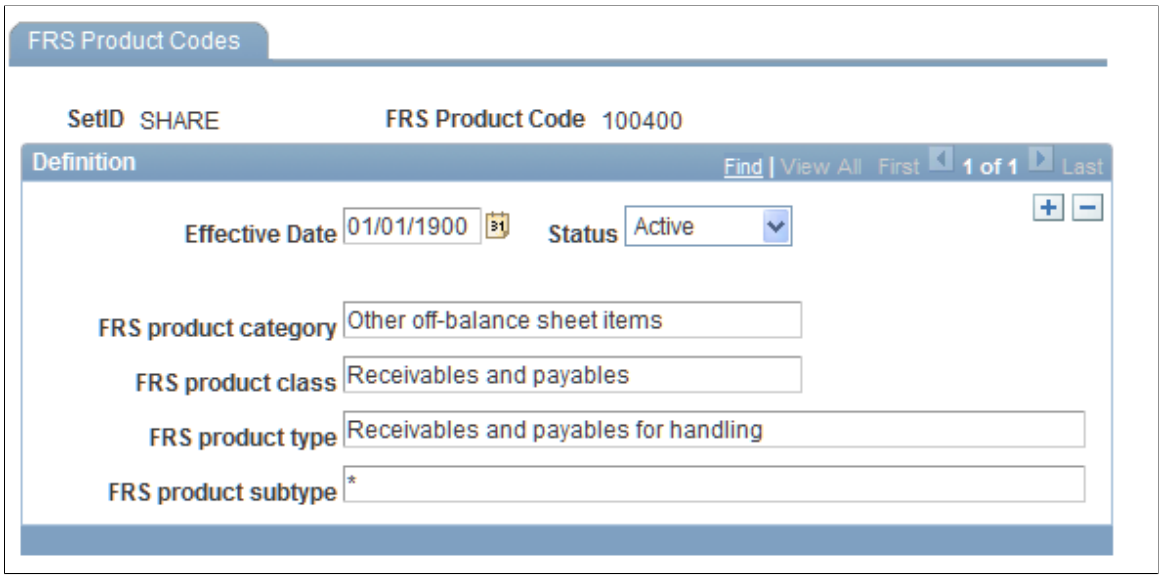
Note: You can retrieve FRS product codes by product: code, category, or class.

Image: FRS Product Codes page

This example illustrates the fields and controls on the FRS Product Codes page. You can find definitions for the fields and controls later on this page.



Note: All product codes are effective-dated.

Profit/Loss Codes

Like the FRS Product Codes, PeopleSoft has already loaded all 126 FRS Profit/Loss codes. And like the product codes, the FRS P/L code list can be edited.

Use the Profit/Loss Codes page (FI_PL_CLASS_PG) to maintain FRS profit/loss class codes.

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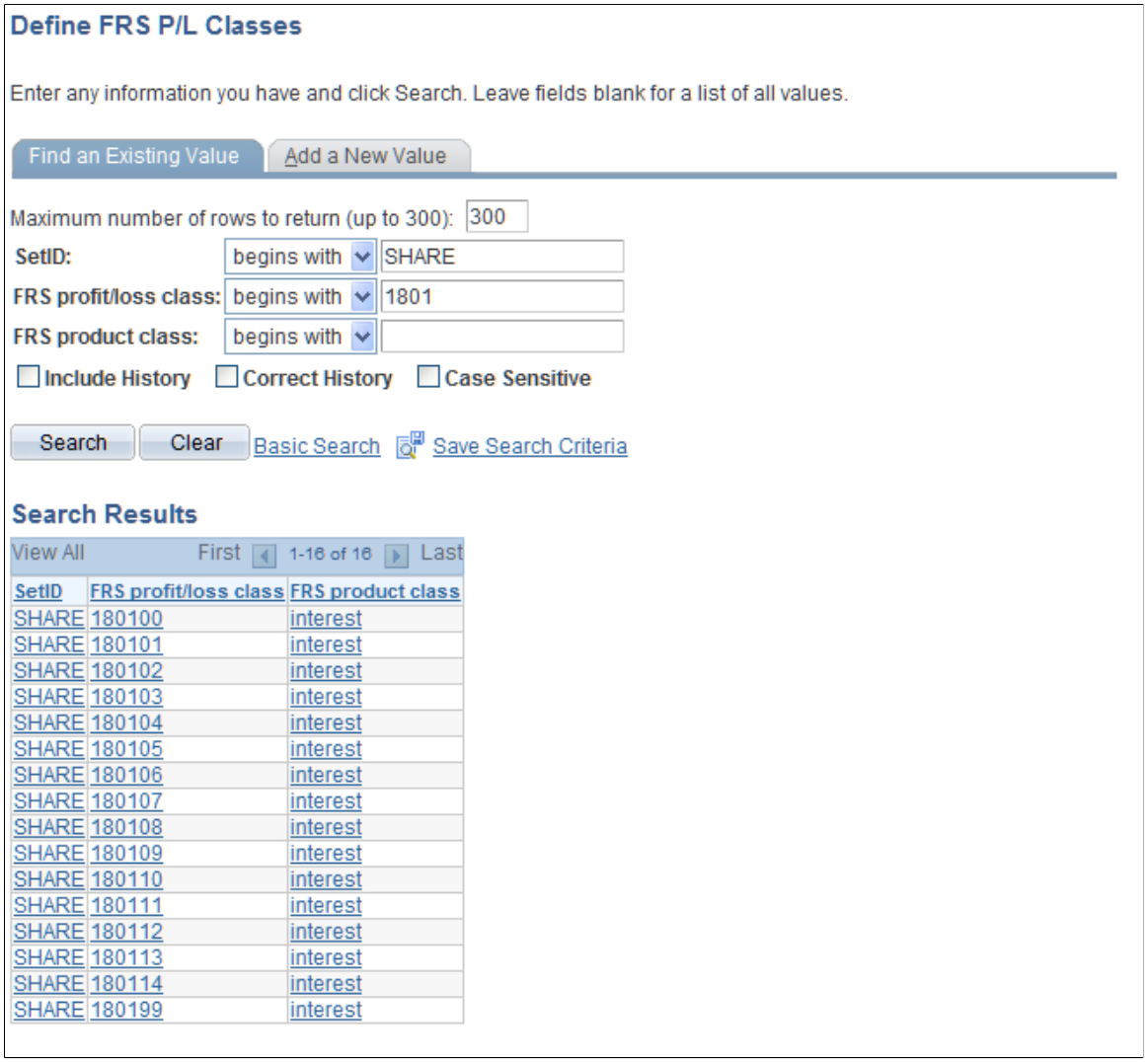
Navigation

Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Profit/Loss Codes

Image: Define FRS P/L Classes search page

This example illustrates the fields and controls on the Define FRS P/L Classes search page. You can find definitions for the fields and controls later on this page.



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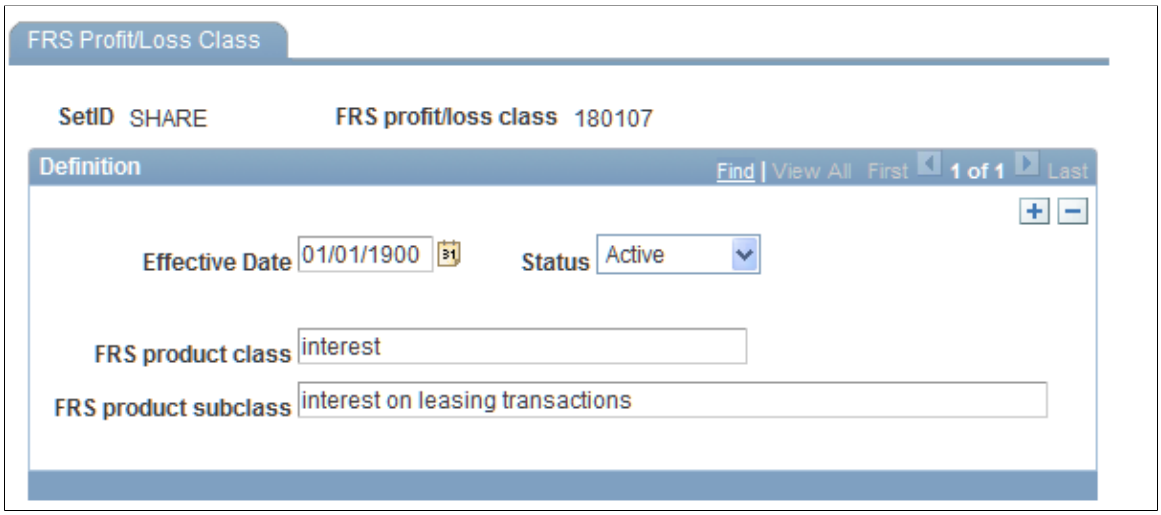
Note: You can retrieve FRS P/L Codes by product: code or class.

Image: FRS Profit/Loss Class page

This example illustrates the fields and controls on the FRS Profit/Loss Class page. You can find definitions for the fields and controls later on this page.

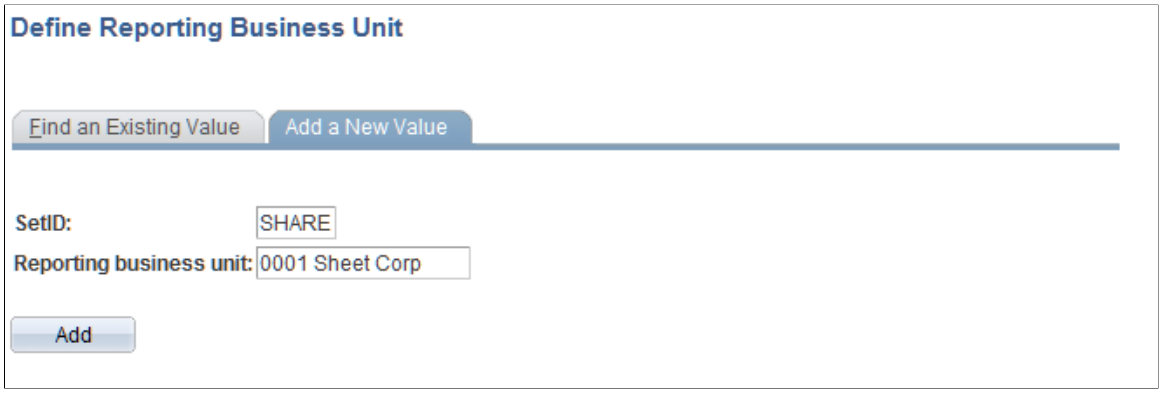


Note: Like FRS Product Codes, FRS Profit/Loss Codes are effective-dated.

Regulatory Reporting Business Units (RBUs)

Image: Define Reporting Business Unit search page

This example illustrates the fields and controls on the Define Reporting Business Unit search page. You can find definitions for the fields and controls later on this page.



Use the Reporting Business Unit page (FI_BUS_UNIT_PG) to maintain reporting business unit records.

Navigation

Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Reporting Business Unit

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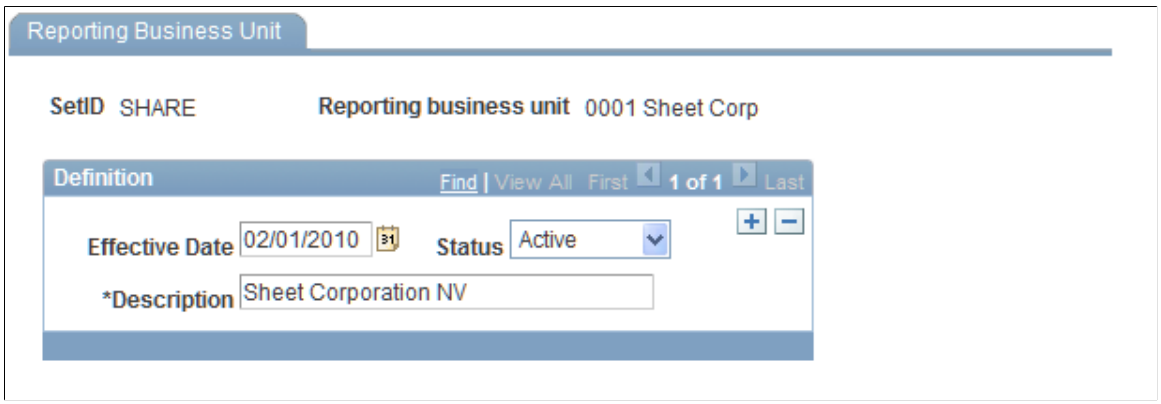
Select the Add a New Value tab to add a new regulatory reporting business unit. For the purposes of this example, you'll create a new regulatory reporting business unit to track one of your legal entities, in this case a RBU called 001 Sheet Corp.

Image: Reporting Business Unit page

This example illustrates the fields and controls on the Reporting Business Unit page. You can find definitions for the fields and controls later on this page.



Click the Save button to save your newly-defined entry.

Instrument Level

Use the Instrument Level page.

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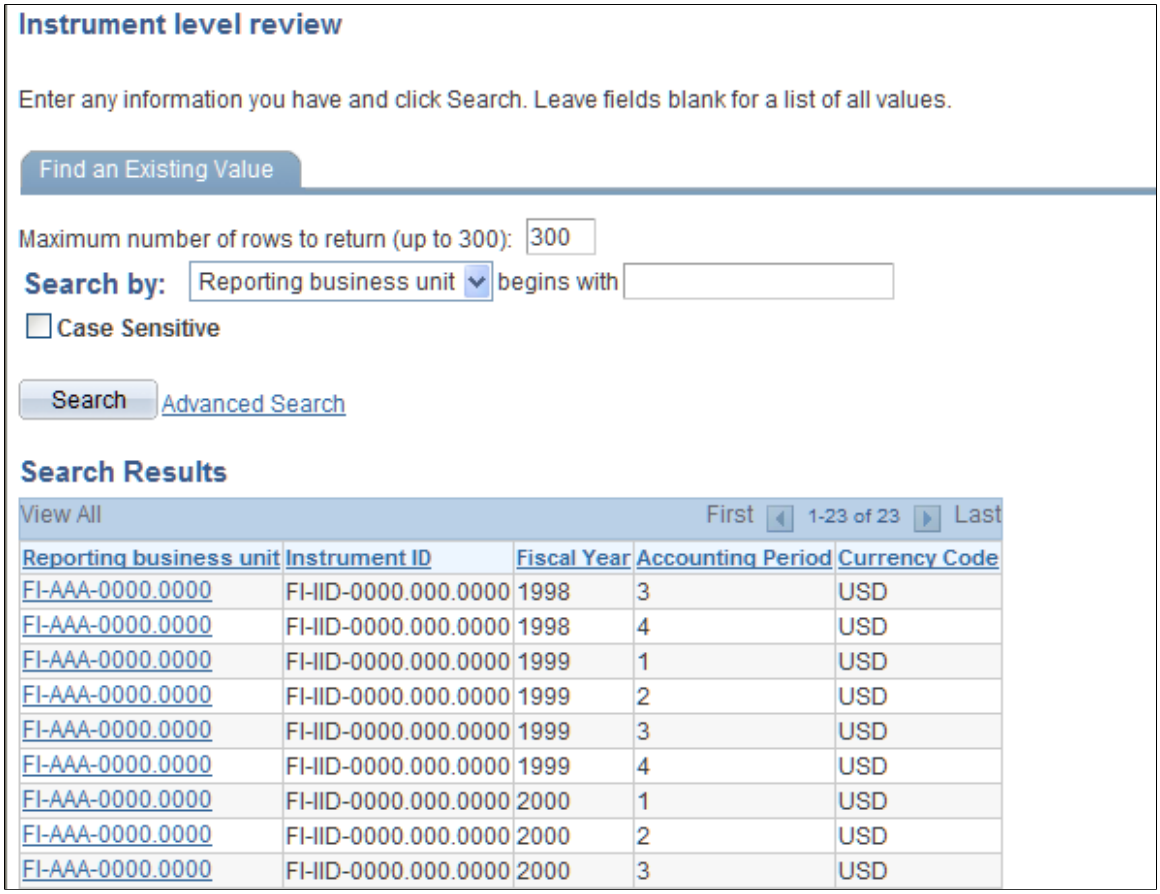
Navigation

Main Menu, Financial Services Industries, Regulatory Reporting Center, Results, Instrument Level

Image: Instrument Level Review search page

This example illustrates the fields and controls on the Instrument Level Review search page. You can find definitions for the fields and controls later on this page.



Reporting business unit	Instrument ID	Fiscal Year	Accounting Period	Currency Code
FI-AAA-0000.0000	FI-IID-0000.000.0000	1998	3	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	1998	4	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	1999	1	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	1999	2	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	1999	3	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	1999	4	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	2000	1	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	2000	2	USD
FI-AAA-0000.0000	FI-IID-0000.000.0000	2000	3	USD

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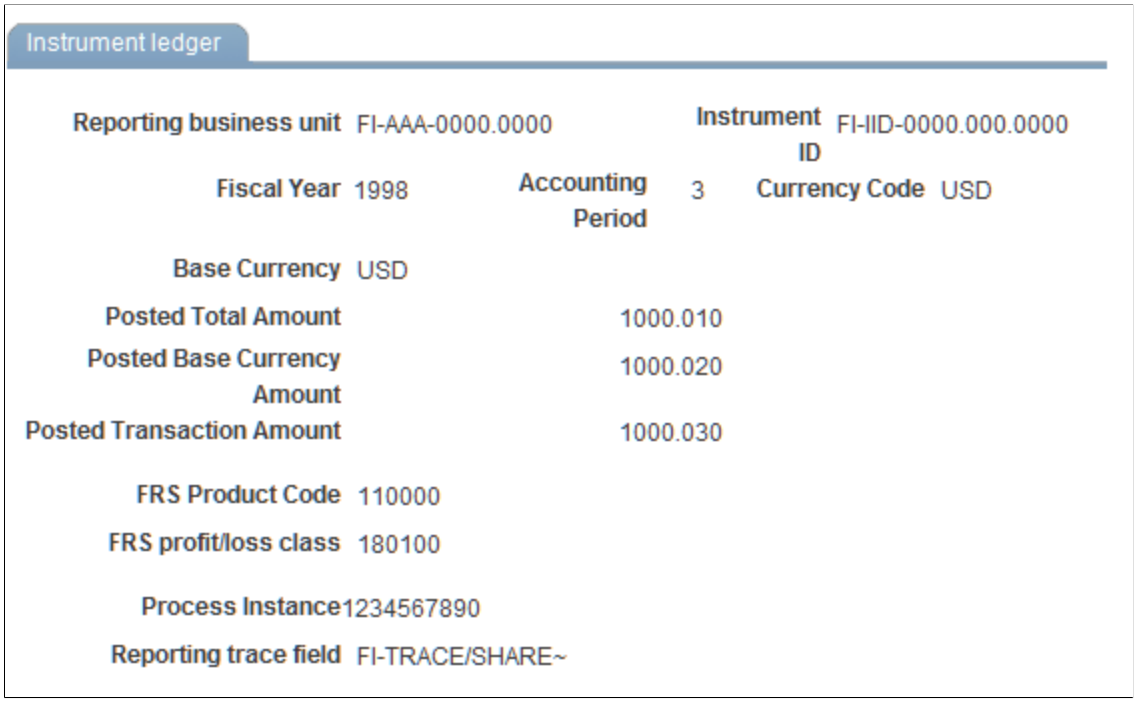
Image: Instrument Level page

This example illustrates the fields and controls on the Instrument Level page. You can find definitions for the fields and controls later on this page.



Note: You can click the Previous in List andNext in List buttons to move through the list.

Performance Ledger

Use the Ledger balances page (FI_RLEDGER_F00_PG) to view the output of Performance Ledger (PF_LEDGER_F00) processing.

PF_LEDGER_F00 is the primary enterprise performance measurement fact table. Used to aggregate measures like Net Revenue, Direct Costs, and Overhead Costs.

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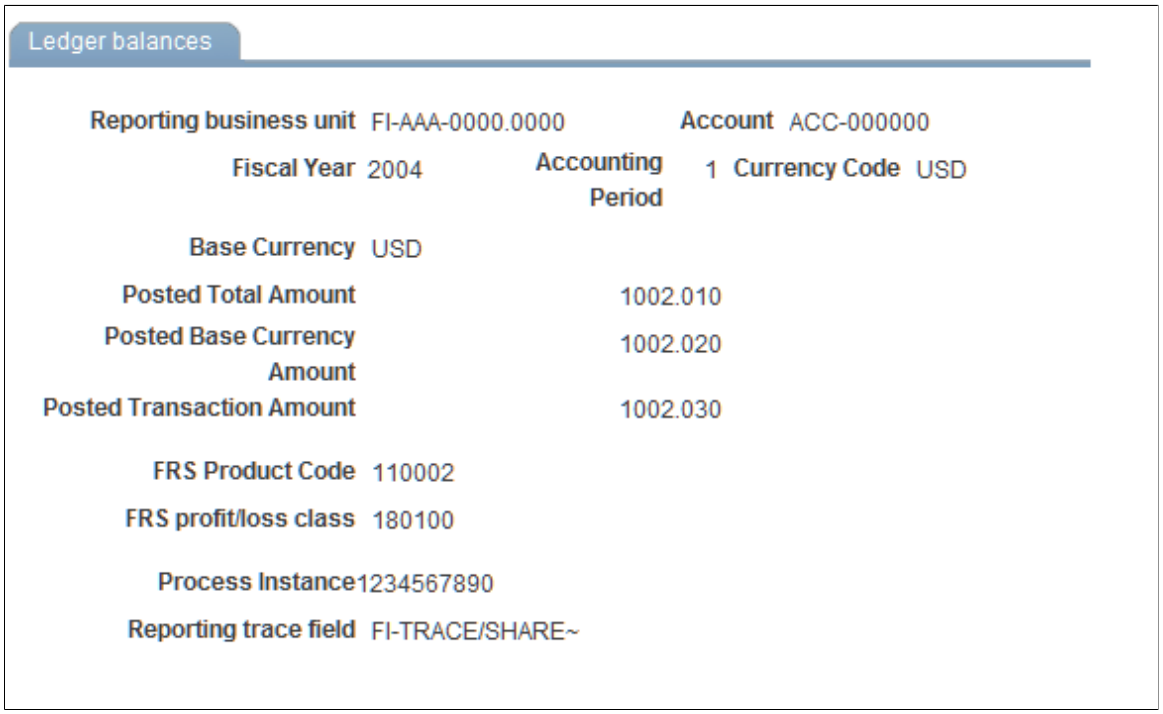
Navigation

Financial Services Industries, Regulatory Reporting Center, Results, Performance Ledger, Ledger balances

Image: Ledger Balances page

This example illustrates the fields and controls on the Ledger Balances page . You can find definitions for the fields and controls later on this page.



Global Consolidation

Use the Global Consolidations Ledger page (FI_RCLEDMGT_F00_PG) to view the output of the Global Consolidations (GC_CLED_MGT_F00) processing.

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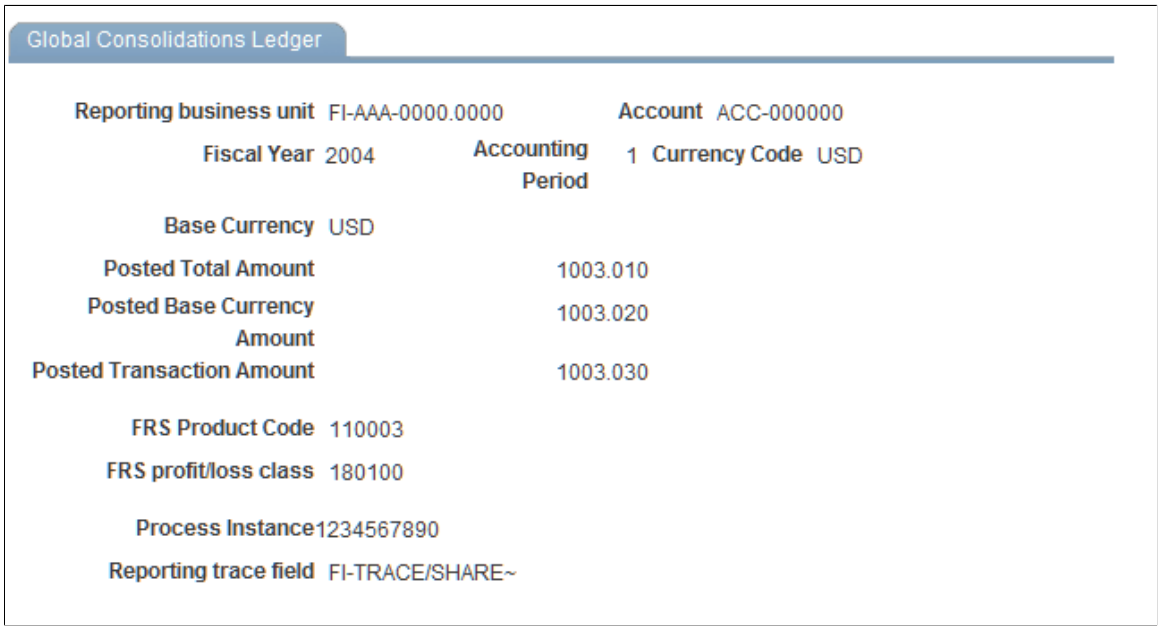
Navigation

Financial Services Industries, Regulatory Reporting Center, Results, Global Consolidation, Global Consolidations Ledger

Image: Global Consolidations Ledger page

This example illustrates the fields and controls on the Global Consolidations Ledger page. You can find definitions for the fields and controls later on this page.



Generating Regulatory Reporting Export Files

The FRS Connector is essentially a set of three stage AE processes consisting of a Data Mapper stage, an AE job to roll-up accounts by regulatory reporting business units, and an AE job to generate the resulting

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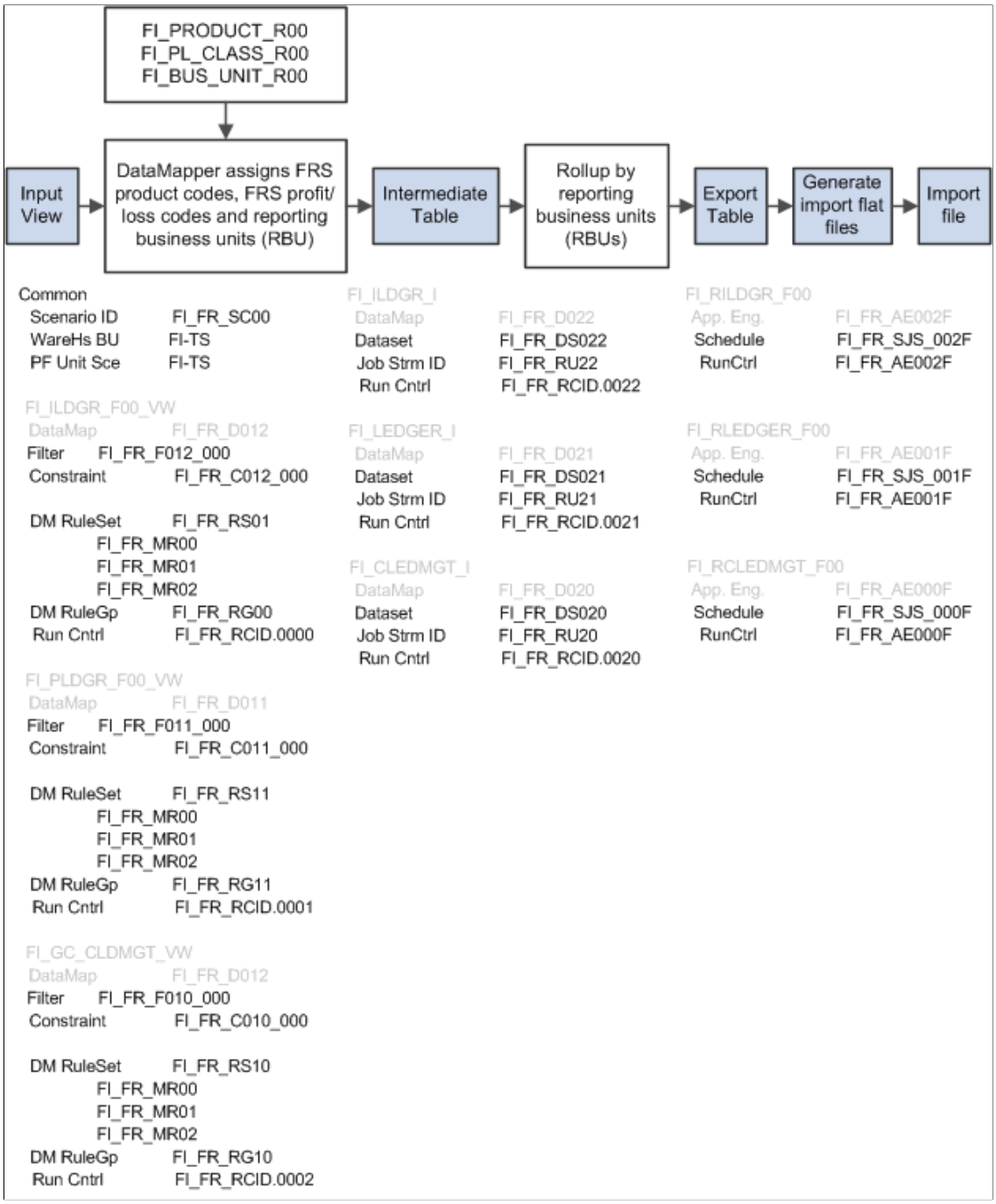
import files. Basically the job begins with one of the three views as input and results in one of three import flat files.

Image: The FRS Connector process flow and implementation-required metadata definitions.

In the following diagram, items in gray text are predefined. Items in black text need to be defined as part of an implementation.



Predefined		
Ledger Type	Source View	Output Files

Predefined		
FSI Instrument Ledger	FI_ILDGR_F00_VW	FI_RILDGR_F00.CSV
PS General Ledger	FI_PLDGR_F00_VW	FI_RLEDGER_F00.CSV
Global Consolidation	FI_GC_CLDMGT_VW	FI_RCLEDMGT_F00.CSV

Example of Implementation—Defined Run Controls			
Ledger Type	Data Mapper Job	RBU Roll-Up Job	Output File Generator
FSI Instrument Ledger	FI_FR_RCID.0000	FI_FR_RCID.0022	FI_FR_AE002F
PS General Ledger	FI_FR_RCID.0001	FI_FR_RCID.0021	FI_FR_AE001F
Global Consolidation	FI_FR_RCID.0002	FI_FR_RCID.0020	FI_FR_AE000F

Steps to generating export files for regulatory reporting systems

Initial Implementation and infrequent changes:

1. Ensure that FRS Product and Profit/Loss code lists are current for your implementation.
2. Define regulatory RBUs.
3. Ensure that any and all Performance and Warehouse business units are defined.
4. Define any and all scenarios that will be associated with the export runs.
5. Define any and all filters and constraints for: PS General Ledger (DataMap: FI_FR_D011), Global Consolidation (DataMap: FI_FR_D010) and FSI Ledger (DataMap: FI_FR_D012).
6. Define Data Mapper Rule Sets.
7. Define Data Mapper Value Mappings (if required).
8. Define Data Mapper Rule Groups.
9. Define all metadata Data Sets for roll-ups by RBU.
10. Define Run Control Templates for Data Mapper and RBU roll-ups.
11. Set Data Mapper Run Control Values corresponding to the Run Control Templates.
12. Set Regulatory Reporting Center Runtime Parameters corresponding to the RBU roll-up Run Control Templates.
13. Define Process Scheduler processes and jobs for generating import files from the export tables.

For each run:

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1. Run the Data Mapper job for the source table, period, regulatory RBU and ledger (that is, FI_FR_RCID.0000, FI_FR_RCID.0001 or FI_FR_RCID.0002).

   Note: Since non-RBUs (performance business units) might have a many-to-one relationship to the RBU, you might have to run the Data Mapper more than once (that is, once for each BU in a RBU) prior to running the RBU roll-up job.

2. Run the corresponding RBU roll-up (that is, FI_FR_RCID.0022, FI_FR_RCID.0021 or FI_FR_RCID.0020).
3. Review the resulting RBU roll-ups. (optional)
4. Run the corresponding import file generating AE (that is, FI_FR_AE002F, FI_FR_AE001F or FI_FR_AE000F).

For the purposes of illustration, this document will provide an example covering steps 6 - 13 (in the *Initial Implementation and infrequent changes* section) and 1 - 4 (in the*For each run* section). The example will not cover steps 1 - 5 (in the*Initial Implementation and infrequent changes* section) as they are covered in detail in other PeopleSoft documents. For each of the following predefined datamaps, at least one constraint must be defined:

Predefined		
Ledger Type	Source DataMap	Target DataMap
FSI Instrument Ledger	FI_FR_D012	FI_FR_RCID.0022
PS General Ledger	FI_FR_D011	FI_FR_RCID.0021
Global Consolidation	FI_FR_D010	FI_FR_RCID.0020

Defining Data Mapper Rule Sets

Use the Data Mapper Rule Set page.

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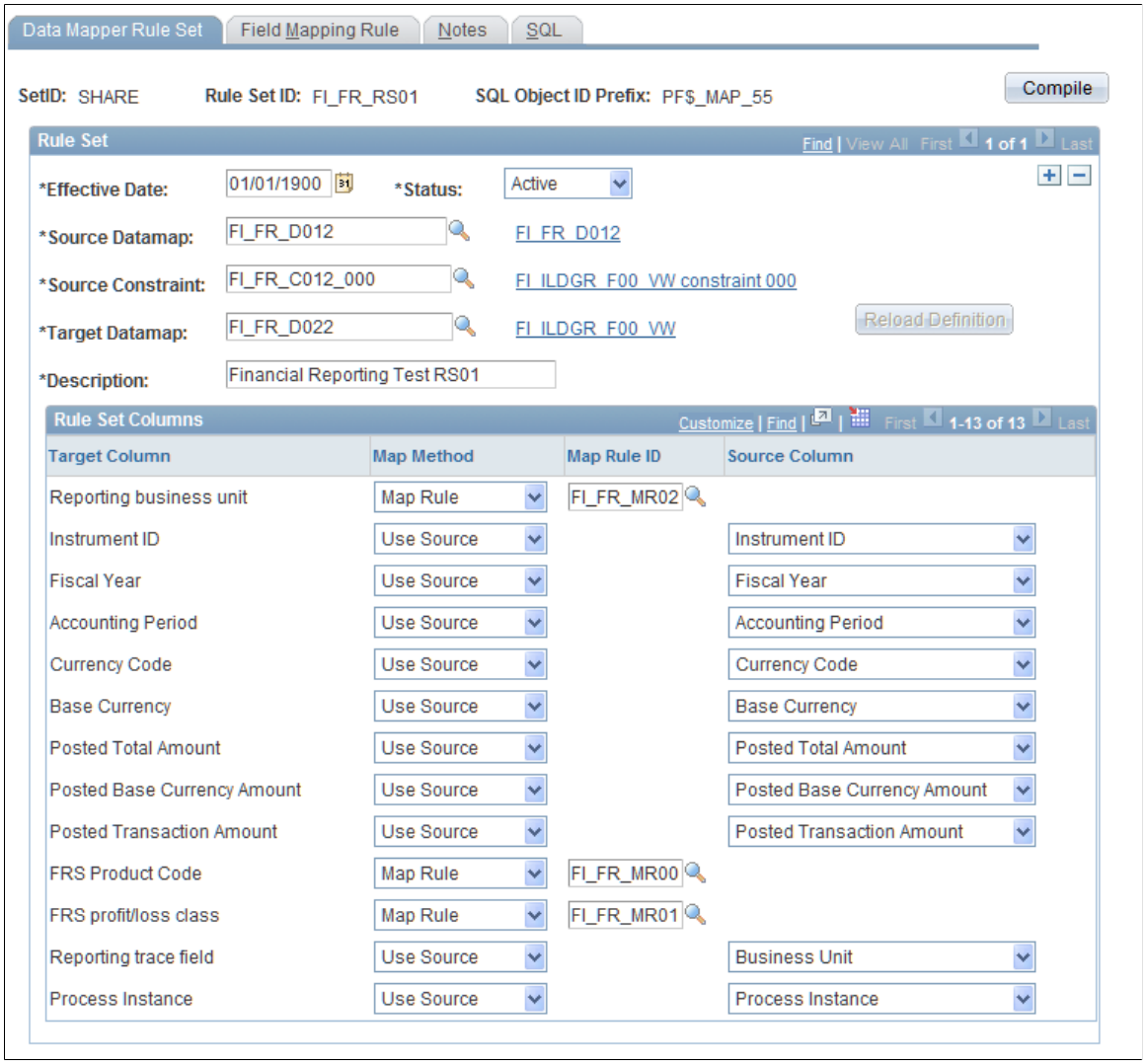
Navigation

Main Menu, EPM Foundation, Data Enrichment Tools, Data Mapper, Rule Set, Data Mapper Rule Sets.

Image: Data Mapper Rule Set page

This example illustrates the fields and controls on the Data Mapper Rule Set page. You can find definitions for the fields and controls later on this page.



For FSI Instrument Ledger, select the predefined *FI_FR_D012* and*FI_FR_D022* datamaps for theSource Datamap andTarget Datamap fields, respectively.

Predefined		
Ledger Type	Source Datamap	Target Datamap
FSI Instrument Type	FI_FR_D012	FI_FR_D022
PS General Ledger	FI_FR_D011	FI_FR_D021
Global Consolidation	FI_FR_D010	FI_FR_D020

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Note: Since the Reporting business unit,FRS Product Code, andFRS profit/loss class fields in theTarget Column do not have a correspondingSource Column, you need to specify either a mapping rule or a list. You can select theField Mapping Rule tab to define a mapping rule.

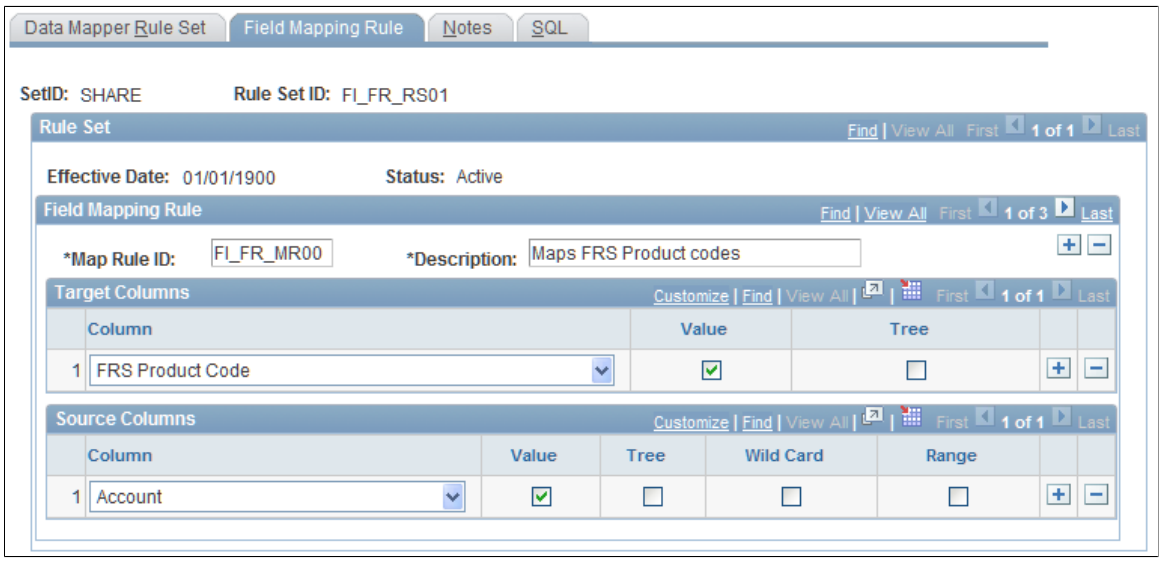
Use the Field Mapping Rule page.

Navigation

Main Menu, EPM Foundation, Data Enrichment Tools, Data Mapper, Rule Set, Field Mapping Rule.

Image: Field Mapping Rule

This example illustrates the fields and controls on the Field Mapping Rule. You can find definitions for the fields and controls later on this page.



For this example, you'll associate the *FRS Product Code* field in theTarget Columns field with the*Account* field from theSource Columns. Later you will map specific values between the two columns. Then click the+ to continue and do the same to associate*FRS Profit/Loss Classes* and*Reporting Business Units* with columns from the source datamap. Finally, clickSave to save the Data Mapper Rule Set definition.

Defining Data Mapper Rule Sets

Use the Data Mapper Value Mappings page from Main Menu, EPM Foundation, Data Enrichment Tools, Data Mapper, Value Mappings.

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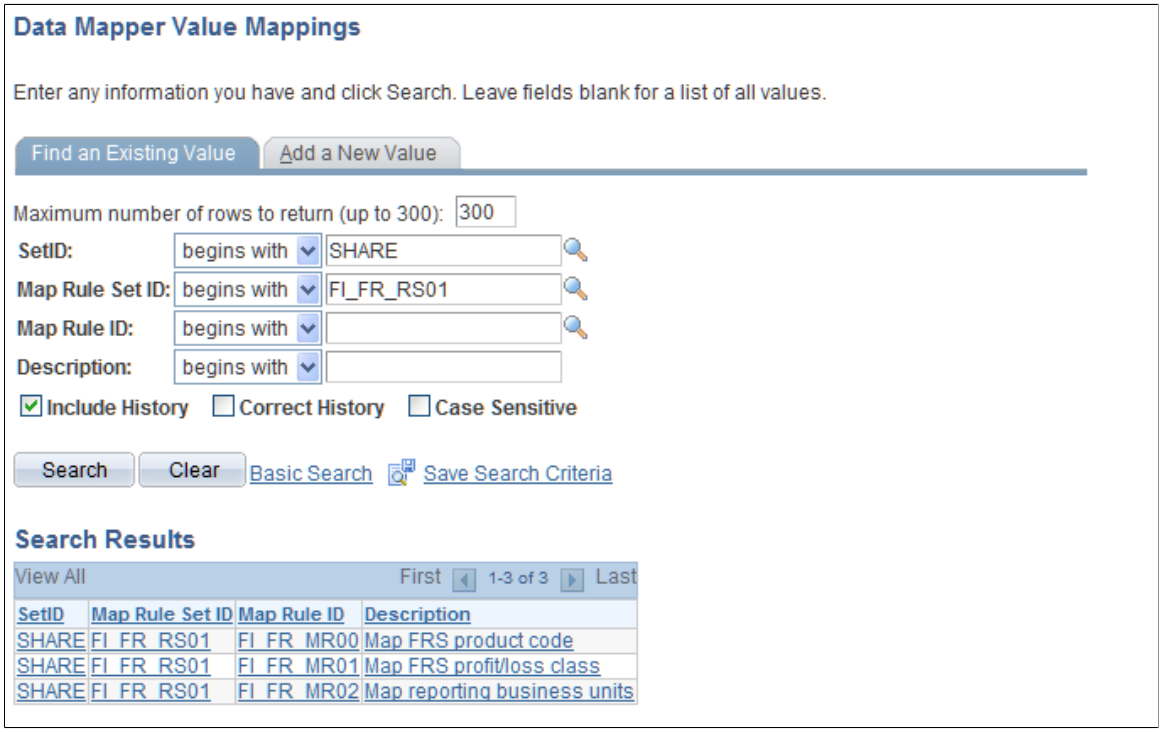
Value Mappings assign specific Target Column values based on values present in the Source Column.

Image: Look Up Map Rule ID search page

This example illustrates the fields and controls on the Look Up Map Rule ID search page. You can find definitions for the fields and controls later on this page.



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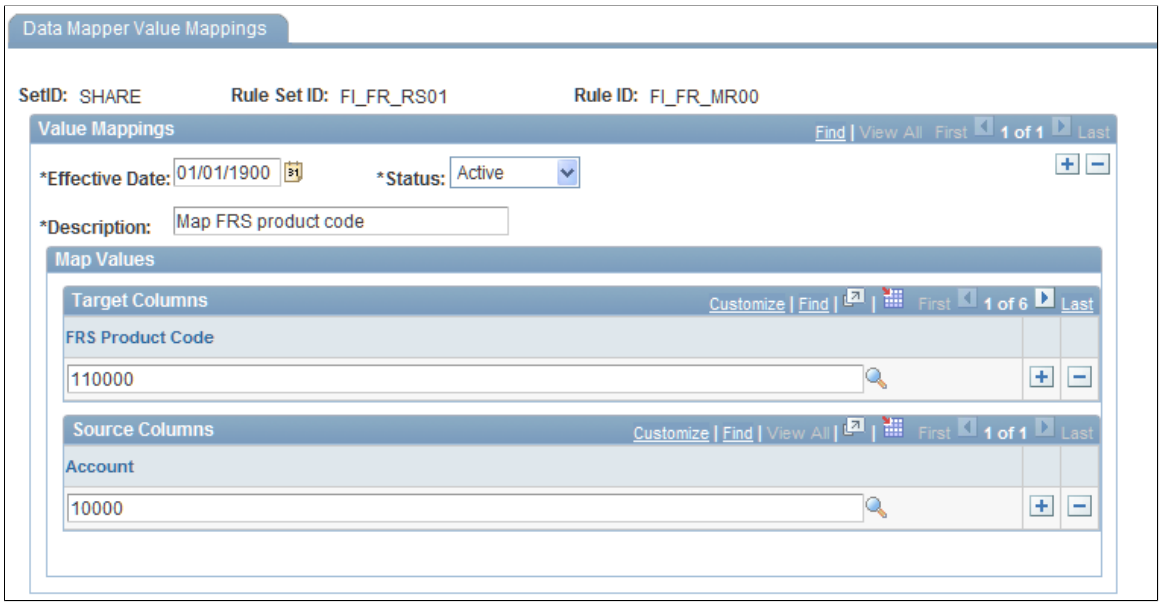
Note: Looking up your previously defined Map Rules in your Map Rule Set, select *FI_FR_MR00.*

Image: Data Mapper Value Mappings page

This example illustrates the fields and controls on the Data Mapper Value Mappings page. You can find definitions for the fields and controls later on this page.



In this instance, the system associates a value of *10000* in theAccount column of the source datamap to a value of*110000* in theFRS Product Code column of the target datamap. The Data Mapper processes rows every time it encounters a row with a value of*10000* in theAccount field of the source table and it places a value of*110000* in theFRS Product Code field of the target table. Continue this pattern, mapping all expected Account values in the Source datamap to*FRS Product Code* values in the target datamap.

Defining Data Mapper Rule Groups

After defining Rules, Rule Sets and any necessary value maps, you must define rule groups.

Use the Data Mapper Rule Group.

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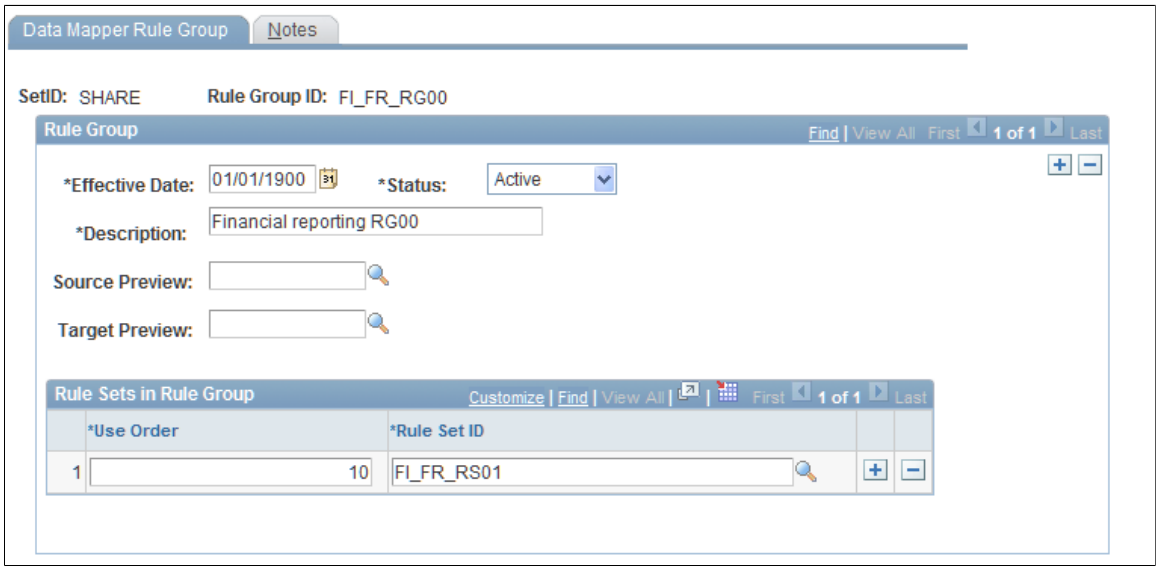
Navigation

Main Menu, EPM Foundation, Data Enrichment Tools, Data Mapper, Rule Group, Data Mapper Rule Group.

Image: Data Mapper Rule Group page

This example illustrates the fields and controls on the Data Mapper Rule Group page. You can find definitions for the fields and controls later on this page.



Note: You define a new Data Mapper Rule Group *FI_FR_RG00.* This rule group contains the previously defined Rule Set*FI_FR_RS01.*

.

Defining MetaData Sets to be Used to Generate Roll-Ups by RBU

Use the DataSet page.

Navigation

Main Menu, EPM Foundation, Foundation Metadata, Metadata Creation and Editing, DataSet

Use datasets to specify how records are totalled into corresponding RBUs based on your previously defined Data Mapper definitions.

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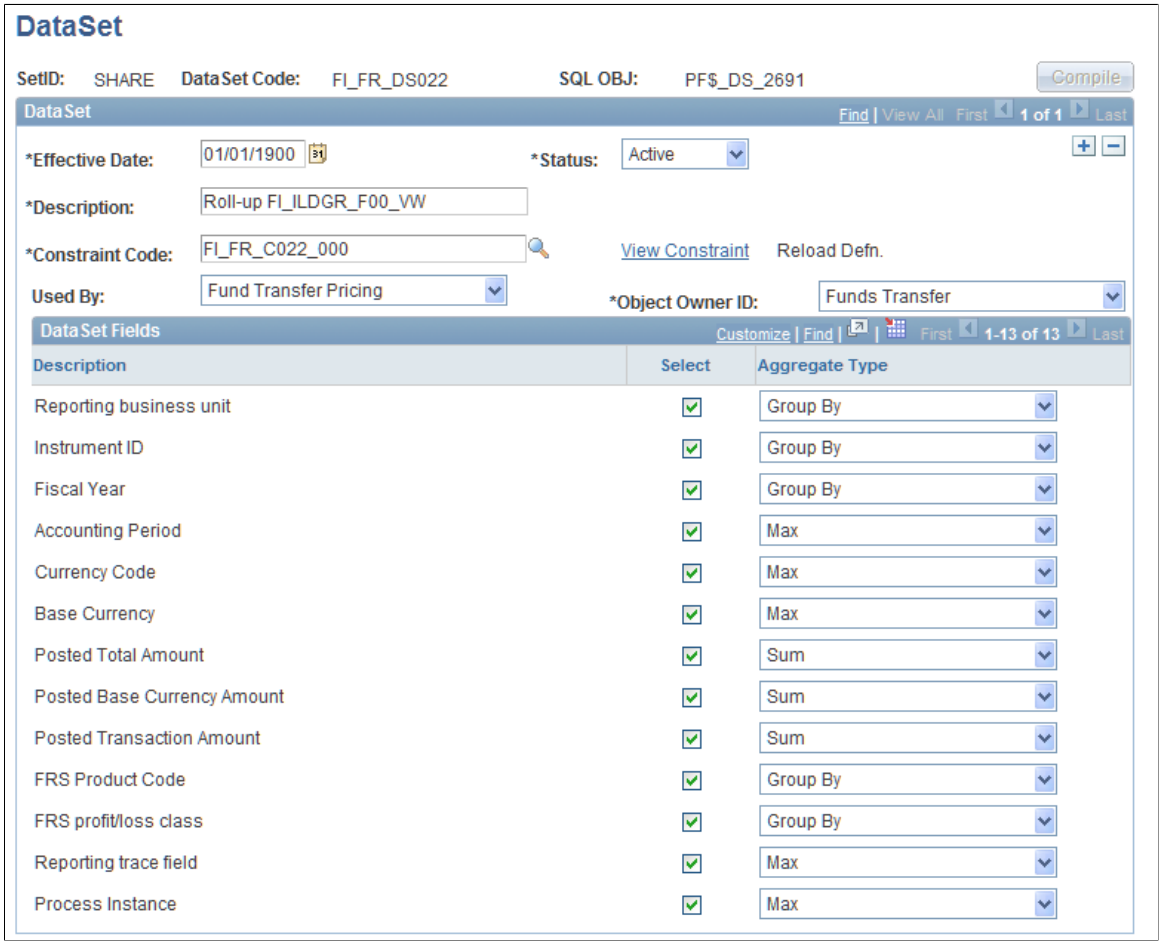
See "Using Data Sets *(PeopleSoft 9.1: Enterprise Performance Management Fundamentals)*".

Image: DataSet page

This example illustrates the fields and controls on the DataSet page. You can find definitions for the fields and controls later on this page.



For FSI Instrument Ledger, you select the predefined *FI_FR_C022_000* constraint for theConstraint field. This brings up a list of all predefined fields. You then assign Aggregate Types to set the RBU summation policy.

Note: You need to select *every* field for inclusion.

Ledger Type	***Predefined Constraint***
FSI Instrument Ledger	FI_FR_C022_000
PS General Ledger	FI_FR_C021_000
Global Consolidation	FI_FR_C020_000

Defining Run Control Templates for Data Mapper and RBU Roll-Up Stages

Use the Run Jobstream page (RUN_PF_JOBSTREAM) to run jobstreams automatically and in sequence.

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Each job in the jobstream initiates automatically after the previous job completes.

Navigation

Financial Services Industries, Analysis and Processing, Run Engines, Run Jobstreams, Run Jobstream

Assign the Run Control for the Data Mapper job. Set the Unit to the previously defined regulatory reporting business unit (RBU). Set theScenario ID to the previously defined scenario. Set theFiscal Year to the fiscal year of the data to be mapped. SetPeriod to the period to be used to filter source records for summation into the RBU.

Note: Set the Jobstream ID to the predefined*FI_FR_JM00* job stream. Use this job stream for all three ledger types.

Now that you have defined the Run Control for the Data Mapper, you will need to define a Run Control for RBU roll-up. Define the Run Controls for the RBU roll-up on the Run Jobstream page.

Set the Unit,Scenario ID,Fiscal Year, andPeriod fields to the same values as the previously defined Run Control to be used by the Data Mapper. Unlike the Run Control used by the Data Mapper, you specify a different Jobstream depending on the ledger you're processing. For this FSI Instrument Ledger example, you specify*FI_FR_RU22* for the Jobstream.

Ledger Type	***Predefined Jobstream***
FSI Instrument Ledger	FI_FR_RU22
PS General Ledger	FI_FR_RU21
Global Consolidation	FI_FR_RU20

Setting Data Mapper Run Control Values

Access the Run Group page from Main Menu, EPM Foundation, Data Enrichment Tools, Data Mapper, Run Control Values, Run Group.

Here you assign the previously defined Rule Group to the Run Control that will be used to run the Data Mapper.

Setting Regulatory Reporting Center Runtime Parameters

Use the Roll-up runtime parameters page (FI_FR_ROLLUP_PARM) to enter the runtime parameters for financial roll up reporting.

Navigation

Financial Services Industries, Regulatory Reporting Center, Reporting Setup, Runtime Parameters, Roll-up runtime parameters

Assign the previously defined DataSet *FI_FR_DS022* to the Run Control that will be used to run the RBU Roll-up stage.

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Defining Process Scheduler Processes and Jobs

Use the Process Definition page.

Navigation

Main Menu, PeopleTools, Process Scheduler, Processes, Process Definition Define a new Application Engine process *FI_FR_AE002F.*

Use the Process Definition Options page.

Navigation

Main Menu, PeopleTools, Process Scheduler, Processes, Process Definition Select on the Process Definition Options tab, assign*ALLPNLS* toProcess Groups.

Ledger Type	***Predefined AE Job***
FSI Instrument Ledger	FI_FR_AE002F
PS General Ledger	FI_FR_AE001F
Global Consolidation	FI_FR_AE000F

Access the Job Definition page from Main Menu, PeopleTools, Process Scheduler, Jobs, Job Definition.

Assign *Application Engine* toProcess Type and the predefined Application Engine program *FI_FR_AE002F* toProcess Name.

Access the Job Definitions Options page from Main Menu, PeopleTools, Process Scheduler, Jobs, Job Definition Options.

Select the Job Definition Options tab, assign*ALLPNLS* toProcess Groups.

Access the Schedule JobSet Definition page from Main Menu, PeopleTools, Process Scheduler, Schedule JobSet, Schedule JobSet Definition.

Specify the previously defined job: *FI_FR_02.*

Generating Instrument Level Export File

To generate the Instrument Level Export File, run the following implementation defined jobs:

1. *FI_FR_RCID.0000* – Data Mapper job for the source table, period, regulatory reporting business unit and ledger.

   Note: Since non-RBUs (performance business units) might have a many-to-one relationship to the RBU you might have to run the Data Mapper more than once (that is, once for each BU in a RBU) prior to running the RBU roll-up job.

2. *FI_FR_RCID.0022* – The corresponding RBU roll-up.

3. *FI_FR_AE002F* – The corresponding import file generating AE.

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Generating Performance Ledger Export File

To generate the Performance Ledger Export File, run the following implementation defined jobs:

1. *FI_FR_RCID.0001* – Data Mapper job for the source table, period, regulatory reporting business unit and ledger.

   Note: Since non-RBUs (performance business units) might have a many-to-one relationship to the RBU you might have to run the Data Mapper more than once (that is, once for each BU in a RBU) prior to running the RBU roll-up job.

2. *FI_FR_RCID.0021* – The corresponding RBU roll-up.
3. *FI_FR_AE001F* – The corresponding import file generating AE.

Generating Global Consolidation Export File

To generate the Global Consolidation Export File, run the following implementation defined jobs:

1. *FI_FR_RCID.0002* – Data Mapper job for the source table, period, regulatory reporting business unit and ledger.

   Note: Since non-RBUs (performance business units) might have a many-to-one relationship to the RBU you might have to run the Data Mapper more than once (that is, once for each BU in a RBU) prior to running the RBU roll-up job.

2. *FI_FR_RCID.0020* – The corresponding RBU roll-up.
3. *FI_FR_AE000F* – The corresponding import file generating AE.

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