Arjun Krishnan, Alamanda Balaji Kumar

SOX Compliance with SAP® Treasury and Risk Management

- Provides a detailed roadmap for making your SAP processes compliant with SOX requirements
- Includes processes and tools for monitoring compliance in Cash & Liquidity Management
- Covers Cash Management, Electronic Banking, Positive Pay, and more, including internal controls for each

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Chapter 8 builds on the financial risk management concepts covered in Chapter 7 and extends them to cover investment and debt management.

8 Investment and Debt Management

Cash positioning and forecasting the liquidity needs of an organization results in cash surpluses and deficits that need to be invested or funded. A major function of treasury departments is to manage the liquidity needs of the corporation. Cash surpluses need to be invested to maximize the return on funds invested, and cash shortfalls need to be funded through borrowing that minimizes the cost of capital. SAP ERP has provided Investment and debt management functionality as part of the FSCM suite of applications. Additionally, it integrates the use of derivatives to hedge interest costs or income through the use of interest rate derivative instruments that can be linked to the underlying security or debt instrument.

The menu for Securities, Money Market, and Debt management functionality is divided into corresponding sections. The menu options follow the same structure as described in Chapter 7, as shown in Figure 8.1 below:

![Figure 8.1 Securities and Debt Management Menu Path](image)
8.1 Master Data Structure

Master data for securities follows the same structure as discussed in Chapter 7; however, two are specific to securities: asset class, and securities account. Although securities investment and debt management are classified as separate sections, they both use the same product types. The transaction type is used to differentiate whether a transaction is an investment or a debt.

8.1.1 Product Types

Product types are available for short-, medium-, and long-term maturities. There is some overlap between product types in the money market (short-term) and securities (medium- to long-term) instruments. The main difference between the two, aside from the term, is that longer-term securities are set up as master data through an asset class (to be discussed in Section 8.1.2, Global Settings for Securities). It is possible, although not typical, to use asset classes in the money market component as well. Furthermore, money market instruments are usually set up as standalone transactions.

Examples of product types in the money market component are shown in Figure 8.2.

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Name of Product Type</th>
<th>Product Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>51A</td>
<td>Fixed-term deposit: External</td>
<td>Fixed-term deposit</td>
</tr>
<tr>
<td>51B</td>
<td>Fixed-term dep. (mirrored)</td>
<td>Fixed-term deposit</td>
</tr>
<tr>
<td>52A</td>
<td>Deposit at notice: External</td>
<td>Deposit at notice</td>
</tr>
<tr>
<td>52B</td>
<td>Deposit at notice: Int. (min)</td>
<td>Deposit at notice</td>
</tr>
<tr>
<td>53A</td>
<td>Commercial Paper: External</td>
<td>Commercial Paper</td>
</tr>
<tr>
<td>53B</td>
<td>Commercial Paper: Internal</td>
<td>Commercial Paper</td>
</tr>
<tr>
<td>54A</td>
<td>Cash flow transact.: External</td>
<td>Cash flow transaction</td>
</tr>
<tr>
<td>54B</td>
<td>Cash flow transact.: Int. (min)</td>
<td>Cash flow transaction</td>
</tr>
<tr>
<td>55A</td>
<td>Interest rate instrument: Ext.</td>
<td>Interest rate instrument</td>
</tr>
<tr>
<td>55B</td>
<td>Interest rate instrument: Int</td>
<td>Interest rate instrument</td>
</tr>
<tr>
<td>56A</td>
<td>Interest rate instrument: HAC</td>
<td>Interest rate instrument</td>
</tr>
<tr>
<td>56B</td>
<td>Unconfirmed facility</td>
<td>Facility</td>
</tr>
<tr>
<td>57A</td>
<td>Interest rate instrument: Ext.</td>
<td>Interest rate instrument</td>
</tr>
<tr>
<td>58A</td>
<td>Fixed-term deposit: External</td>
<td>Fixed-term deposit</td>
</tr>
<tr>
<td>58B</td>
<td>Interest rate instrument: Ext.</td>
<td>Interest rate instrument</td>
</tr>
</tbody>
</table>

Figure 8.2 Money Market Product Types
Product types 54A (CASH FLOW TRANSACT: EXTERNAL) and 55B (INTEREST RATE INSTRUMENT: INT.) are examples of generic product types that can be copied and customized specific to an organization’s requirements.

Securities product types are shown in Figure 8.3.

<table>
<thead>
<tr>
<th>Typ</th>
<th>Text</th>
<th>Prod. Count</th>
<th>Cond. Name</th>
</tr>
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<tbody>
<tr>
<td>01A</td>
<td>Stocks</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>02A</td>
<td>Investment certificates</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>03A</td>
<td>Subscription rights</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>04A</td>
<td>Variable rate bonds</td>
<td>40</td>
<td>42</td>
</tr>
<tr>
<td>04B</td>
<td>Fixed-interest bonds</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>04C</td>
<td>Zero bonds</td>
<td>40</td>
<td>43</td>
</tr>
<tr>
<td>04D</td>
<td>Unit-priced bonds</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td>05A</td>
<td>Warrant bonds</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>07A</td>
<td>Convertible bonds</td>
<td>70</td>
<td>40</td>
</tr>
<tr>
<td>11A</td>
<td>Index warrants</td>
<td>111</td>
<td>0</td>
</tr>
<tr>
<td>11B</td>
<td>Equity warrants</td>
<td>112</td>
<td>0</td>
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<tr>
<td>11C</td>
<td>Currency warrants</td>
<td>113</td>
<td>0</td>
</tr>
<tr>
<td>11D</td>
<td>Bond warrants</td>
<td>114</td>
<td>0</td>
</tr>
<tr>
<td>15A</td>
<td>Shareholdings</td>
<td>160</td>
<td>21</td>
</tr>
<tr>
<td>FN1</td>
<td>Funds - Portfolio &lt; 365 days</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>FN2</td>
<td>Funds - Portfolio &gt; 365 days</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

Figure 8.3 Securities Product Types

8.1.2 Global Settings for Securities

Global settings for securities are shown in Figure 8.4, on the next page.

8.1.3 Transaction Types

Transaction types are used the same way for investment and debt management as was explained in Chapter 7 for financial risk management. However, here, they also serve the purpose of classifying a transaction as an investment or a debt instrument. Both have similar characteristics except that the principal and interest flows will be reversed depending on the transaction type. Examples of Securities Transaction Types are shown in Figure 8.5, on the next page.
Investment and Debt Management

**Figure 8.4** Global Settings for Securities

**Figure 8.5** Transaction Types Linked to Product Type
8.1.4 Securities Account

The Securities account is the actual account at the brokerage firm, bank, or financial institution where the investment or debt portfolio is held. The Securities account setup menu path is shown below.

![Securities Account Setup Menu Path](Figure 8.6)

The setup of the Securities account has been enhanced with the ability to provide payment information, security types, and netting rules, as shown in Figure 8.7.

![Securities Account Setup](Figure 8.7)
8.1.5 Class Data

Class data is master data that is specific to securities or debt instruments. It contains standing data that defines the principal and interest terms, condition, maturity, issue and redemption details, index and ratings data — typically information that is static, or changes only once in a while (such as ratings), and that defaults into the transaction when the security is traded. The system also uses the condition data to calculate cash flows based on principal amounts entered in the transaction. Class data is usually identified in SAP ERP through its CUSIP or ISIN number. Class data is created using Transaction FWZZ.

The initial entries are made on the Search terms tab, which allows for the entry of details with respect to type of instrument, securities account the instrument will be held in, CUSIP, ISIN, and other market identifiers, ratings information, and classification for reporting purposes. These entries are shown in Figure 8.8.

![Create Class Data Initial Screen](image)

**Figure 8.8** Create Class Data Initial Screen

The Basic data tab provides details about the Issue and Issuer, as shown in Figure 8.9. The issuer needs to be set up as a BP in the role of issuer; otherwise, the Issuer field can’t be populated, and will result in an error message.
The **Conditions** tab contains details of principal and interest terms and conditions, currency details, and calculation methods, as shown in Figure 8.10. The system uses this information to calculate the cash flows and value dates in transaction-specific processing.

**Figure 8.9** Asset Class Basic Data

**Figure 8.10** Asset Class Conditions Tab
Clicking on the Cash Flow button shown in Figure 8.10 displays the cash flows for the entire life cycle of the transaction, based on the condition parameters entered on the Conditions tab, as shown in Figure 8.11.

**Figure 8.11** Cash Flows Based on Conditions Tab Entries

Exchange setup is performed as shown below in Figure 8.12.

**Figure 8.12** Exchange Setup
Class data needs to be maintained in **Active** status for transactions to use it, as shown in Figure 8.13.

### 8.1.6 Business Partner

The setup of and controls for BPs for FSCM was covered in Chapter 7. Key roles used in investment and debt management are guarantor, issuer, depository bank, and counterparty.

All issuers of securities for whom class data is maintained need to be set up in the role of issuer, as shown in Figure 8.14.
8.2 Transaction Management

In accordance with the standard format, transaction management for investments and debt is divided between front office, back office, and accounting. To explain the business process and controls for transaction management, we will use a money market and security/debt transaction. This will illustrate the functionality and underlying controls available in these components (Figure 8.15).

Figure 8.15  Money Market Transaction Management Menu

8.2.1 Money Market Fixed Term Deposit Example

Following is an example of creating a money market fixed term deposit transaction.

Creating a Contract

The front office has created a fixed term deposit transaction in the money market component using Transaction FTR_CREATE, as shown in Figure 8.16.
Successful creation of the FTD results in the following notice (Figure 8.17):

**Settling the Contract**

The contract flows are settled in the back office after the trade is reviewed and confirmed. As shown in Figure 8.18, the cash flows for the transaction are displayed with the value dates for each inflow or outflow item.
Investment and Debt Management

Netting of Cash Flows

Where payments are due to or receivable from the same counterparty on the same value date, the flows can optionally be netted to make a net payment to the counterparty. The Netting menu option is available in all back office functions, as shown in Figure 8.19.

The screen that displays when executing Transaction TBR5 shows a proposal list of all of the payments eligible for netting, and is shown in Figure 8.20. This is proposed by the system, which will only select items that satisfy the strict criteria
for netting eligibility. For example, principal and interest flows due to the same counterparty on the same value date are netted, so that payment request for a net payment is created, for payment purposes, while maintaining and accounting appropriately for all of the individual transactions being netted. The selection and execution completes the netting activity, and the transactions are ready to be posted and paid based on the value dates.

**Figure 8.20** Netting Proposal Using Transaction TBR5

**Payment Processing and Accounting**

After the transaction has been approved for payment and posting, the process moves from the back office to accounting. The functions executed here provide the integration between the treasury and finance functions and components in SAP ERP. The menu options for **ACCOUNTING** are shown in Figure 8.21.

**Figure 8.21** Accounting and Payment Controls and Functions
Because cash flows and accounting entries in the books of record will be impacted, additional control functionality is available to accounting to block, release, and reset or reverse transactions that are either erroneous or have not been authorized.

Payment requests are created and related accounting entries made using Transaction TBB1. This transaction is one of many in the FSCM suite that enable collective processing of multiple transactions, as shown in Figure 8.22. Variants can be set up for specific groups of transactions, and can be automated to run daily as a batch job.

The collective processing screen for transaction TBB1 allows for multiple valuation areas, as well as a TEST RUN checkbox you can use if it is being run manually, as shown in Figure 8.23.
Executing Transaction TBB1 results in related Logs and Messages, as shown in Figure 8.24. In the Posting Log (green square) you will find details of all of the postings made and whether errors were encountered that need to be corrected, and in the Messages (yellow triangle) area, you will find informational-type messages.

This is an important control feature and also an audit trail because in the event of hard errors, postings will not be allowed to be created.

The posting log detail is shown in Figure 8.25. If the counterparty is set up for payment requests, and an outbound payment is due, a payment request will be created as shown in the posting log. The asset or income account will be debited and the payment request clearing account will be credited.

Payment requests that have been created can be viewed using Transaction F8BT, as shown in Figure 8.26. Payment details default in from authorized BP settings.
Next, the treasury payment program Transaction F111 is executed and creates bank transfers and clearing entries in accounting. The payment program proposes payments based on criteria entered in the payment parameters, as shown in Figure 8.27.

**Figure 8.26** List of Payment Requests Viewed Using Transaction F88T

**Figure 8.27** Payment Proposal Using Transaction F111
When running the payment proposal, the payment request clearing account is debited, and the bank clearing account is credited. The cycle is completed when the payment settles and is reflected in the incoming EBS the next day when the bank clearing account is debited and cleared, and the bank account is credited with the amount of the payment.

Postings made based on user-defined rules are set up in configuration. Because multiple currencies are involved, the accounting can be set up to post to exchange difference accounts, and tolerance limits can be set. The log with details of the accounting posting and accounting document created is shown in Figure 8.28.

### 8.2.2 Securities Bond Purchase Example

Transactions in the securities components require the configuration of class data as described in Section 8.1.5, Class Data. In the example shown in Figure 8.29, a fixed interest bond purchase is executed using the class data for the security already configured.
Clicking on the magnifying glass button next to the ID number lets you view the underlying class data details, as shown in Figure 8.30.

In Section 8.3, Market Data Management, we will look at how class data can be created and updated on a daily basis, especially if an organization has a lot of new securities transactions that are being traded on a daily basis.
8.2.3 Month End Accounting

Month end and periodic accounting relates to posting interest flows, valuation of positions, mark to market postings, calculation of realized and unrealized gains and losses, accruals and deferrals, and recording permanent impairment. It may also be required to transfer securities between accounts, or between valuation classes.

Key Month End Activities

Table 8.1 summarizes key month end and periodic activities typically executed for FX, investment, debt and derivatives transactions, along with their respective transaction codes:

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<tr>
<th>Transaction Code</th>
<th>Month End and Periodic Activity</th>
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<tr>
<td>TPM1</td>
<td>Key date valuation</td>
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<tr>
<td>TPM60</td>
<td>Mark to market calculation</td>
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<td>FWSO</td>
<td>Post interest</td>
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### Key Month End and Periodic Activities and Their Transaction Codes

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<th>Transaction Code</th>
<th>Month End and Periodic Activity</th>
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<tr>
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<td>Realized gains and losses</td>
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<td>Post accruals</td>
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<td>Reverse impairment</td>
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<td>TPM73</td>
<td>Impairment table records recovery value</td>
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**Table 8.1** Key Month End and Periodic Activities and Their Transaction Codes

---

### Valuation and Mark to Market

The valuation of open positions and marking to market is done monthly in accordance with accounting rules that require derivatives to be shown in the balance sheet at their fair value. For derivatives that are quoted on an exchange, the market value can be obtained through existing market data. For contracts that are not traded regularly or that are transacted over the counter and directly between principals, the fair value needs to be calculated. FAS133 refers to statement 107, *Disclosures About Fair Value of Financial Instruments* for guidance on determining the fair value of derivatives. SAP ERP uses the concept of discounted cash flow (DCF) to estimate the value of an open position. The use of DCF techniques for valuation is one of the approaches recommended in statement 107.

---

**Note**

SAP ERP uses DCF techniques to value open contracts for monthly mark to market calculation purposes. The basic concept of DCF is that a dollar in hand today does not have the same value as a dollar a year from now, because the dollar now can be invested to earn a rate of interest or the *time value of money* that will make it worth more a year from now. Conversely, the value of the dollar a year from now needs to be discounted by the interest rate to arrive at the current value today. SAP ERP values open positions by discounting future cash flows relating to that contract by a discount rate that is established using a specific yield curve that reflects the organization’s cost of capital or discount rate. The data and calculations are provided by the market risk analyzer and are integrated with the transaction manager.
8.2.4 Valuation of an Open Contract

This section uses the example of the forward contract discussed in Chapter 7 to calculate the market value and to create the resulting accounting mark up or mark down postings.

Transaction TPM60 executes the valuation calculation, as shown in Figure 8.31.

Figure 8.31 Transaction TPM60 Calculates NPV
The resulting screen, shown in Figure 8.32, shows the Net Present Value (NPV) calculation for the contract based on discounting the forward cash flows back to the key valuation date using the discount rate derived from the respective yield curves for U.S. dollars and Swiss Francs (CHF).

The DETAIL LOG and CALCULATION BASES buttons shown in Figure 8.32 provide further detail on the parameters used and the basis for the calculations, as shown in Figure 8.33. The screen shows the discount factor (DISCFAC) used and the NPV of those cash flows.

Figure 8.34 shows the netting of the two flows in currency CHF, resulting in the NPV value shown in the Transaction TPM60 valuation screen.
The Calculation Bases screen shown in Figure 8.35 provides details on the yield curves used for both currencies and discount rates used.
The exchange rate used in the calculation is available in the same screen, as shown in Figure 8.36.

![Figure 8.36 Exchange Rate Details Used in Valuation](image)

The mark up or mark down valuation is posted using Transaction TPM1. The resulting screen shows the transaction you can execute for valuation (Execute VALUATION button), as shown in Figure 8.37.

![Figure 8.37 Executing Valuation Using Transaction TPM1](image)

The discussed calculations for valuation and other related functionality are made possible through market data feeds and analyzer tools that integrate with transaction management. We will now review these key areas and how they facilitate transaction management.

### 8.3 Market Data Management

Up-to-date, real-time market data can be made available on a daily or periodic basis using the SAP NetWeaver XI interface or other file communication software to link the SAP ERP system to market data providers such as Reuters, Bloomberg or Dow Jones. Many options are available for bringing in market data, as shown in the application menu options for this functionality shown in Figure 8.38.
The three key options for uploading transactional data required for transaction management are as follows:

- Manual upload through Microsoft Excel
- Datafeed, which can be set up as ad hoc or real-time
- File interface

To fully leverage the integration between market data providers and the SAP ERP system, it is recommended to set up an automated feed through file interfaces, which will send and receive market data using push/pull file communication commands with middleware such as SAP NetWeaver XI.

In the next section, will review practical applications of this two-way communication interface.

### 8.3.1 Transaction Data Feed

Two major areas exist where automatic data feed provides dynamic, real-time data for decision making and accounting purposes. The first is a transactional data...
feed which will typically be comprised of FX rates, swap rates, interest rates, and related volatilities. These are required for executing foreign exchange transactions and building the yield curves that are used for valuation purposes. Typically, the market data feed is requested daily from the market data provider through an automated request form that is sent through the SAP NetWeaver XI interface, and — based on the parameters entered there — the market data provider will return the requested data. This data is received and brought into SAP ERP by SAP NetWeaver XI, by triggering a function call and populating the various tables in SAP ERP that hold this information. Requests should be automatically scheduled, but authorized treasury users should also have the ability to make one-time or ad hoc requests, for example, if an investment is made after the scheduled job time and master data is required to set up the new transaction. The architecture described here is shown in Figure 8.39.

![Figure 8.39 Transactional Market Data Interface](image)

### 8.3.2 Master Data Feed

With the second application, a request can be made for securities master data, based on a CUSIP number sent to the market data provider. The information received will be mapped to fields in the class data. After the class data is set up, the day's transactional activity can be entered in the system either manually or through an automated feed. The SWIFT MT500 series has standard formats for the receipt of securities-related information. As an alternative, the mapping can take place between the market data provider’s file format and table fields in SAP ERP.
The following is an example of typical information that can be received to set up securities-related master data:

- **Issuer information:**
  - Issuer name
  - Type
  - Parent information

- **Security information**
  - Country
  - Maturity
  - Weighted average life (for ABS)
  - Call date

- **Coupon information**
  - Coupon
  - Fixed or floating
  - Frequency
  - Day count
  - If floating, coupon frequency (quarterly, semi-annually, etc)
  - If floating, spread to libor

- **Identifiers**
  - CUSIP
  - ISIN

- **Ratings**
  - Moody’s (short-term and long-term)
  - S&P (short-term and long-term)
  - Combined

The architecture for receiving securities-related master data is shown in Figure 8.40.

The next section reviews how the analyzer tools are used in SAP ERP.
8.4 The Analyzers

The analyzers are components that support transaction management processing, and that provide analytics, statistical, and measurement tools specific to treasury risk management.

Three analyzers are provided by SAP ERP as part of the FSCM suite of applications:

- Market Risk Analyzer
- Credit Risk Analyzer
- Portfolio Analyzer

The menu path and options for the analyzers are shown in Figure 8.41.

![Figure 8.40] Securities Master Data Interface

![Figure 8.41] Analyzer Menu Path and Options
8.4.1 Analyzer Functionality

Key functionality available in these components for analytics of financial risk management are as follows:

- NPV calculations for valuation
- Value at risk
- What-if analysis
- Simulation
- Limit management
- Market data shifts and scenarios
- Portfolio benchmarking
- Portfolio returns and yield book calculations
- Currency exposure risk analysis

We will look specifically at how the Market Risk Analyzer provides the mark to market valuation calculations functionality described in Section 8.2.4, Valuation of an Open Contract, as well as how the Credit Risk Analyzer provides critical limit management controls for transaction processing in financial risk management, investment, and borrowing activities.

8.4.2 Valuation and Mark to Market

As discussed in Section 8.2.4, Valuation of an Open Contract, valuation for mark to market is calculated using yield curve, interest rate, volatility, and exchange rate information. The link to transaction management is made through an evaluation type that is in turn linked to all of the parameters required to build a yield curve for use in discounted cash flow calculations.

The settings are made through basic analyzer settings in configuration. The menu path is  Financial Supply Chain Management  •  Treasury and risk management  •  Basic analyzer settings  •  Valuation  •  Maintain authorizations/profiles/users, as shown in Figure 8.42.
The evaluation type is linked to yield curves and volatilities, as shown in Figure 8.43. Additional tabs are available that provide links to Datafeed, Portfolio Analyzer, and additional securities-related settings.

**Figure 8.43** Evaluation Type Settings
The path for maintaining master data relating to evaluation type is shown in Figure 8.44.

![Diagram of menu path for evaluation type setup](image)

**Figure 8.44** IMG Menu Path for Evaluation Type Setup

The **YIELD CURVE TYPE** is defined for required currencies (CURR.), as shown in Figure 8.45.

![Diagram of yield curve type setup](image)

**Figure 8.45** Define Yield Curve Type for Multiple Currencies
Selecting a specific currency enables the creation of the reference interest rates that comprise the yield curve structure, as shown in Figure 8.46.

These reference interest rates are in turn created with specific attributes and settings as required, as shown in Figure 8.47.
Volatilities are set up in the same way, using a VOLATILITY TYPE and related settings. Examples of volatility types used are shown in Figure 8.48.
When automatic valuation is not used, you can manually enter net present values in the valuation table, for example, if the bank or business partner provides valuation data at month end. The application menu path is shown in Figure 8.49.

The table entry in Figure 8.50 shows both the calculated rate shown earlier in Figure 8.32 in Section 8.3.5 and entries that may have been entered manually.
The link between Evaluation Type and the valuation Transaction TPM60 is shown in Figure 8.51, where all of the previous settings taken together with the market data feed will result in the valuation for mark to market purposes.

In the next section, we will review another key function provided by the analyzers, relating to limit management.

### 8.4.3 Limit Management

Limit management in the context of transaction management is a critical automated control that provides checks and balances with respect to individual transactions. It also provides overall limits with respect to totals, amounts, percentages by portfolio, amounts allowable by business partner or type of security, and other criteria as set out by the board of directors of the organization, or the investment subcommittee of the board. These guidelines can vary from organization to organization, and can range from fairly simple to highly complex rules that need to factor in sub limits within classes of limits. For example, an organization may have an overall percentage limit for investment in a particular security issued by a com-
pany, but may also require a sub limit for investment in any company that has a parent/child relationship with the company at the top of the hierarchy. When the limit structure becomes very complex, it may be advisable from a practical standpoint to leverage the limit management functionality in SAP ERP with user-defined custom ABAP calculation and reporting programs to ensure compliance with the investment guidelines.

Different forms of dynamic limit management are available in FSCM transaction processing. Limit checks can be real-time and proactive, or they can be set up for end of day reporting and notification. Integrated default limit checks for online processing is activated at the company code level.

**Workflow in Limit Management**

Limit management can make effective use of workflow to ensure that transactions that fail limit checks can be routed to a higher authority, either for approval, or as an alert monitor. The settings to activate these are made in the following IMG path:

Financial Supply Chain management • Treasury and Risk management • Credit Risk Analyzer • Basic Settings • Global Settings.

The resulting input screen and settings are shown in Figure 8.52.

![Figure 8.52 Activating Online Limit Checking Settings](image)

Additionally, it is necessary to assign workflow recipients using the following IMG menu path: Financial Supply Chain management • Treasury and Risk management • Credit Risk Analyzer • Basic Settings • Assignments • Assignment of Senders to Recipients • Assign Senders of Workflows to Recipients.
Workflow will be started only when online limit checking is activated. It can't be used with end of day processing.

**Limit Per Transaction**

Limit checks can be applied at the individual transaction level, using a combination of **Product Type** and transaction type (**Transactn Type**). An example of a transaction that has failed a limit check is shown in Figure 8.53.

![Figure 8.53 Limit Check Activated Message in Transaction Management](image)

This form of limit control is set up using Transaction KLMAXLIMIT, as shown in the application path menu in Figure 8.54.
Limits are set up in the resulting screen by company code (Co...), product type (PTyp), and transaction type (TTyp), as shown in Figure 8.55.
Release of limits is available through the same menu path shown in Figure 8.54. The resulting release input screen is shown in Figure 8.56.

![Mass Release of Limits](image)

**Figure 8.56** Mass Release of Limits with Releaser Information

**Reporting on Limit Breach**

Transaction KLLE provides a report of exceeded limits per transaction. The input screen for this report is shown in Figure 8.57.

![Exceeded Limits by Product Type/Transaction Type](image)

**Figure 8.57** Transaction KLLE for Exceeded Limits by Transaction

The resulting report is shown in Figure 8.58.
Portfolio-Based Limit Management

The Credit Risk Analyzer has functionality to create limits based on different characteristics that can be linked to portfolios, to monitor compliance with board-related directives for allowable investment criteria. Some of the characteristics and available combinations are shown in Figure 8.59.

![Exceeded Limits by Product Type/Transaction Type](image)

**Figure 8.58** Transaction KLLE Report of Exceeded Limits by Transaction

**Figure 8.59** Characteristics and Limit Types Available for Limit Management
If parent/child relationships exist between securities in which investments have been made, these can be created through BP master data setup. As shown in Figure 8.60, a subsidiary relationship has been created between two BPs. These relationships can be leveraged to create multi-level limit management capability within the SAP ERP system.

![Figure 8.60 Maintaining Relationships for Limit Management](image)

**Note**

Organizations may want to consider custom programming if the relationships and requirements for limit management become very complex. The existing tables, master data, and transaction codes available in the analyzers and in the transaction manager can be linked through custom ABAP code to fully leverage the functionality and create robust limit management compliance and proactive reporting and audit trails.

### 8.5 Integration with Cash Management

Securities integration with cash management follows the same steps described in Chapter 7 for the creation of planning types and linking product types with planning types.

One additional step is marking update types as relevant for cash management (CM RELEVANT), as shown in Figure 8.61. This is accomplished through the IMG menu for cash management integration.
Several reports are available through the application menus so you can view all of the functions executed in transaction management within FSCM. They cover the following:

- Payment information
- Payment due dates
- Posting logs
- Payment alerts
- Accounting information
- Positions
- Financial transactions
- Cash flow
- Posting alerts

Standard reports are accessed through the **Information System** menu option available in each of the components within the FSCM suite of applications.
8.7 Summary

In this chapter, we covered transaction management for investment and debt, using examples from the money market and securities components, master data, data feed and integration, and how the analyzer tools are used in key areas of valuation and limit management. The last two chapters of this book focus on tools used for SOX compliance and the SOX audit process, as well as special topics such as upgrades and archiving, which are of relevance to existing treasury users of SAP ERP.
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