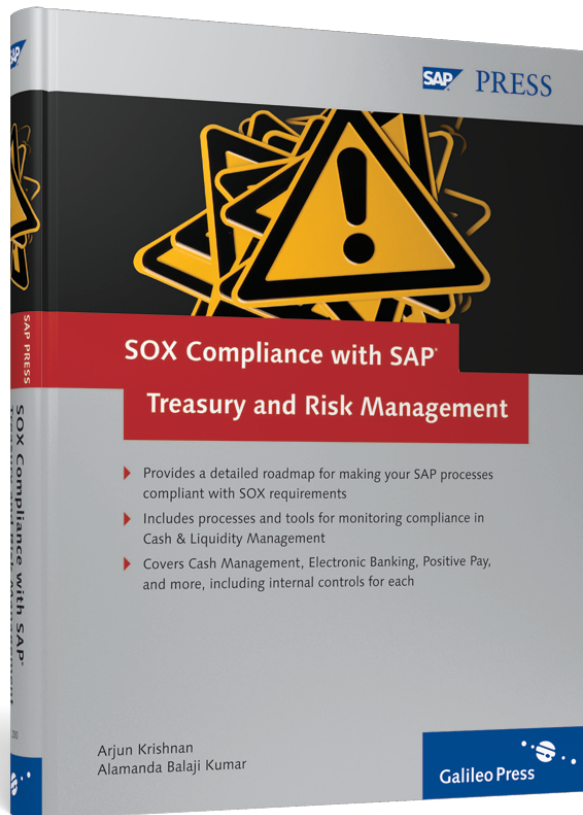


Arjun Krishnan, Alamanda Balaji Kumar

SOX Compliance with SAP® Treasury and Risk Management



 Galileo Press

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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:

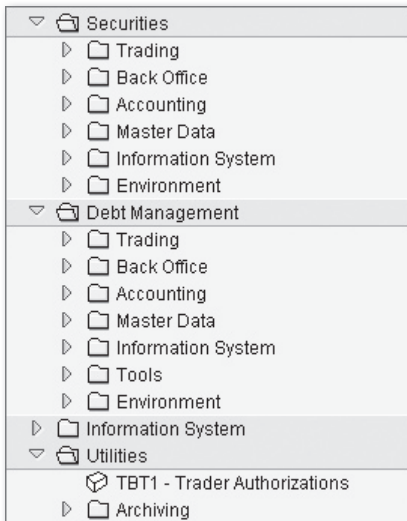


Figure 8.1 Securities and Debt Management Menu Path

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.

PType	Name of product type	Product category
51A	Fixed-term deposit: External	Fixed-term deposit
51B	Fixed-term dep: (mirrored)	Fixed-term deposit
52A	Deposit at notice: External	Deposit at notice
52B	Deposit at notice: Int. (mirr)	Deposit at notice
53A	Commercial Paper: External	Commercial Paper
53B	Commercial Paper: Internal	Commercial Paper
54A	Cash flow transact.: External	Cash flow transaction
54B	C. flow trans.: Int. (mirr)	Cash flow transaction
55A	Interest rate instrument: Ext.	Interest rate instrument
55B	Interest rate instrument: Int.	Interest rate instrument
55C	Interest rate instrument: HAC	Interest rate instrument
56A	Confirmed facility	Facility
56B	Unconfirmed facility	Facility
A01	Interest rate instrument: Ext.	Interest rate instrument
A02	Fixed-term deposit: External	Fixed-term deposit
M01	Interest rate instrument: Ext.	Interest rate instrument

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.

PType	Text	Prod. Cate	Cond. gro
01A	Stocks	10	10
02A	Investment certificates	20	30
03A	Subscription rights	30	0
04H	Variable rate bonds	40	42
04I	Fixed-interest bonds	40	40
04J	Zero bonds	40	43
04K	Unit-quoted bonds	40	41
06A	Warrant bonds	60	40
07A	Convertible bonds	70	40
11A	Index warrants	111	0
11B	Equity warrants	112	0
11C	Currency warrants	113	0
11D	Bond warrants	114	0
16A	Shareholdings	160	21
FN1	Funds - Portfolio < 365 days	20	30
FN2	Funds - Portfolio > 365 days	20	30

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.

Change View "Treasury: Additional Company Code Data": Details

Company code data

Currency: USD
 Fi.Year Variant: K4 Fiscal year End: 31.12.2008
 Chart of Accts: CAUS Chart of accounts - United States

General settings

SWIFT code: SAPCDE

Exchange rate settings

Rate calculat.: 01
 Rate type (deb): M
 Rate type(cred): M

Securities settings

Short sales possible
 Price type for evaluation: 01

Loans settings

Calendar: 01

Regulatory reporting settings

Reg.rep.active: Country variant: 01
 BAV register no: Ident. no. ID:

Settings for variable interest rates

Planned record update: Update with current interest rates

Figure 8.4 Global Settings for Securities

Securities: Transaction Types			
	PTyp	Text	TTyp Name of Transaction
	01A	Stocks	100 Purchase
	01A	Stocks	200 Sale
	01A	Stocks	300 Repurchase

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.

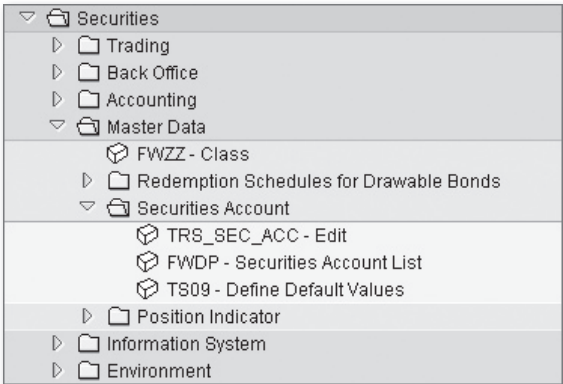


Figure 8.6 Securities Account Setup Menu Path

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.

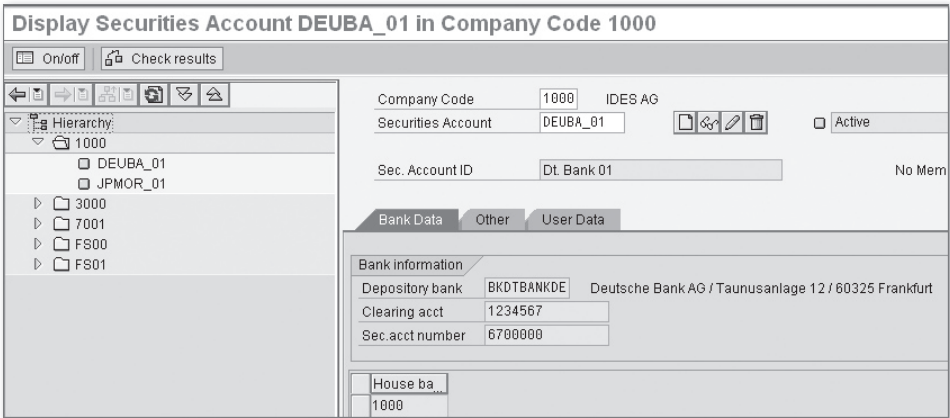


Figure 8.7 Securities Account Setup

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.

The screenshot shows the SAP Class Data Initial Screen for a Canada Bond. The ID number is CA135087WB60. The screen is divided into several tabs: Search terms, Basic data, Conditions, Exchanges, Notice, Reg. rep., and User data. The Search terms tab is active, showing the Short Name as 'Canada Bond' and the Long Name as 'Canadian Govt CAN7 1/4 06/01/17'. Below this, there are sections for Second Indexes, General Data, and Rating.

IndexName	IndexVal.
ISIN	CA135087WB99
EUROCLEAR	
CUSIP	135087WB9
SEDOL	
CBOE	
Sec. -index 6	
Sec. -index 7	
Sec. -index 8	

Valid From	Institute	Rating
01.11.2008	Standard and	Aaa
01.11.2008	Moody's	Aaa

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.

ID number: CA135087WB60 Canada Bond Active

Search terms | **Basic data** | Conditions | Exchanges | Notice | Reg. rep. | User data

Issue
 Issuer: CANGOV
 Issue currency: CAD
 Nominal value: 1.000,00
 Issue start: 01.06.2007
 Nomin. per TU: 1.000,00
 End of term: 01.06.2017
 Issue rate: 100,000000

Structure
 Quotation: Percentage-c

Drawing
 Drawing:
 Date:

Figure 8.9 Asset Class Basic Data

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.

Create Class - Product Type: Fxd bonds - ID Number: CA135087WB60

Check Reset Cash Flow References

ID number: CA135087WB60 Canada Bond Active

Search terms | **Basic data** | **Conditions** | Exchanges | Notice | Reg. rep. | User data

Interest calculation
 Int.calc.method: Act/ActP (ISM)
 Round.rule:

Effective interest rate
 Eff.int.meth: AIBD/ISMA
 Effect.int.rate:

Repayment
 Repayment Type: Maturity

Condition Items

Status	Condition Type Text	Eff. from	Crcy	Percent	Calc. date	M	C	Due Date	M	C	Frg
<input type="checkbox"/>	Int. (perc.-quoted)	01.06.2007	CAD	7,1250000	30.11.2007	<input type="checkbox"/>	0	01.12.2007	<input type="checkbox"/>	0	006
<input type="checkbox"/>	Final repayment	01.06.2007	CD	0,0000000	30.05.2017	<input type="checkbox"/>	0	01.06.2017	<input type="checkbox"/>	0	000

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.

Pos.vl.dt	UpdateType	Update Type Text	Status	Units	NomC	Nominal	Amnt in PC	Pos.C
01.06.2007	SE1000	Purchase		0,000000	CAD	100.000,00	100.000,00	CAD
01.12.2007	SAM5000	Nominal interest		0,000000			3.543,14	CAD
01.06.2008	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2008	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2009	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2009	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2010	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2010	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2011	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2011	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2012	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2012	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2013	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2013	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2014	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2014	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2015	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2015	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2016	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.12.2016	SAM5000	Nominal interest		0,000000			3.562,50	CAD
01.06.2017	SAM1104	Scheduled repayment (final)		0,000000	CAD	100.000,00	100.000,00	CAD
01.06.2017	SAM5000	Nominal interest		0,000000			3.562,50	CAD

Figure 8.11 Cash Flows Based on Conditions Tab Entries

Exchange setup is performed as shown below in Figure 8.12.

The screenshot shows the 'Exchange Setup' window for 'Canada Bond'. The 'Exchanges' tab is active. Below the 'Assign exchanges' section, there is a table with the following data:

Exchange	Fl.	H.	List	Price dev. in %	Price deviation
TSE	<input type="checkbox"/>	<input type="checkbox"/>			

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.

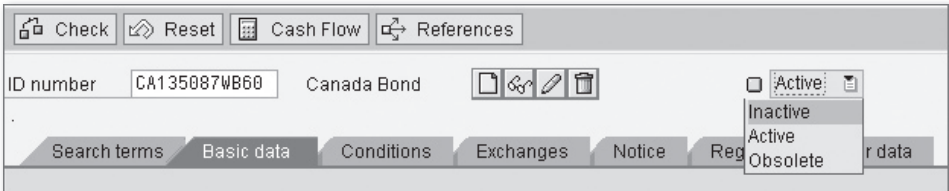


Figure 8.13 Maintain Asset Class in Active Status

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.

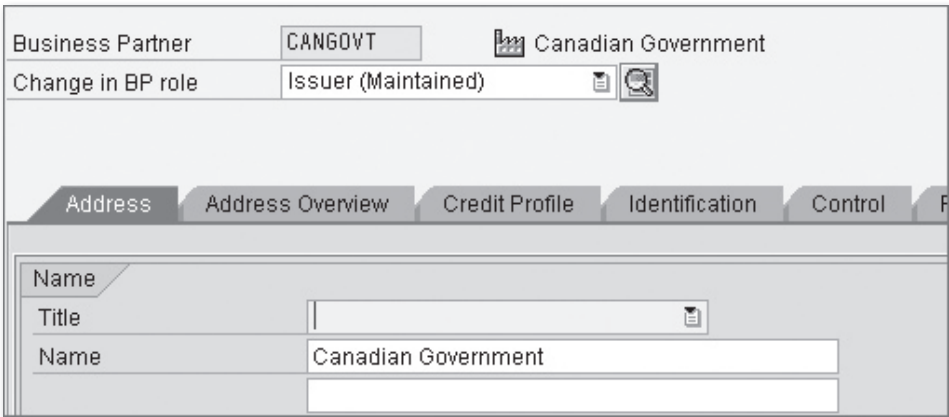


Figure 8.14 Create BP in Role Issuer

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).

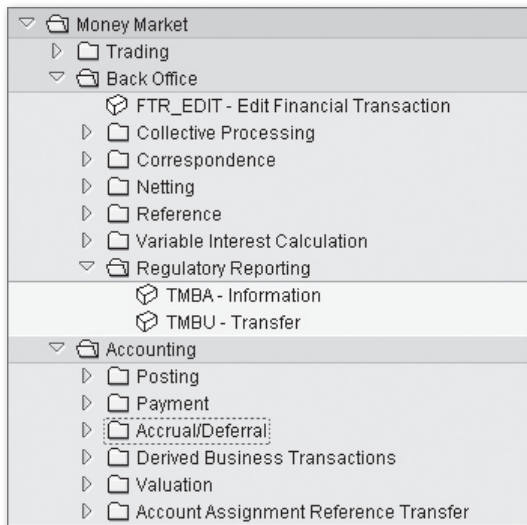


Figure 8.15 Money Market Transaction Management Menu

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.

Create Fixed-Term Deposit: Structure

Conditions Effective interest rate

Company Code 1000 IDES AG Transactn \INTERN\
 Product Type 51A Fixed-term deposit: External Activity 1 Contract
 Transactn Type 200 Borrowing

Structure Administration Other flows Payment details Cash flow Memos

Business Partner BKJPMORGUS JP. Morgan Chase // NEW YORK

Borrowing

Flow type 1105 Borrowing / Increase
 Amount 5.000.000,00 USD +

Term

Start 01.07.2008
 End 01.01.2009

Interest structure

Percentage Rate 3,0000000
 Int.calc.method Act360
 Frequency Monthly All 1 Months
 Shift due date back to end of term Capitalize Interest

Contract data

Close Date 30.06.2008 / 19:48:13 Trader
 Contact Person External Refer.

Check run: Trans.: Display messages

Typ	Message text	LTxt
<input type="checkbox"/>	No limits were exceeded	?

Figure 8.16 Create FTD Using Transaction FTR_CREATE

Successful creation of the FTD results in the following notice (Figure 8.17):



Figure 8.17 FTD Transaction Created

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.

Pmnt Date	FTyp	Flow Type (Name)	PmntAmtPyC	D	PmntCurr
01.07.2008	1105	Borrowing / Increase	5.000.000,00	+	USD
01.08.2008	1200	Nominal interest	12.916,67-	-	USD
01.09.2008	1200	Nominal interest	12.916,67-	-	USD
01.10.2008	1200	Nominal interest	12.500,00-	-	USD
01.11.2008	1200	Nominal interest	12.916,67-	-	USD
01.12.2008	1200	Nominal interest	12.500,00-	-	USD
01.01.2009	1120	Full repayment upon maturity	5.000.000,00-	-	USD
	1200	Nominal interest	12.916,67-	-	USD

Figure 8.18 Cash Flows for FTD Transaction 5000000000005

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.

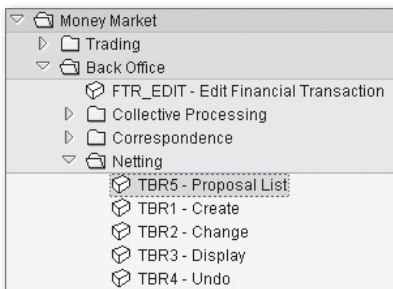


Figure 8.19 Netting of Payments to Counterparty

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.

Transaction Netting		Product type	Flow type	Transaction type			PR	IP	PD
		Amount		HBank	AccID	Payer/ee	Bank	Pmnt meth.	Supp
5000000000005	51A Fixed-term deposit: External	5,000,000.00*	1120 Full repayment upon matu	200	Borrowing				
	USD	12,916,67-	1200 Nominal interest	1000	1050	BKJPMORGUS JPM	Z		<input checked="" type="checkbox"/>
	USD			1000	1050	BKJPMORGUS JPM	Z		<input checked="" type="checkbox"/>
5000000000006	51A Fixed-term deposit: External	43,055,56*	1200 Nominal interest	100	Investment				
	USD			1000	1050	BKJPMORGUS JPM	E		<input checked="" type="checkbox"/>
5000000000007	51A Fixed-term deposit: External	7,000,000.00*	1120 Full repayment upon matu	100	Investment				
	USD	24,111,11+	1200 Nominal interest	1000	1050	BKJPMORGUS JPM	EZ		<input checked="" type="checkbox"/>
	USD			1000	1050	BKJPMORGUS JPM	EZ		<input checked="" type="checkbox"/>

ThinkTree Edison Proposal List for Netting Time 22:08:44 Date 31.10.2008 RFTBCM10/TUSER24 Page 6

Transaction Netting		Product type	Flow type	Transaction type			PR	IP	PD
		Amount		HBank	AccID	Payer/ee	Bank	Pmnt meth.	Supp
<input checked="" type="checkbox"/>	5000000000006	51A Fixed-term deposit: External		100	Investment				
	USD	10,000,000.00*	1120 Full repayment upon matu	1000	1050	BKJPMORGUS JPM	E		<input checked="" type="checkbox"/>
	USD	43,055,56*	1200 Nominal interest	1000	1050	BKJPMORGUS JPM	E		<input checked="" type="checkbox"/>

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.

Accounting
Posting
TBB1 - Post Flows
TPM10 - Fix, Post, Reverse Business Transactions
TI90 - Release
TI93 - Block
Payment
F110 - Open Items
F111 - Payment Request
F8BT - Display Payment Requests
FBRA - Reset Cleared Items
F8BW - Reset Cleared Payment Requests

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.

Treasury: Post Flows

Application

- Foreign Exchange
- Money Market
- Derivatives
- Securities

General selections

Company Code: 1000

Transaction: 5000000000000000 to 5999999999999

Product Type: []

Transaction Type: []

ID number: []

Securities Account: []

Futures Account: []

Business Partner: []

Portfolio: []

Currency: []

Flow Classification: []

Up To And Including Due Date: 15.11.2008

Up to and Incl. Posting Date: []

Only post flow acc. to currency

Check Release

(For Example to Separate Accrual/Deferral and Reset Transaction)

Figure 8.22 Collective Processing of Treasury Flows: Upper Screen Area

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.

Posting control

Posting date: [] Instead of Due Date

Posting Period: []

Document date: [] Instead of curr.date

Test Run

Post Operative Only

Post All Valuation Areas

Figure 8.23 Collective Processing of Treasury Flows: Lower Screen Area

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.

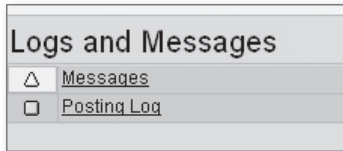


Figure 8.24 Transaction TBB1 Logs and Messages

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.

Test run						
Company code	1000	Valuation area	001 Operational	Payment / Borrowing (liability)	General ledger	01.07.2008
MM1105+ Borrowing / Increase		Valuation class	0001 IFRS/US-GAAP: Held for	Product type	51A Fixed-term deposit: Exter	
Transaction number	5000000000005					
<input type="checkbox"/> A payment request would be created						
40	5.000.000,00	USD	4.027.710,65	EUR 118888	Clearing account for payment requests	
50	5.000.000,00-	USD	4.027.710,65-	EUR 11113113	Fixed-term deposit receivables, Trading	
Company code	1000	Valuation area	001 Operational	Interest	General ledger	01.08.2008
MM1200- Nominal interest		Valuation class	0001 IFRS/US-GAAP: Held for	Product type	51A Fixed-term deposit: Exter	
Transaction number	5000000000005					
<input type="checkbox"/> A payment request would be created						
40	12.916,67	USD	10.404,92	EUR 11220000	Interest expense IAS	
50	12.916,67-	USD	10.404,92-	EUR 118888	Clearing account for payment requests	
Company code	1000	Valuation area	001 Operational	Interest	General ledger	01.09.2008
MM1200- Nominal interest		Valuation class	0001 IFRS/US-GAAP: Held for	Product type	51A Fixed-term deposit: Exter	
Transaction number	5000000000005					
<input type="checkbox"/> A payment request would be created						
40	12.916,67	USD	10.404,92	EUR 11220000	Interest expense IAS	
50	12.916,67-	USD	10.404,92-	EUR 118888	Clearing account for payment requests	

Figure 8.25 Posting Log Showing Creation of Payment Requests

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.

31.10.2008 21:35:45 Display Payment Requests

Key number	CoCd	DocumentNo	Year	Currency	Pymt curr.amnt	AccTy	Partner	Alt. payee
7	1000	1	2008	USD	5.000,00	S	118888	
8	1000	2	2008	USD	12.916,87	S	118888	
9	1000	3	2008	USD	10.000,00	S	118888	
10	1000	4	2008	USD	43.055,56	S	118888	

Figure 8.26 List of Payment Requests Viewed Using Transaction F8BT

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.

Edit Payment Proposal: Payments

Choose Change Back from find

Run On: 31.10.2008 AK1 R Snd. CC 1000

Payments/exceptions

Ty...	Value Date	Local curr.pmnt amnt	Crcy	Vendor	Name 1
<input type="checkbox"/>	27.06.2008	5.638.794,91-	USD		JP. Morgan Chase
		5.638.794,91-			

Payment volumes

Outgoing payment	5.638.794,91
Incoming payment	0,00

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.

Job Log Entries for F111-20081031-AK1R / 23033201		
Job log overview for job: F111-20081031-AK1R / 23033201		
Date	Time	Message text
31.10.2008	23:03:32	Job started
31.10.2008	23:03:32	Step 001 started (program SAPF111S, variant &0000000000035, user ID TUSER24)
31.10.2008	23:03:32	Log for payment run for payment on 31.10.2008, identification AK1 R
31.10.2008	23:03:32	>
31.10.2008	23:03:32	> Additional log for G/L account 118888 company code 1000
31.10.2008	23:03:32	>
31.10.2008	23:03:32	> Posting documents additional log
31.10.2008	23:03:32	> Currencies in line 1: USD / EUR Currencies in line 2: USD / USD
31.10.2008	23:03:32	> Document 2000000015 company code 1000 currency USD payment method Z
31.10.2008	23:03:32	> Lit PK Acct RA Amount Tax
31.10.2008	23:03:32	>
31.10.2008	23:03:32	> 001 40 0000118888 7.000.000,00 0,00 5.638.794,91 0,00
31.10.2008	23:03:32	> 7.000.000,00 0,00 0,00 0,00
31.10.2008	23:03:32	> 002 50 0000113105 7.000.000,00 0,00 5.638.794,91 0,00
31.10.2008	23:03:32	> 7.000.000,00 0,00 7.000.000,00 0,00
31.10.2008	23:03:32	> 003 40 0000230000 0,00 0,00 0,00 0,00
31.10.2008	23:03:32	> 0,00 0,00 7.000.000,00 0,00
31.10.2008	23:03:32	>
31.10.2008	23:03:32	End of log
31.10.2008	23:03:33	Job finished

Figure 8.28 Posting and Accounting Document Created After Payment Run

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.

Display Security Transaction: Structure

Position cash flows

Company Code: 1000 IDES AG Transactn: 2000000000012
 ID number: DE0008846718 BASF AG 03/10 Activity: 2 Settlement
 Transactn Type: 100 Purchase

Structure Trading data Administration Other flows Payment details Cash flow Memos

Partner: BKJPMORGUS JP. Morgan Chase // NEW YORK
 Flow Type: 0100 Purchase (transaction)

Position

Securities Acct: DEUBA_01 Dt. Bank 01
 Gen. Valn Class: IFRS/US-GAAP: Held to Ma
 Quantity Position

Date Details

Pos. Value Date: 13.01.2004
 Calculat. Date: 12.01.2004 Incl. MthEnd
 Payment Date: 13.01.2004

Amounts

Nominal Amount: 1.000.000,00 EUR
 Price (% Quot.): 100,000000 % Mkt Price: 100,700000 %
 Market Value: 1.000.000,00 EUR Origin: Kurstab. 31.12.2004
 Payment Amount: 1.000.000,00 EUR

Accrued Interest Calculation

Int.Calc.Method: Coupon: Next coupon will be delivered (1)
 Round.rule: Round.rule: W/o Acc.Int. Coupons
 Payment Amount: 19.364,75 EUR

Effective Interest Rate

Eff.Int.Mth: AIBD/ISMA
 Eff.Int.Rate: 3,7469580
 Pricing

Figure 8.29 Securities Bond Purchase Using Class Master Data

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.

Display Class - Product Type: Fxd bonds - ID Number: DE0008846718

Check Reset Cash Flow References

ID number: DE0008846718 BASF AG 03/10 Active

Search terms Basic data Conditions Exchanges Notice Reg. rep. User data

Descriptions

Short Name BASF AG 03/10
Long Name 3,75000% BASF AG 03/10

Second. Indexes

IndexName	IndexVal.
ISIN	884671
EUROCLEAR	
CUSIP	
SEDOL	
CBOE	
Sec. -index 6	
Sec. -index 7	
Sec. -index 8	

General Data

Prod. Cat. 40 Bond
Product Type 041 Fixed-interest bonds
Sec. Class. Corporate bond
Classific. 5 Corporate bonds

Rating

Valid From	Institute	Rating

Figure 8.30 Underlying Class Data for Security Purchase

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:

Transaction Code	Month End and Periodic Activity
TPM1	Key date valuation
TPM60	Mark to market calculation
FWSO	Post interest

Transaction Code	Month End and Periodic Activity
FW17	Enter security prices
TPM18	Realized gains and losses
TBB4	Post accruals
TBB1	Post treasury flows
FWDU	Security account transfer
TPM15	Valuation class transfer
TPM 70	Record impairment of position
TPM71	Reverse impairment
TPM73	Impairment table records recovery value

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.

Save NPVs from the Market Risk Analyzer

General Selections

Company Code	<input type="text"/>	to	<input type="text"/>	↕
Product Type	<input type="text"/>	to	<input type="text"/>	↕
Position Currency	<input type="text"/>	to	<input type="text"/>	↕
Portfolio (Position)	<input type="text"/>	to	<input type="text"/>	↕

OTC Transactions

Transaction	4000000005888	to	<input type="text"/>	↕
Transaction Type	<input type="text"/>	to	<input type="text"/>	↕
Facility	<input type="text"/>	to	<input type="text"/>	↕
Master Agreement	<input type="text"/>	to	<input type="text"/>	↕
Assignment	<input type="text"/>	to	<input type="text"/>	↕
Internal Reference	<input type="text"/>	to	<input type="text"/>	↕
Characteristics	<input type="text"/>	to	<input type="text"/>	↕
Finance Project	<input type="text"/>	to	<input type="text"/>	↕
Contract/Transaction Curre	<input type="text"/>	to	<input type="text"/>	↕

Evaluation Parameters

Currency	<input type="text"/>
Evaluation Type	RM01
Key Date	16.11.2008
<input checked="" type="checkbox"/> Clean price calculation	
<input checked="" type="checkbox"/> Intrinsic value calcul.	
<input type="checkbox"/> Separate NPV (In/Out)	<input type="checkbox"/> Total NPV = Total of In/Out

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 Franks (CHF).

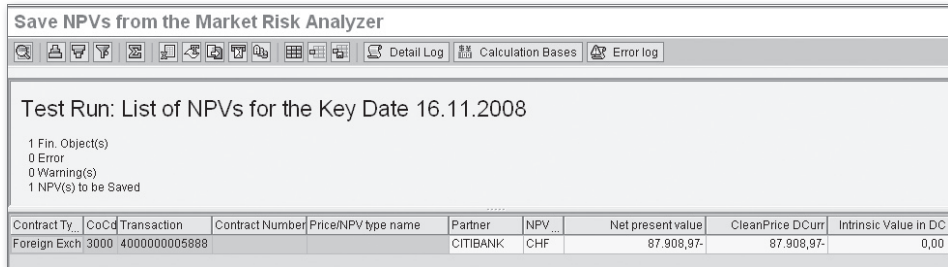


Figure 8.32 NPV Calculation for Forward Contract

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.

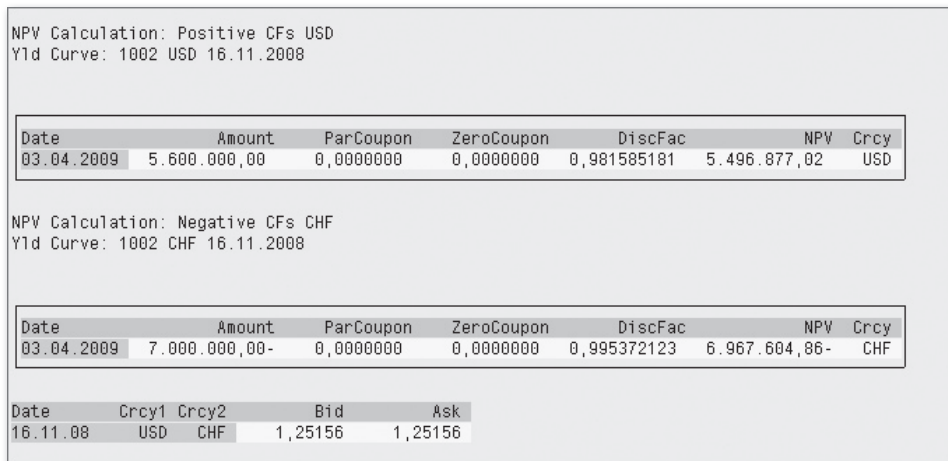


Figure 8.33 NPV Calculation Detail Log: Upper Screen Area

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.

Date	Crcy1	Crcy2	Bid	Ask
16.11.08	USD	CHF	1,25156	1,25156
Value		Crcy	Rate	Value: Displ.Crcy
5.496.877,02		USD	1,25156	6.879.695,89
Date	Crcy1	Crcy2	Bid	Ask
16.11.08	USD	CHF	1,25156	1,25156
Value		Crcy	Rate	Value: Displ.Crcy
5.496.877,02		USD	1,25156	6.879.695,89
Value		Crcy	Rate	Value: Displ.Crcy
6.967.604,86-		CHF	1,00000	6.967.604,86-
Total NPV in Evaluation Currency				
Value		Crcy	Rate	Value: Displ.Crcy
87.908,97-		CHF	1,00000	87.908,97-

Figure 8.34 NPV Calculation Detail Log: Lower Screen Area

The Calculation Bases screen shown in Figure 8.35 provides details on the yield curves used for both currencies and discount rates used.

Ref.intrate	Int.r.t.dte	No. of days	Par rate	Zero coupon	ZBDF
CHFLIB01D	16.11.2008	1	0,7133300	0,7133300	0,999980186
CHFMM_01M	16.12.2008	30	0,9800000	0,9800000	0,999184000
CHFMM_02M	16.01.2009	61	1,0700000	1,0700000	0,998190226
CHFMM_03M	16.02.2009	92	1,1200000	1,1200000	0,997145947
CHFMM_06M	16.05.2009	181	1,3000000	1,3000000	0,993506332
CHFMM_09M	16.08.2009	273	1,5000000	1,5000000	0,988752935
CHFSWP01Y	16.11.2009	365	0,7100000	0,7100000	0,992852839
CHFSWP02Y	16.11.2010	730	1,9479452	1,9600594	0,961403439
CHFSWP03Y	16.11.2011	1.095	2,1205479	2,1330123	0,937820354
CHFSWP04Y	16.11.2012	1.461	2,2324435	2,2460692	0,913799249
CHFSWP05Y	16.11.2013	1.826	2,3165389	2,3318712	0,889656614
	16.11.2014	2.191	2,3687556	2,3850372	0,866362348
	16.11.2015	2.556	2,4209724	2,4392422	0,842730798
	16.11.2016	2.922	2,4733321	2,4945052	0,818741745
	16.11.2017	3.287	2,5255489	2,5505079	0,794569092
CHFSWP10Y	16.11.2018	3.652	2,5777656	2,6073846	0,770192231

Figure 8.35 Yield Curve Details Used in Valuation

The EXCHANGE RATE used in the calculation is available in the same screen, as shown in Figure 8.36.

Date	Frn	To	Bid rate	Selling rate
01.01.2000	USD	CHF	1,25156	1,25156
01.01.2000	CHF	USD	79,90000	79,90000

Figure 8.36 Exchange Rate Details Used in Valuation

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.

CoCd	VA	VA name	PTyp	ValCl	ID number	ShrtNme	Sec. Acc't	SACGr	Portfolio	Contract	Fut. Acc't	Transaction	Status
3000	003	US-GAAP	60C	100								4000000005888	
3000	001	Operational	60C	100								4000000005888	

Figure 8.37 Executing Valuation Using Transaction TPM1

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.

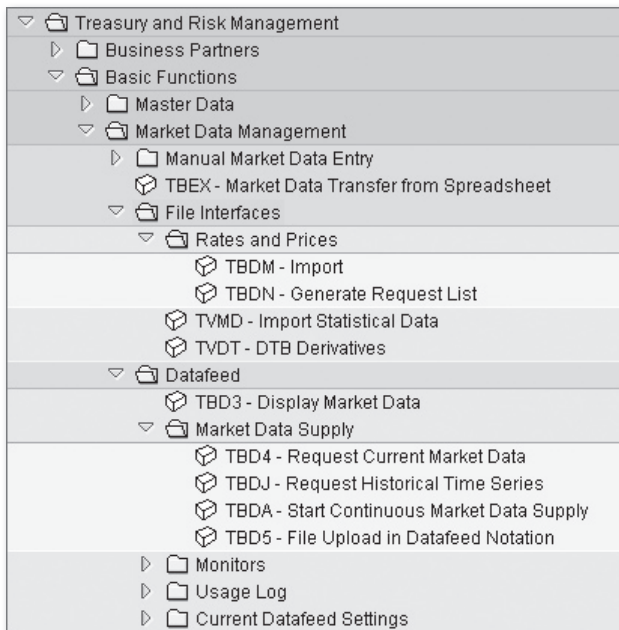


Figure 8.38 Market Data Feed Options

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.

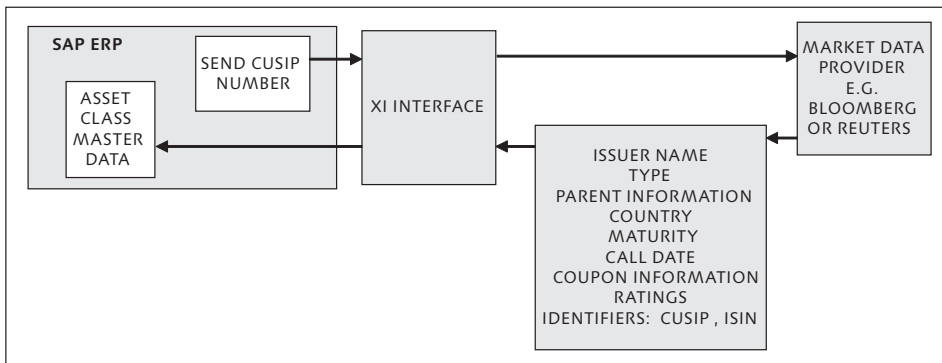


Figure 8.39 Transactional Market Data Interface

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.

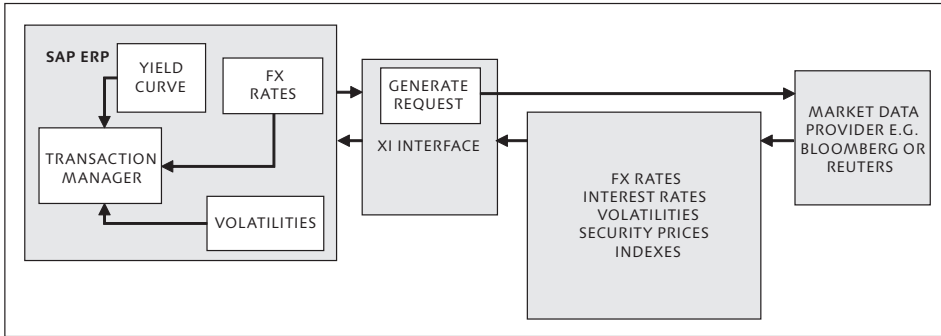


Figure 8.40 Securities Master Data Interface

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.

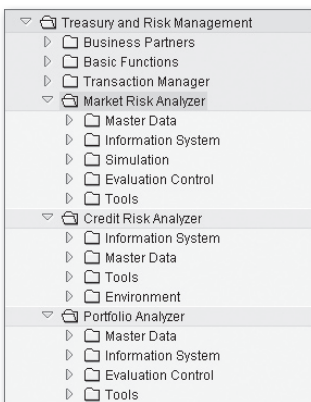


Figure 8.41 Analyzer Menu Path and Options

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 IMG • FINANCIAL SUPPLY CHAIN MANAGEMENT • TREASURY AND RISK MANAGEMENT • BASIC ANALYZER SETTINGS • VALUATION • MAINTAIN AUTHORIZATIONS/PROFILES/USERS, as shown in Figure 8.42.



Figure 8.42 Define and Set Up Evaluation Types

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.

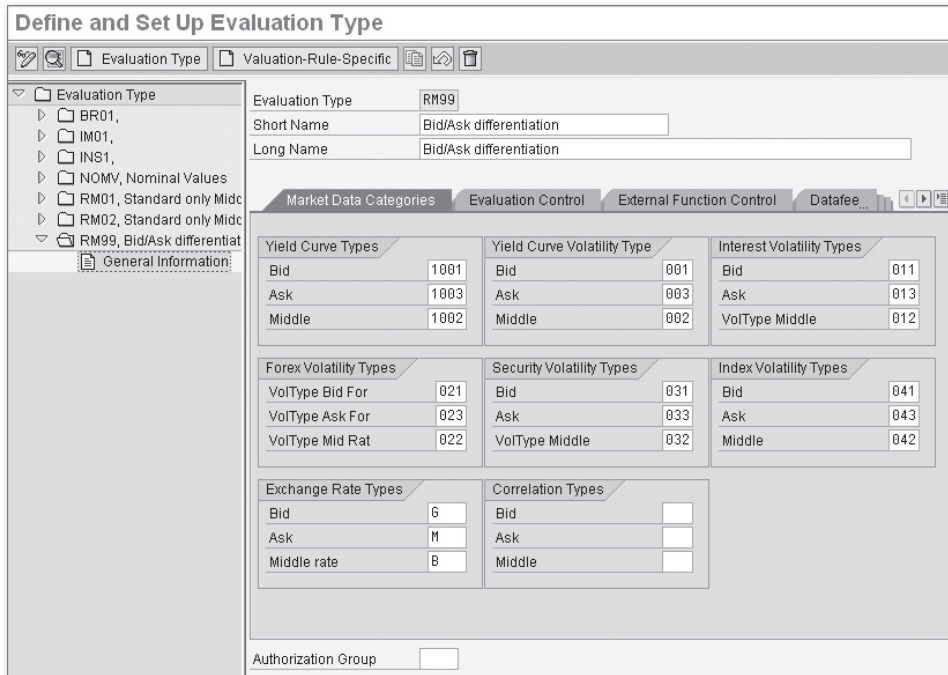


Figure 8.43 Evaluation Type Settings

The path for maintaining master data relating to evaluation type is shown in Figure 8.44.



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.

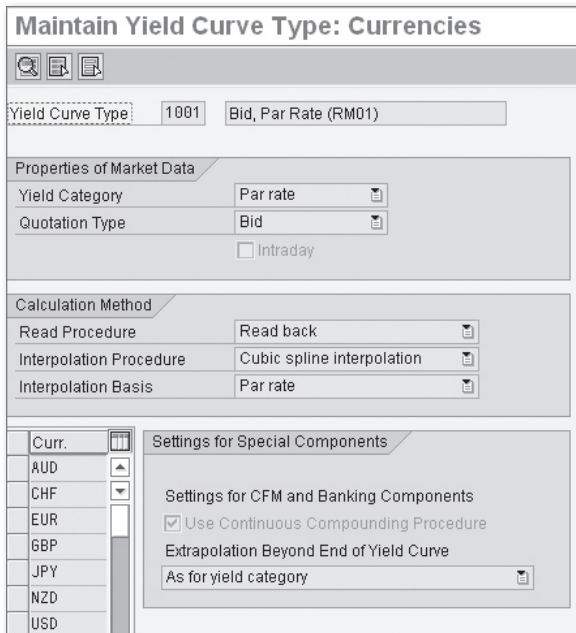


Figure 8.45 Define Yield Curve Type for Multiple Currencies

Selecting a specific currency enables the creation of the reference interest rates that comprise the yield curve structure, as shown in Figure 8.46.

Maintain Yield Curve Type: Reference Interest Rates

⏪ ⏩ 🗑️ 📄 📄 New ref.interest rate

Yield Curve Type 1001 📄 Bid, Par Rate (RM01)

Specify Yield Curve

Currency USD

Int.Calc.Method Act/360 📄

Calendar Factory calendar US standard 📄

YC Structure

Ref.Int.Rate	Name	Term	Time unit	Int.calc.met.	Markup/dow
USDMM_01DB	Depot 01 D Bid	1	Day	Act/360	0,0000000
USDMM_01MB	Depot 01 M Bid	1	Month	Act/360	0,0000000
USDMM_02MB	Depot 02 M Bid	2	Month	Act/360	0,0000000
USDMM_03MB	Depot 03 M Bid	3	Month	Act/360	0,0000000
USDMM_04MB	Depot 04 M Bid	4	Month	Act/360	0,0000000
USDMM_05MB	Depot 05 M Bid	5	Month	Act/360	0,0000000
USDMM_06MB	Depot 06 M Bid	6	Month	Act/360	0,0000000
USDMM_09MB	Depot 09 M Bid	9	Month	Act/360	0,0000000
USDSWP01YB	Swap 01 Y Bid	1	Year	Act/360	0,0000000
USDSWP02YB	Swap 02 Y Bid	2	Year	360/360	0,0000000
USDSWP03YB	Swap 03 Y Bid	3	Year	360/360	0,0000000
USDSWP04YB	Swap 04 Y Bid	4	Year	360/360	0,0000000
USDSWP05YB	Swap 05 Y Bid	5	Year	360/360	0,0000000
USDSWP10YB	Swap 10 Y Bid	10	Year	360/360	0,0000000
USDSWP20YB	Swap 20 Y Bid	20	Year	360/360	0,0000000
USDSWP30YB	Swap 30 Y Bid	30	Year	360/360	0,0000000

Figure 8.46 Reference Interest Rates for Yield Curve Type

These REFERENCE INTEREST RATES are in turn created with specific attributes and settings as required, as shown in Figure 8.47.

Change View "Reference Interest Rates": Details

New Entries

Ref.int.rate: USDMM_01DB

Yield Category: Par rate

Intraday

Name of Reference Interest rate

Description: Depot 01 D Bid

Long text: USD Deposit 1 Day Bid (RA)

Properties of Reference Interest Rate

Currency: USD

Int.calc.method: Act/360

Quotation type: Bid

Term: 1

Unit of Time: Day

Forward YC Type: 1001

Additional Information for Reference Interest Rate

Date from: 01.01.1800

Finan. center:

Calendar: Factory calendar US standard

Fixing period: 2-

Work. Day Rule: No shift

Figure 8.47 Create Reference Interest Rates

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.

Change View "Volatility Type View": Overview				
V. Type	V. desc.	V.rate cat	S/A vola	Stat.type
001	Yield Curve volatility bid	3		
002	Yield Curve volatility middle	2		
003	Yield Curve volatility ask	1		
011	Interest volatility bid	1		
012	Interest volatility middle	2		
013	Interest volatility ask	3		
021	Currency volatility bid	1		
022	Currency volatility middle	2		100
023	Currency volatility ask	3		
031	Security volatility bid	1		
032	Security volatility middle	2		
033	Security volatility ask	3		
041	Index volatility bid	3		
042	Index volatility middle	2		
043	Index volatility ask	1		
100	Volatility RiskMetrics			100
200	Volatility Basle directive			200

Figure 8.48 Volatility Types Used

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.



Figure 8.49 Manual Entry of NPV

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.

Change View "NPVs of OTC transactions": Overview

New Entries

NPVs of OTC transactions

Cont.Type	Co...	Transaction	Contr...	Price/NP...	Effective fro...	Net present value	Curr...	Clean price in displa...
Foreign Exchange	3000	4000000000000		001	20.03.2005		USD	
Foreign Exchange	3000	4000000000001		001	16.01.2005		USD	
Foreign Exchange	3000	4000000000001		001	31.01.2005	236.920,22	USD	236.920,22
Foreign Exchange	3000	4000000000588		001	16.11.2008	87.908,97-	CHF	87.908,97-
Derivatives	3000	6000000000000		001	01.01.2005		USD	
Derivatives	3000	6000000000000		001	25.03.2005	1.082.121,26-	USD	1.060.801,82-

Figure 8.50 NPV Table Entries

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.

Evaluation Parameters

Currency

Evaluation Type RM99

Key Date 21.11.2008

Clean price calculation

Intrinsic value calcul.

Separate NPV (In/Out) Total NPV = Total of In/Out

Figure 8.51 Transaction TPM60 Valuation Link to Evaluation Type

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.

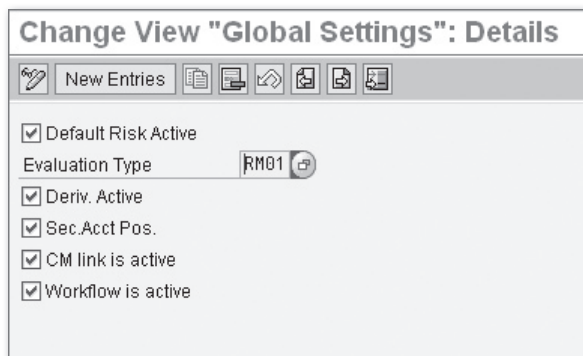


Figure 8.52 Activating Online Limit Checking Settings

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 (TRANSACTION TYPE). An example of a transaction that has failed a limit check is shown in Figure 8.53.

The screenshot shows the 'Create Fixed-Term Deposit: Structure' application window. The main window has several tabs: Structure, Administration, Other flows, Payment details, Cash flow, and Memos. The 'Structure' tab is active. The window displays the following information:

- Company Code: 1000 IDES AG
- Transactn: \INTERN\
- Product Type: 51A Fixed-term deposit: External
- Activity: 1 Contract
- Transactn Type: 200 Borrowing
- Business Partner: BKJPMORGUS JP. Morgan Chase // NEW YORK
- Borrowing Flow type: 1105 Borrowing / Increase
- Amount: 15.000.000,00 USD
- Term Start: 02.11.2008
- Term End: 02.02.2009

A dialog box titled 'Check run: Trans.: Display messages' is open in the foreground, displaying the following messages:

Typ	Message text	LTxt
<input type="checkbox"/>	Messages relating to transaction	
<input type="checkbox"/>	Internal limit(s) exceeded	
<input type="checkbox"/>	Limit for each product type/transaction type was exceeded	
<input type="checkbox"/>	Unable to find the recipient of the workflow	

The dialog box also has a toolbar with various icons for navigation and actions.

Figure 8.53 Limit Check Activated Message in Transaction Management

This form of limit control is set up using Transaction KLMAXLIMIT, as shown in the application path menu in Figure 8.54.

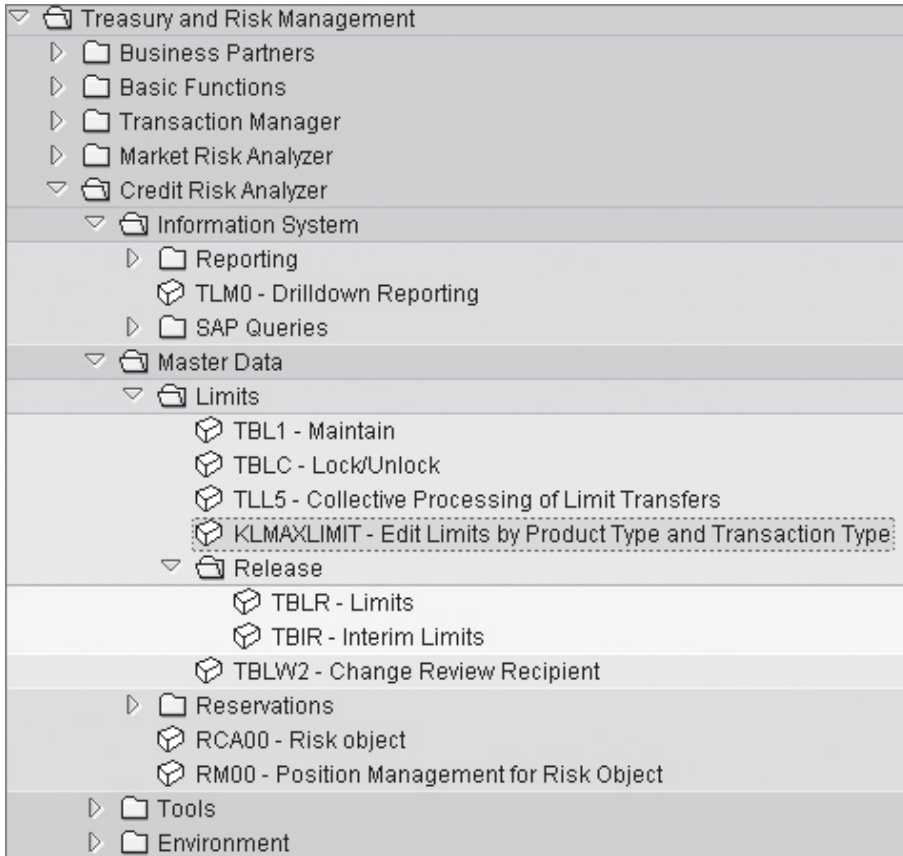


Figure 8.54 Menu Path for Transaction Limits and Release

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.

New Entries: Overview of Added Entries

Limit per Product Type/Transaction Type

Co...	PTyp	TTYp	Limit per Product Type/Tran...	Currency
1000	60A	101	1.000.000,00	USD

Figure 8.55 Limit Management by Product Type and Transaction Type

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.

Figure 8.56 Mass Release of Limits with Releaser Information

Reporting on Limit Breach

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

Figure 8.57 Transaction KLLC for Exceeded Limits by Transaction

The resulting report is shown in Figure 8.58.

Exceeded Limits by Product Type/Transaction Type

ID	Lim.	Pro.	FT	Tra	TT	Test	User	Amount on Out	Cry	Am.	C	Limit	L Cry	Date	T	Attributable Amr
T5	MH2	52A	Depr	100	Investmer	C5049437	50.000,00	USD	0,00	100,00	USD	29.08.2005	1.500.000,00			
T5	TB1	52A	Depr	100	Investmer	C5049437	50.000,00	USD	0,00	100,00	USD	29.08.2005	1.500.000,00			
T5	TB2	52A	Depr	100	Investmer	C5049437	50.000,00	USD	0,00	100,00	USD	29.08.2005	1.500.000,00			
T5	MH1	53A	Comr	100	Purchase	JENSENJ	40.000.000,00	EUR	0,00	30.000.000,00	EUR	05.07.2005	1.39.765.194,77			
T5	PB1	53A	Comr	100	Purchase	JENSENJ	40.000.000,00	EUR	0,00	30.000.000,00	EUR	05.07.2005	1.39.765.194,77			
T5	TR1	53A	Comr	100	Purchase	JENSENJ	40.000.000,00	EUR	0,00	30.000.000,00	EUR	05.07.2005	1.39.765.194,77			
T5	MH2	51A	FlkTr	100	Investmer	C5049437	5.000.000,00	EUR	0,00	5.000.000,00	EUR	13.07.2005	1.15.198.364,09			
T5	TB1	51A	FlkTr	100	Investmer	C5049437	5.000.000,00	EUR	0,00	5.000.000,00	EUR	13.07.2005	1.15.198.364,09			
T5	TB2	51A	FlkTr	100	Investmer	C5049437	5.000.000,00	EUR	0,00	5.000.000,00	EUR	13.07.2005	1.15.198.364,09			

Amount

Allowable Limit

Attributable amount based on different utilization limits

Figure 8.58 Transaction KLLC Report of Exceeded Limits by Transaction

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.

Limits: Choose Limit Types

Lim.	Name	Company Code	Business Partner	Limit Product Group	Portfolio	Trader	Currency as Limit Char.	Monitoring unit
051	DV05: CoCod /BP (Netting)							
121	DP12: CoCod / BP (Stlmt.Risk)							
191	DP19: CoCod / BP (Nominal) Net							
200	DP20: CoCod (Nominal)							
201	DP20: CoCod / BP (Nominal) Gro							
202	DP20: CoCod / LPG (Nominal)							
203	DP20: CoCod / INT-EXT(Nominal)							
204	DP20: CoCod / Trader (Nominal)							
205	DP20: CoCod/Trd./LPG (Nominal)							
206	DP20: CoCod/BP (Nom) Rel.Incl.							
207	DV20: CoCod/BP/LPG (Nominal)							

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.

Organization: CITIBANK, maintain relationships

Business Partner: CITIBANK | Citibank, N.A. / New York NY 10005

Overview | Is subsidiary of (1)

Relationship Cat. | Is subsidiary of (1) | Format | Hierarchy

Relationship to BP | CITI | From | to | Create

Business Partner	Details
<ul style="list-style-type: none"> CITIBANK <ul style="list-style-type: none"> CITIBANK / Citibank, N.A. / 111 Wall St / New York NY 10005 CITI <ul style="list-style-type: none"> Citibank / 53 Martin Place / Sydney NSW 2000 	

Figure 8.60 Maintaining Relationships for Limit Management

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.

Change View "Update Type Details": Overview

New Entries [Print] [Refresh] [Back] [Forward] [Home]

Update Type Details

UpdateType	CM relevant	Update Type Text
DE1000	<input checked="" type="checkbox"/>	Forward Purchase
DE1001+	<input checked="" type="checkbox"/>	Reverse Repo: Spot Purchase
DE1001-	<input checked="" type="checkbox"/>	Reverse Repo: Spot Purchase
DE1002+	<input checked="" type="checkbox"/>	Reverse Repo: Forward Sale
DE1002-	<input checked="" type="checkbox"/>	Reverse Repo: Forward Sale
DE1010+	<input checked="" type="checkbox"/>	Forward Accrued Interest +
DE1010-	<input checked="" type="checkbox"/>	Forward Accrued Interest -
DE1011+	<input checked="" type="checkbox"/>	Repo Accrued Interest +
DE1011-	<input checked="" type="checkbox"/>	Repo Accrued Interest -

Figure 8.61 Marking Update Types as Relevant for Cash Management

8.6 Reporting

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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