Derivative Cash Flows

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Objectives

- Illustrate the mechanics of collateral, margin and other cash flows for derivatives traded on various platforms
- Discuss the accounting presentation of receivables and payables related to cash collateral



Collateral Mechanics – Definitions

Definitions*

- ✓ <u>Exposure</u>: the netted value of all transactions between counterparties subject to the collateral agreement.
- ✓ <u>Threshold</u>: the amount of unsecured counterparty credit exposure a firm is willing to take.
- ✓ <u>Collateral Held</u>: the current value of collateral received.
- ✓ <u>Minimum Transfer Amount</u>: a threshold below which a collateral call is not made to avoid the transfer of relatively small amounts.
- ✓ <u>Collateral Call</u>: a demand for collateral, calculated as:

Exposure – Threshold – Collateral Held = Collateral Call, subject to Minimum Transfer Amount

*Terms provided to facilitate discussion; not to be considered legally enforceable definitions



Collateral Mechanics – Definitions

Definitions*

- ✓ <u>Initial Margin (IM)</u>: Margin collected at the initiation of transactions to cover the possibility of loss that would not be sufficiently mitigated by variation margin. Referred to as Independent Amount in an ISDA Master Netting Agreement.
- ✓ <u>Variation Margin (VM)</u>: Margin collected in a collateral call at a specified frequency, usually daily, based on the Exposure amount.
- ✓ <u>Coupon</u>: a derivative cash flow other than a collateral call, such as a swap coupon, option strike price, forward delivery amount, etc.



^{*}Terms provided to facilitate discussion; not to be considered legally enforceable definitions

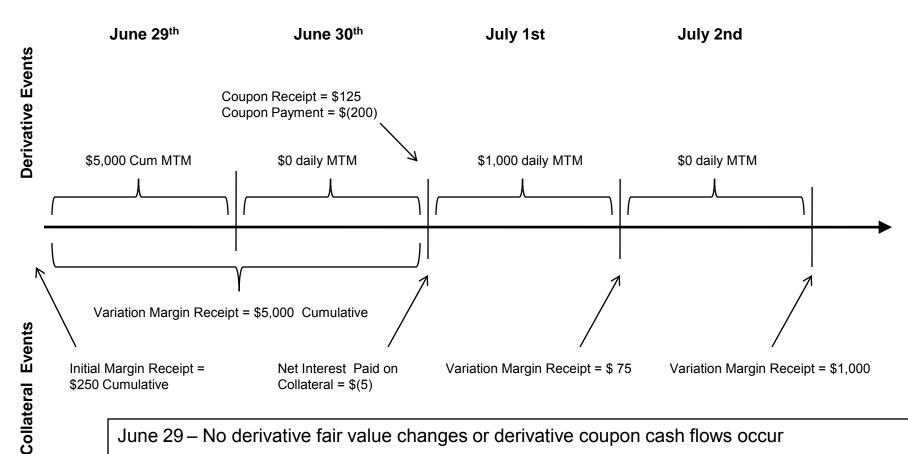
Example - OTC Derivative Cash Flows

- Bank A executed an ISDA Master Agreement (MNA) and Credit Support Annex (CSA) with Hedge Fund B (payment netting not elected)
- As of June 29, Bank A and Hedge Fund B have existing derivatives outstanding that result in a cumulative net unrealized gain of \$5 million for Bank A
- Various derivatives settlements occur on June 30; No other derivative fair value changes occur on June 30; Derivatives change in fair value due to market movements on July 1
- There is no threshold amount in the CSA; Initial Margin (IM) under the MNA and CSA is \$250 thousand and was paid by Hedge Fund B to Bank A; Cash variation margin (VM) is provided daily on the full net derivative position
- Variation margin is calculated based on end of day net position, and called and settled the following day
- \$ in thousands

Date	Assets Fair Value	Liabilities Fair Value	Net Amount	Collateral Call	Coupon Receipts / (Payments)	Interest on Collateral
(Closing position as of) June 29	60,000	(55,000)	5,000	-	-	-
June 30	59,875	(54,800)	5,075	75	125 / (200)	25 / (30)
July 1	60,875	(54,800)	6,075	1,000	-	-



Derivative and Collateral Cash flows for Bank A



June 29 – No derivative fair value changes or derivative coupon cash flows occur

June 30 – Derivative coupon receipts and payments occur resulting in changes in credit and liquidity exposure that will be mitigated with cash collateral

July 1 - Derivative fair value changes occur resulting in changes in credit and liquidity exposure that will be mitigated with cash collateral



Balance Sheet Presentation for Bank A

Financial Reporting of Derivatives and Related Collateral Balances (\$ in thousands), excluding Initial Margin:

	June 29 (LTD)	June 30	July 1
Derivative Assets	\$60,000	\$59,875	60,875
Derivative Liabilities	(55,000)	(54,800)	(54,800)
Collateral Payables - VM	(5,000) (5,000)		<u>5,075</u>
Net Reported Position	-	75*	1,000*
Cash - VM	5,000	5,000	5,075
Net Trading Gains - Cum	5,000	5,000	6,000
Net Interest Exp - Cum	-	(5)	(5)

^{*}Collateral call made by Bank A on July 1st for \$75 would be received on July 1st. As of June 30th Quarter end, this net uncollateralized open position would be presented as a net \$75 derivative asset until cash collateral was received the following day (July 1st) and the Payable to return cash collateral would be offset against the net derivative asset. Similarly, the \$1,000 unrealized gain on July 1st would be presented gross on the balance sheet until collateral is collected to secure it.



Agenda Paper 1B - Appendix A

Legal Counterparty to Principal Trade	Transaction Type	Settlement mechanism	Payment type	Frequency	Details	Unwind	Netting Rights Absent an Event of Default Description	IFRS Current Practice	US GAAP Current Practice
	Daily margined Exchange Traded Derivatives (Futures) - Variation Margin constitutes legal settlement					To the extent that variation margin has been paid the derivatives balance is considered settled (liability paid or asset monetised).			
	Non-daily margined options - Premium and Initial Margin is paid upfront and no Variation Margin over life	Two separate processes: 1. Settlement 2. Initial Margin	Premium and Initial Margin (upfront) and settlement (at exercise)	Trade date and option exercise date	Net by currency Initial margin is settled separately	Repayment of Initial Margin (if made in cash) and final settlement are settled gross through separate processes	Premium paid upfront	Netting of cash settled European options (PV of options) where under Eurex clearing conditions: - By counterparty - By maturity date - By currency	
LCH									
	Various daily margined centrally cleared and exchange traded derivatives (where Variation Margin does not constitute settlement), e.g. interest rate swaps and options	Single process	Coupon, Variation & Initial Margin, and interest	Once daily	Net by currency LCH/CME may make intra-day calls for Initial Margin; settled separately	Repayment of margin and final settlement are settled net by currency through combined process	Net settlement of coupon and margin amounts, by currency, is explicit	Netting of derivatives [and associated cash collateral payables & receivables] where enforceable under LCH regulations: - By counterparty - By currency - Across maturity dates	
			Coupon	Once daily	Net, by currency			+	Netting of derivatives where enforceable MNA is in place and associated cash collateral payables & receivables where enforceable CSA is in place: - By counterparty (either bilateral or CCP) - Across maturity dates - Across currencies
ICE Trust	Daily margined centrally cleared CDS contracts	Two separate processes: 1. Coupon 2.Margin & Interest	Variation & initial margin	Once daily	Net, by currency (with interest) ICE may make intra-day calls for Initial Margin; settled separately	Repayment of margin and final settlement of derivative	Net settlement of coupon amounts and, separately, margin amounts is implied	Netting of derivatives where enforceable under ICE rules: - By counterparty - By currency - By maturity date - By underlying credit	
			Interest on variation margin	Monthly	Net, by currency (with Variation Margin and Initial Margin)				
			Coupon	Once daily	Net, by currency	are settled gross through separate processes	Net settlement of coupon amounts and, separately, margin amounts is implied		
ICE Clear		Two separate processes: 1. Coupon 2.Margin & Interest	Variation & initial margin	Once daily	Net, by currency (with interest) ICE may make intra- day calls for Initial Margin; settled separately				
			Interest on variation margin	Monthly (coincides with daily margin when occurs)	Net, by currency (with Variation Margin and Initial Margin)				
Bilateral	All over the counter derivatives**	Three separate processes:** 1. Coupon 2. Margin 3. Interest on Margin Variation & In (some have to	Coupon	Once daily	Net, by currency if payment netting applied (client election) Gross if payment netting NOT applied (client election)	Repayment of Initial Margin and Variation Margin and final settlement of derivative are settled gross through separate processes	Payment netting - net settlement by currency within single transaction-can be expanded to netting across multiple transactions if elected by the client	Netting of cash settled derivatives where enforceable MMA is in place & payment netting is elected under an enforceable MNA (which is rare outside the United States): - By counterparty - By currency - By payment date	
			Variation & Initial Margin (some have thresholds)	Once daily	Net				
			Interest on Variation	Monthly	Net				



Appendix

Journal Entries



Journal Entries – Bank A - June 29 LTD

LTD Journal Entries as of June 29, 2011 (\$ in thousands)

1. Cash 250

Payable – IM Collateral

250

Description – Cash Initial Margin for derivatives under MNA

2. Derivative Assets 60,000

Derivative Liabilities 55,000

Trading Gains 5,000

Description – LTD mark to market gain of derivative positions

3. Cash 5,000

Payable –VM Collateral 5,000

Description – Cash collateral reflecting credit and liquidity exposure as of June 29



Journal Entries – Bank A - June 30

Journal Entries – June 30 (\$ in thousands)

1. Derivative Liabilities 200

Cash 200

Description – Settle coupon payments on interest rate swaps

2. Cash 125

Derivative Assets 125

Description – Settle coupon receipts on interest rate swaps

3. Interest Expense 5

Cash 5

Description – Net Interest expense paid on cash collateral held



Journal Entries - Bank A - July 1 and July 2

Journal Entries - July 1 (\$ in thousands)

1. Derivative Assets

1,000

Trading Gains

1,000

75

1,000

Description – Mark to market gain on derivative assets

2. Cash

75

Payable –VM Collateral

Description – Receipt of cash collateral related to June 30 cash coupon cash flows

Journal Entries - July 2 (\$ in thousands)

3. Cash

1,000

Payable –VM Collateral

Description – Receipt of cash collateral related to July 1 mark to market gain

