CME Group

Special Executive Report

S-6105 **February 1, 2012**

Addition of Price Alignment Interest to the "Cash Mark-to-Market" Performance Bond Method for Cleared OTC FX Spot, Forward and Swap Transactions, Effective Monday, February 13, 2012

As you were notified in CME Group Special Executive Report, S-5982, dated Tuesday, October 18, 2011, CME Group adopted on Monday, October 31, 2011, "cash mark-to-market" performance bonds for the cleared over-the-counter ("OTC") foreign exchange ("FX") spot, forward and swap transactions. These applied to all then currently listed and future product rollouts now totaling 12 cleared, cash-settlement OTC FX non-deliverable forward ("NDF") and 26 cleared, CME WM/Reuters OTC spot, forward and swaps. Effective Monday, February 13, 2012, this performance bond method will be enhanced by the addition of Price Alignment Interest ("PAI"), which brings CME centrally cleared OTC FX spot, forward and swap transactions in line with typical bilaterally held OTC FX transactions. Please note that these procedures are also consistent with those for CME's cleared interest-rate swaps and credit-default swaps.

CME Clearing is introducing PAI to ensure settlement variation amounts for cleared OTC FX forwards are treated consistently with those of CME's cleared Interest-Rate Swaps ("IRS") and Credit-Default Swaps ("CDS"). PAI is consistent and appropriate for all of these cleared products with daily mark-to-market amounts settled in cash.

If the forward has positive net present value, the position holder pays price alignment interest, and conversely if the forward has negative net present value, the position holder receives price alignment interest. The amount is calculated on the net realized cash flow, from the banking business day on which that amount was realized, to the next banking business day, and is annualized on an actual/360 day basis. This is a change in operational procedures only; there are no CME Rulebook changes needed.

Performance Bonds & Daily Cash Mark-to-Market with PAI - Based upon client input and demand, CME changed its cleared OTC FX spot, forward and swap Transactions product performance bond (margin) regime from a "collateralization mark-to-market" to a "cash mark-to-market" method, effective Monday, October 31, 2011 (there was no open interest at the time). This change was consistent with the new margining system described in CME Special Executive Report (SER), S-5954, dated Tuesday, September 27, 2011, where CME announced the rollout of 26 new FX pairs for OTC cash settlement CME WM/Reuters spot, forward and swap transactions, and 11 new FX pairs for traditional OTC cash settlement NDF transactions, which were to be added to the listed cash-settlement OTC USD/Chilean Peso Spot, Forward and Swap products. Likewise, based upon client input and demand, CME is adding PAI to the cleared OTC FX cash mark to market performance bond calculations. This change is consistent with the current performance bond mechanism for CME's cleared Interest-Rate and Credit Default Swaps. When market participants are required to post a cash mark-to-market amount

for a cleared OTC FX forward position, that market participant is reimbursed the interest equivalent on those newly posted funds. Similarly, those market participants receiving the cash mark-to-market amount for a cleared OTC FX forward position are charged the interest equivalent on those newly credited funds to their account. This PAI performance bond mechanism adjustment makes the CME cleared OTC FX market more aligned with the underlying OTC FX forward market.

CME Clearing has deployed the SPAN system to establish performance bond or "margin" requirements for OTC FX spot, forwards and swaps. Initial performance bond requirements are established at levels that are consistent with observed levels of volatility in the particular currency pairing and generally aligned with initial margin levels applied to current CME FX futures and option contracts, where applicable. These risk components of the clearing system are unchanged with implementation of PAI to the "cash mark-to-market." Variation margins may be satisfied with the posting of appropriate amounts of collateral, where CME Clearing collects and pays in cash between the counterparties each day.

CME Clearing accepts as collateral cash or any other instruments currently designated as approved collateral for posting for performance bonds. In order to calculate variation requirements, settlement prices are established for each contract and for each delivery date referencing data collected from a variety of market sources. Appendix 1 is a detailed description of the "cash mark-to-market" method of performance bond administration with the addition of PAI. The difference between "cash mark-to-market" and the former "collateralization mark-to-market" is also explained.

If you have any questions, please contact either Craig LeVeille (email: Craig.LeVeille@cmegroup.com or ph. 312-454-5301 or Steve Youngren (email: Steve.Youngren@cmegroup.com or ph: 312-930-4583).

Appendix 1

CME Forwards with Cash Mark-To-Market

In accordance with customer demand CME has begun clearing privately-negotiated transactions in forwards with cash mark-to-market.

Until October 18, 2011, all forwards cleared by CME had a collateralized mark-to-market. Each day, for each open forward trade, mark-to-market is calculated, from original trade price to the current end-of-day settlement price. These amounts are netted together and "collateralized". In other words, if a negative number (a loss), they increase the initial margin (performance bond) requirement, thereby increasing the amount of collateral that must be posted to meet that margin requirement. If a positive number (a gain), they decrease the initial margin requirement.

With cash mark-to-market implemented on October 18, 2011, the mark-to-market value for the previous clearing business date is subtracted from the mark-to-market amount for the current clearing date. These amounts are netted down and become part of the total banked cash flow for the currency in which they are denominated. It is a very simple change for this cash mark to market as opposed to collateralized mark to market.

There is an additional feature for FX forwards, and in particular for Non-Deliverable Forwards ("NDF's") – where one currency of the pair is not bankable. We call this a forward where the cash mark-to-market is flipped, or inverted.

Take for example a forward on the exchange rate between the U.S. Dollar ("USD") and the Chilean Peso ("CLP"). The quantity is specified in USD, and the price is quoted as a specified amount of CLP per one USD. Normally, the mark-to-market amount would be denominated in CLP, also referred to as the contra currency. But with the flipped mark-to-market, the amount is converted to USD by dividing by today's end-of-day settlement price for the contract.

Calculating Mark-to-Market and Change in Mark-to-Market

In the normal case, the mark-to-market amount for a forward is calculated as:

- Subtract the original trade price from the end-of-day settlement price.
- Express the trade quantity as a positive number for a buy or a negative number for a sell.
- Take the product of the price difference, the trade quantity, the contract value factor, and the discount factor.
- Round normally to the normal precision of the currency in which the mark-to-market amount is denominated. (the contra currency for an FX forward)

In other words:

$$(S - T) * Q * CVF * DF$$

Where:

S is the end-of-day settlement price

T is the original trade price
Q is the trade quantity
CVF is the contract value factor
DF is the discount factor

In the inverse case, the mark-to-market amount is calculated in the exact same way, except that it includes a division by the daily settlement price:

- Subtract the original trade price from the end-of-day settlement price.
- Express the trade quantity as a positive number for a buy or a negative number for a sell.
- Take the product of the price difference, the trade quantity, the contract value factor, and the discount factor.
- Divide this result by the end-of-day settlement price.
- Round normally to the normal precision of the currency in which the mark-to-market amount is denominated. (the primary currency for an FX forward)

In other words:

[(S – T) * Q * CVF * DF] / S

In either case, the settlement variation amount to be banked is calculated by subtracting the mark-to-market amount for the previous clearing business date from the amount for the current business date.

Cash-Settled and Physically-Delivered Forwards

At maturity, forwards with cash mark-to-market can be either cash-settled or physically-delivered, exactly as for forwards with collateralized mark-to-market.

For a cash-settled forward, at contract maturity (end-of-day on the “clearing settlement date”):

- The mark-to-market amount is set to zero.
- We then calculate the settlement variation amount to be banked exactly as on any other day – by subtracting the previous day’s value for mark-to-market from the current day’s (zero) value.
- The mark-to-market amount is then calculated one final time – from original trade price to the final settlement price and banked as part of the final settlement of the contract.
- The initial margin requirement is also set to zero, exactly as for any other cash-settled forward or future.
- The next morning the cash moves at the bank, and any collateral deposited to meet the initial margin requirement may be withdrawn.

For a physically-delivered forward, at contract maturity (end-of-day on the clearing settlement date):

- The mark-to-market amount is set to zero.
- We then calculate the settlement variation amount to be banked exactly as on any other day – by subtracting the previous day’s value for mark-to-market from the current day’s (zero) value.

- The invoice amount, calculated at original trade price, is included in the total amount to be banked.
- On the value date for physical delivery, the position is removed. This causes the initial margin requirement to be set to zero, and any collateral deposited to meet it may be withdrawn.

There is now a second additional feature for FX forwards, Price Alignment Interest or PAI and it applies to both (1) non-deliverable forwards (NDF's) – cash-settlement forwards where one currency of the pair is not bankable and (2) cash-settlement WM/Reuters OTC FX forwards.

CME Clearing is introducing PAI to ensure settlement variation amounts for cleared OTC FX forwards are treated consistently with those of CME's cleared Interest-Rate Swaps and Credit-Default Swaps. PAI is consistent and appropriate for all of these cleared products with daily mark-to-market amounts settled in cash.

If the forward has positive net present value, the position holder pays price alignment interest, and conversely if the forward has negative net present value, the position holder receives price alignment interest. The amount is calculated on the net realized cash flow, from the banking business day on which that amount was realized, to the next banking business day, and is annualized on an actual/360 day basis.

Data Formats

Exactly as before, a forward is denoted with a product type code of **FWD**, and the settlement method is denoted as either **CASH** (for cash-settled) or **DELIV** (for physically-delivered).

There are now three possible values for the "valuation method" for forwards:

- The existing value **FWD** will continue to mean that mark-to-market amounts are collateralized.
- A new value **FWDB** ("forward banked") means a forward with cash mark-to-market.
- A second new value **FWDBI** ("forward banked inverse") will be used for FX forwards with cash mark-to-market where the value is flipped from the contra currency to the primary currency.

Exactly as before, the **FinalSettlCcy** attribute denotes the currency in which the mark-to-market amount is denominated, and the **Ccy** attribute on **Amt** elements also specifies the currency.

Exactly as before, the **FMTM** amount type will denote mark-to-market. For forwards with cash mark-to-market, a new **IMTM** amount type – "incremental mark-to-market" – denotes the change in mark-to-market from the previous clearing business date – in other words, the settlement variation amount.

Exactly as before, the **DLV** amount type represents either the final mark-to-market amount to be banked (for cash settled contracts) or the invoice amount (for physically-delivered contracts.)

To simplify bookkeeping system processing, a new **BANK** amount element represents the total cash to be banked, and a new **COLAT** amount element represents the total amount to be

collateralized. (For forwards with cash mark-to-market, the **COLAT** element will always have a value of zero.)

Margining in SPAN

There are no changes to how performance bond (initial margin) requirements are calculated in SPAN for portfolios including forwards with cash mark-to-market. Simply divide the true notional position by the equivalent position factor for the product, round the result up (away from zero) to the nearest integer, and feed the resulting "marginable positions" to SPAN, exactly as before.

Production Ready

Forwards with cash mark-to-market and the PAI enhancement are now available in CME's "Production" environment. For more information please contact CME Clearing at 312-207-2525.