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OCC Supervisory Letter from Scott Waterhouse to Leat and Watson Re EMEA Structured Credit Derivatives Examination

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Supervisory Letter (CITI-2007-17)

Comptroller of the Currency
Administrator of National Banks

National Bank Examiners
880 Third Avenue, 5th Floor
New York, NY 10022
212-527-1020

May 8, 2007

Mr. Chad Leat, Managing Director
Co-Head of Global Credit Markets
Corporate and Investment Bank
Citigroup, Inc.
390 Greenwich Street, Fourth Floor
New York, NY 10013

Mr. Mark Watson, Managing Director
Co-Head of Global Credit Markets
Corporate and Investment Bank
Citigroup, Inc.
33 Canada Square
Canary Wharf
London E14 5LB
United Kingdom

Subject: EMEA Structured Credit Derivatives Examination

Dear Messrs. Leat and Watson:

We recently completed an assessment of the EMEA Structured Credit Derivatives (ESCD) business. We focused on the quantity of risk and the quality of management oversight, as well as corrective actions taken to address prior regulatory concerns. In addition, we reviewed the ESCD's Quantitative Analytics (QA) efforts to better understand the modeling framework and controls. We arrived at our conclusions through meetings with the business and control functions and through reviews of management information, risk and control self-assessments, new product proposals, and model documentation.

Conclusions

- Price and transaction risks in the ESCD business remain high. Risk taking on the ABS Correlation desk has increased in the last year.
- Management and control oversight have significantly improved and are now satisfactory. Notable progress has been made by the new management team in upgrading control and capacity analysis, new product oversight, and the risk management and infrastructure supporting the Credit Correlation desk.
- We identified two Matters Requiring Attention. These pertain to the Asset Backed Securities (ABS) Correlation desk and Profit and Loss Attribution Analyses (PAA).

Matters Requiring Attention (MRA)

ABS Correlation Desk

Risk controls and reporting for the ABS Correlation desk need upgrading to ensure that they adequately measure and reflect emerging business risks. Recent market events have highlighted new liquidity and basis risk considerations. In addition, the introduction of ABS index tranche products may trigger changes in market pricing and the risk management of correlation. Management should also assess the performance of desk and independent risk management processes (e.g., Independent Market Risk, Product Control, etc) during the recent market volatility and determine whether further reporting or control enhancements need to be added to the existing ABS Correlation remediation program.

Profit and Loss Attribution Analyses

While considerable progress has been made in upgrading the quality and timeliness of PAA analysis and reporting, further work is needed before this remaining MRA from the 2005 examination is fully addressed. Given the high risk nature of this business, it is important that risk be appropriately dimensioned. The PAA for Credit Correlation can have significant unexplained variances on days of large market moves, and additional analysis of the impact of gamma on key products is needed. The QA staff should perform additional analysis that would be useful to Product Control in determining future improvements to this process. Additionally, the existing PAA process for ABS Correlation needs to be expanded to more closely approximate the analyses performed for Credit Correlation. Planned changes to the ABS process for October 2007 should be expanded to include this requirement.

Summary of Findings

Price Risk remains high. ESCD's trading activities are complex and involve the management of both price and credit risk. Presently, the most significant credit exposure is managed by the ABS Correlation desk, as it holds a large position in US subprime mortgages with limited liquidity and hedging opportunities. While growth in bespoke CDO structuring has been modest, this activity generates the most complex residual risks in the business. The new desk head has focused on more effectively analyzing and hedging second order risks in this book. Going forward, new business initiatives on both the Credit Correlation and Structured Illiquids desks will likely involve increased assumption of gap risk.

Price risk management has significantly improved and is satisfactory. The most notable improvements have been in desk oversight, analytical capabilities, and Capital Markets Approval Committee (CMAC) processes. New business and trading managers have introduced a number of strong practices, including monthly business reviews, more disciplined residual risk management, and clearer global risk management responsibilities. EMEA CMAC oversight of new product and higher risk transactions is effective and is a meaningful point of control in ESCD. A large number of ESCD proposals are escalated to CMAC, which triggers comprehensive independent review and senior management discussion of individual transactions.

The rapid pace of business and product developments necessitates continued re-evaluation of the adequacy of market risk controls and infrastructure. Independent Market Risk Management is working on a number of organizational and product initiatives to keep pace with current business developments. As successful execution of these projects is critical, we encourage ESCD to incorporate discussion of progress on these initiatives and market risk control and capacity into monthly business reviews.

ESCD's QA team effectively performs its duties related to model development and ensuring compliance with the bank's Model Control Policy. QA works closely with the desk and maintains a strong dialogue with control functions, most notably Product Control and IMRM. QA has recently completed a number of substantial analytic projects which have allowed the desk to hedge more effectively and better assess modeling alternatives. While model documentation is generally thorough, we suggest that QA better document testing of developer assertions and the impact of model limitations.

Transaction risk remains high. While operational risk measures have improved, ESCD transactions remain very complex and require highly specialized expertise in all control areas to be properly supported. Correlation products involve considerable valuation and risk management uncertainty, which present significant challenges to Product Control. While processing automation has improved, some elements of trade capture for both Credit and ABS Correlation require duplicative transaction handling and spreadsheet-based reconciliations. We observed adequate compensating controls in situations where critical functions are manual in nature.

Transaction risk management has improved and is satisfactory. Governance processes related to control and capacity have been strengthened and reflect strong business sponsorship, increased dialogue between business and control functions, and development of control and capacity metrics and management action triggers. The Business Unit Manager oversees this governance program, and it is most fully implemented in Credit Correlation. In addition, Product Control has made substantial improvements to PAA and reserving processes for the Credit Correlation desk.

The current technology infrastructure supporting ABS Correlation risk management is not adequate for the planned level of growth, and will be replaced this quarter by the Market Analytics Risk System (MARS). MARS delivery dates were accelerated in October 2006 when the business began to experience strong growth. Business Management has established various metrics to track systems stability and operational risk throughout the technology transition, and indicators are stable at present. MARS will provide improved information to downstream control processes, and management has committed to upgrading reserving, PAA, and market risk feeds by October 2007.

Within 30 days of receipt of this letter, please provide a formal response addressing each of the matters requiring attention discussed above, including a projected date for corrective actions. Please contact National Bank Examiners Andrea Vourvoulis or Ron Frake at (011-44) 207-894-0197 or (212) 527-1043 respectively, if you have any questions or comments regarding this examination or the issues noted above.

Sincerely,



Scott Waterhouse
Examiner-in-Charge
Large Bank Supervision

cc: D. Bushnell, G. Crittenden, R. Druskin, M. Helfer, B. Howard, L. Kaden, T. Rollauer,
M. Wong, T. Maheras, R. Barker, E. Duke, E. Greene, Chron

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