

An Overview of the Emerging Market Credit Derivatives Market

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Executive Summary

In conjunction with the Committee on the Global Financial System work group project on foreign direct investment in emerging market financial sectors, staff of the U.S. Federal Reserve Bank of New York reviewed in some detail the market for emerging market credit derivatives ("EMCD") and their use by banks to hedge emerging market credit risks. This note provides a brief overview of the development and characteristics of this market, and highlights relevant findings from our discussions with U.S. commercial and investment banks active in the market.¹

In short, the EMCD market has grown rapidly in a short period of time, and market participants contacted for this survey were optimistic about its future expansion. However, the market also appears to face a number of challenges—reflecting accounting, legal, disclosure, and liquidity issues characteristic of a number of emerging market countries—that appear to prevent more extensive use of EMCDs by banks as balance sheet management tools. That said, EMCD were viewed more positively than alternative forms of country risk mitigation (such as political risk insurance or nondeliverable forwards), with participants citing the relatively broader coverage of risks provided for by EMCD.

Product Description

The emergence and application of EMCDs parallels that of the broader credit derivatives market in the second half of the 1990s.² In their various forms, EMCD essentially involve the bilateral contractual transfer of credit risk on an underlying class of reference obligations of a particular reference entity (sovereign or corporate) between participants. EMCD allow a range of investment and hedging opportunities to participants, some examples of which include: alternative tenors than those available in the cash market; directional and relative value trades; leveraged plays; hedging of bank lending to emerging market borrowers (while maintaining client relationships); creating/hedging bond positions by mutual funds and pension funds; and alternative investments by local financial institutions and investors, particularly in shorter-dated instruments.

The most common products include credit default swaps, credit-linked notes ("CLNs"), OTC deposits, and synthetic collateralized debt obligations ("synthetic CDOs"). Credit default swaps are the most basic EMCD product and involve payment of a premium by one counterparty (protection buyer) in exchange for a contingent payment by another (protection seller) in the event of a specified credit event vis-à-vis a reference obligation or entity (typically, but not exclusively, sovereign bonds or bonds of blue-chip corporates). Credit default swaps are based

¹ This note reflects the findings and judgments of the authors and not necessarily the views of the Federal Reserve Bank of New York or the Federal Reserve System. The authors gratefully acknowledge the comments of Diane Virzera in the development of this paper.

² For an overview of the global credit derivatives market, see British Bankers' Association Credit Derivatives Report 2003/2004, or FitchRatings "Global Credit Derivatives: A Qualified Success," September 24, 2003. For more detail on emerging market credit derivatives, see in particular the May 1, 2003 report by Deutsche Bank, "Emerging Market Credit Derivatives: Market Overview, Products, Analyses, and Applications." The latter is one of the few such analyses, and was a significant source of information for this overview.

on standard ISDA contract documentation, frequently involve standardized contract sizes, and, in the case of the most liquid underlying sovereign credits and a limited number of blue-chip corporate credits, enjoy an active broker market with dealers quoting two-way pricing for standard contract sizes

Credit-linked notes and OTC deposits are moderately more complex products that eliminate the exposure of protection buyers to the counterparty risk of protection sellers and, as on-balance-sheet instruments, allow those investors restricted from engaging in OTC derivative transactions to obtain similar economic benefits as offered by credit default swaps. CLNs involve upfront payment by the protection seller of par value for a note, in exchange for a spread paid by the note issuer reflecting both the default probability of the reference entity and issuer creditworthiness. If a credit event occurs, the note redeems early and the investor takes delivery of a defaulted asset of the reference entity from the CLN issuer, with the investor sustaining a loss based on the reference asset's loss.

OTC deposits are similar to CLNs, but involve the placement by the protection seller of a deposit with the protection buyer - rather than upfront payment of note principal - in exchange for a coupon incorporating the premium for default protection on a reference asset together with a spread reflecting issuer credit risk. In a credit event, the depositor typically forfeits the deposit and takes physical delivery of the defaulted underlying reference asset. OTC deposits are not Euroclearable and are not listed and are thus generally cheaper and easier to effect.

Synthetic CDO's are among the most complex EMCD products. Synthetic CDOs are typically "structured" transactions in which a special purpose entity ("SPE") is established to sell credit protection on a range of underlying assets via individual credit default swaps. The SPE in turn issues several prioritized tranches of notes to investors, with note proceeds typically invested in collateral consisting of high-quality government paper to meet contingent credit default swap payments, while noteholders (in order of seniority) receive both cash flows on the underlying collateral and premiums on the SPV default swaps. Synthetic CDO's provide an attractive way for banks and other financial institutions to transfer credit risk on pools of loans or other assets without selling the assets.

Credit derivatives may involve single name reference assets or a basket of names and can be customized to meet investor needs. Of the major products, sovereign single-name credit default swaps appear to be the most liquid. Transactions on corporate credits tend to be more customized and structured, with CLNs, OTC deposits, and structured default swaps most prominent.

The average size of trades in the interdealer market is generally \$5 million, reflecting the standardization of contract sizes. Bid/offer spreads average 5-50 basis points, but during periods of market stress, bid/offer spreads can be very sizeable (e.g., 500 basis points in the case of Brazil). For some highly liquid credits (e.g., Mexico) it is generally possible to get quotes for credit default swaps from 1-10 years. By contrast, the high-grade emerging market corporate default swaps that are available are mostly only quoted at 5 years. In the event of credit default, CDS settlement typically takes place via physical delivery of the underlying reference asset (and not cash). EMCD pricing tends to closely track the underlying reference asset, with pricing for credit default swaps (the most basic EMCD) generally expressed as a premium to the spread over LIBOR at which comparable maturity bonds of the reference entity trade in the cash market (with bonds generally used to hedge credit derivative positions and dealer financing costs closely related to LIBOR).

Market Overview

While a relatively small share of the overall credit derivatives market, EMCD have grown significantly since their inception in 1996. However, firm data on the precise size of the EMCD market is difficult to obtain, reflecting similar issues regarding the broader credit derivatives market. Most recent estimates tend to center around a figure of roughly \$300 billion of notional contracts outstanding. The British Bankers' Association bi-annual Credit Derivatives Report for 2003/04 finds that out of the \$3.5 trillion total notional value of credit derivative contracts outstanding at end-2003, roughly \$250 billion, or seven percent, were contracts written on sovereign emerging market assets. The BBA report projects that sovereign EMCD will grow roughly in line with the overall credit derivatives market to reach \$660 billion in 2006.

The market encompasses roughly under 700 underlying credits, of which some 170 are considered liquid. Roughly 30 of the underlying reference entities are emerging market sovereigns. Liquidity appears to be highly linked with that of the underlying reference asset, with Mexico, Brazil, and Russia and other large sovereign issuers standing out, while the corporate EMCD market appears dominated mainly by quasi- sovereigns, blue-chip firms, and companies with large FX revenues, again reflecting the ability to hedge in the cash market. Particularly liquid corporate names in recent years have included the large Russian oil and gas companies, the Mexican and Brazilian energy companies, and selected Asian names. The market for credit derivatives covering credits of emerging market banks appears to be limited.

In terms of trading volume, a survey by the Emerging Market Traders Association shows annual trading volume of \$197 billion in 2003. The survey also shows significant recent growth, with 2H03 volume of \$125 billion, 74% greater than trading in the first half of the year.³ According to EMTA, market participants cited the introduction of EM Credit Default Swap Indexes, such as JP Morgan's TRAC-X index in August 2003, as contributing to increased trading activity.

EMTA trading survey results at the regional level show some significant contrasts with the regional distribution of outstanding emerging market sovereign debt, with trading volumes split as follows: 41% Asia 41%, Latin America 39%, Eastern Europe 14%, and the Middle East and Africa 6%.⁴

To put these figures in context, outstanding notional EMCD of roughly \$300 billion is similar to the market capitalization of the EMBI Global index (\$265 billion as of end-March, 2005), but is relatively small vis-à-vis total external debt securities issued by, and BIS cross-border bank lending to, borrowers in emerging market countries (\$737 billion as of December 2004 and \$887 billion as of September 2004, respectively) and gross local claims of \$644 billion as of March 2004.⁵ By trading volume, EMCD volumes were only roughly 6% of total emerging market debt trading volume for the second half of 2003 according to EMTA's surveys. Finally, it is important to bear in mind that notional values of EMCD contracts likely include potentially significant double counting, as market participants may report both sides of the same trade.

Major participants include large commercial and investment banks, investment managers (including mutual funds, pension funds, and insurance companies), commodity traders, and hedge funds. Market participants appear to have been largely stable, with one study participant

³ See 2003 Annual Emerging Market Credit Derivatives Volume Survey, May 12, 2004.

⁴ Regional weights in JP Morgan's EMBI Global index at end-March 2005 were: Latin America 57%, Europe 25%, Asia 12%, and the Middle East and Africa 6%.

⁵ Bank for International Settlements, Quarterly Review

noting that, in most cases, the participant's firm dealt with the same counterparties as they did 5 years ago—although often in the form of newly-established "hedge funds" often affiliated with major investment banks.

Although informational limitations hinder quantification, some regularities appear to exist with respect to the end users of EMCD products. Anecdotal evidence suggests that commercial banks are generally net credit "protection buyers" (see product descriptions above) – using credit derivatives to manage balance-sheet risk, while investment managers are generally net "protection sellers" – using credit derivatives as an efficient means to establish potentially profitable "synthetic" exposures to underlying credit risks. By contrast, commodity traders, investment banks, and hedge funds regularly take different sides to transactions, driven by their particular market views and trading strategies.

The interview results, however, suggest that the market making activities of both commercial and investment banks dwarf their hedging or balance sheet management uses by such institutions. While detailed data are not available, EMCD market making appears to be dominated by four or five major dealers.

Product Effectiveness in Management of Country Risk

In general, the discussions found that current EMCD activity by banks is dominated by trading and market making. By contrast, hedging of balance sheet risks appears relatively limited, reflecting restricted EMCD liquidity—especially for corporate names—and other limitations inherent in credit derivatives as a risk management tool.

In terms of hedging, banks reported that sovereign credit default swaps are often used to hedge non-sovereign exposures, given the limited liquidity in credit derivatives for all but the largest "quasi-sovereign" corporate names. However, sovereign credit default swaps generally only offer effective hedges in cases where a bank's non-sovereign exposures are well-diversified—and are therefore broadly correlated with underlying sovereign risk rather than tied to individual issuer risk. Importantly, banks appear to limit buying credit default protection from local market providers, and assess the sophistication and extent of local exposures of counterparties (particularly hedge funds) to minimize counterparty risk.

Banks expressed greatest interest in the use of credit derivatives to manage country risk (compared to alternative forms of protection, such as political risk insurance or NDFs), citing their flexibility and improvements in standard contractual language, and their relatively broader coverage of risks.⁶ Credit derivatives could transfer only a limited set of "country" risks however. In particular, many important risks associated with direct financial sector investment by banks in emerging markets—including currency, convertibility, political and legal risks—are at best only imperfectly hedgeable through credit derivatives.

Beyond this, participants noted a number of product and emerging market-specific issues that place important limitations on potential growth of the EMCD market, particularly with respect to corporate credits. These mainly included diminished liquidity stemming from informational issues and a lack of depth reflecting a typically insufficient local emerging market investment

⁶ In this vein, credit default swap documentation typically provides that the protection seller assumes the risk of loss should different types of country risk events result in a reference entity's default on an obligation -for example, if the reference entity claims that it is illegal or impossible to pay, if there has been a change in applicable law or rule, or if exchange controls or capital restrictions have been imposed. See Section 4.1 of the 2003 ISDA Credit Derivatives Definitions.

base, but also, historically at least, uncertainty surrounding the definition of "credit events" triggering payment in standard credit derivatives contracts (particularly with respect to the application of "restructuring" credit events to sovereign credits).

Informational Issues

At a general level, the global credit derivatives market remains by and large an investment grade market, with investment grade credits making up 84% of the universe of underlying reference entities in the overall market at the end of 2003.⁷ In part this stems from the informational needs of the rating agencies and of investors, which can be challenging in an emerging markets context.

In particular, participants explained that it is frequently difficult to get sufficient data to enable investors and other market participants to do comparative risk analysis for emerging market corporate borrowers as the largest corporate borrowers in emerging markets often bypass the local bank lending market and access funding primarily through international equity or bond markets. Hence sufficient loan-loss histories (company-specific and comparative benchmarks) are not available to properly analyze and price credit derivatives.

Particular informational difficulties arise in trying to structure credit derivatives covering "multiple-name" emerging market corporate credits, such as synthetic CDOs. These include both the lack of well-developed loan-loss history on corporate borrowers and the general overall "cloud of country risk uncertainty" that overshadows analysis of specific company credit risks—with synthetic CDOs generally requiring credit ratings and credit loss histories—both of which are difficult in the emerging market context.

Described differently, typically there is insufficient i) default history, and ii) portfolio diversification to construct emerging market synthetic CDOs. Given the high correlation of emerging market risk, even with 100 different corporate names from different countries in a CDO, the effective number of uncorrelated credits would typically be closer to one-tenth of this amount. As a result, an emerging market CDO requires a much higher "first loss" or "equity" tranche retained by the sponsoring bank (typically 18% versus 2-4% typical in developed markets, according to one market participant) to make the CDO marketable—hence usually rendering it uneconomical for the sponsor.

A more fundamental constraint on EMCD market development concerns shallow local savings and markets for the financing of local companies. A larger pool of investible funds would open up significant demand for hedging and investment opportunities.

Legal Issues

An additional challenge has stemmed from uncertainty surrounding interpretation of the definition of the "Restructuring" credit event.⁸ The 1999 Restructuring definition (so-called "full" Restructuring) generally reflected revisions to address ambiguities that the 1998 Russian default revealed—including whether the Russian domestic debt "reinvestment" program constituted a Restructuring event, whether the restructuring was "material", how deliverable obligations should be valued, and which obligations were covered. The 1999 Definitions sought to

⁷ BBA Credit Derivatives Report 2003/04, pg. 23

⁸ The standard "credit events" that trigger payment under emerging market credit derivative contracts are Failure to Pay, Repudiation/Moratorium, Obligation Acceleration, and Restructuring.

establish more objective criteria for the Restructuring event and replace the subjective "materiality" requirement with theoretically more objective criteria based on reference entity creditworthiness.

However, in the emerging markets context, in the absence of a formal regime for sovereign workouts, sovereign credit events often involve a restructuring that may not fit precisely within the 1999 Restructuring definition. For example, protection buyers sought payments under credit default swaps as a result of Argentina's restructuring of its sovereign debt in late 2001, which they viewed as voluntary in form but economically coercive. Protection sellers withheld payment, contending that the 1999 Restructuring definition required an exchange of obligations to be mandatory. Argentina later repudiated and failed to pay on its obligations, but by then some protection buyers' default swaps had terminated at maturity. Accordingly, even if default swap protection is structured to extend beyond large debt amortization dates, there is a real risk of challenge to claims of payment under credit default swaps as a result of sovereign debt restructurings.⁹ Participants observed that adequately defining all possible restructuring scenarios to eliminate ambiguity in application of the definition to each unique situation is extremely difficult.

In February 2003, ISDA published new Credit Derivative Definitions that attempt to tighten the credit events commonly used in the emerging market context with implementation targeted (but not binding) by May 2003. One revision requires that a "Failure to Pay" or "Restructuring" must take place within a certain time that a sovereign repudiates or declares a moratorium on obligations in order to trigger the Repudiation/Moratorium event. Another revision provides that a restructuring must be "binding" on holders of obligations to trigger the Restructuring event.¹⁰

In tandem with challenges to the 1999 Restructuring definition in the emerging market context, different approaches to the Restructuring event evolved in the U.S. domestic and Western European markets as a result of widely publicized corporate obligation restructurings (the so-called "modified" and "modified-modified" approaches). These approaches have additional limitations, such as a cap on maturity of the deliverable obligation, in order to address concerns with the ability of the protection buyer to select the "cheapest to deliver" obligation in settlement of the credit derivative. In the emerging markets area, participants had appeared to use different versions of the Restructuring definition (full, modified, or modified-modified) depending on region. It remains unclear what impact the different approaches will have on market developments, although interview participants were generally positive regarding the refinements to the Restructuring definition in 2003. Additional clarity in the credit event definitions could alleviate concerns of protection sellers, as well as of those of dealers who seek to limit exposure to basis risk arising from differential treatment of offsetting credit derivative transactions.

Outlook

In general, market participants were optimistic regarding the prospect for future EMCD market growth, and expected recent growth levels to persist over the medium term, enabling the market to roughly double again by end-2006. Participants pointed to the comparative effectiveness and versatility of credit derivatives relative to other risk management tools (e.g., NDFs, political risk insurance) and suggested that banks would likely become increasingly significant end-users for risk-management purposes. At the same time, however, participants stressed the inherent

⁹ Participants further noted that a "lose-lose" situation can emerge in the case of sovereign restructurings. Due to their fiduciary duties, investment managers generally hold out in a restructuring even if this proves to be suboptimal. At the same time, it is unclear if they will be able to claim redress under credit default swaps for a restructuring.

¹⁰ See Section 4.7 of the 2003 Definitions

limitations in credit derivatives as tools to manage emerging market risk—and in particular risks associated with financial sector direct investments in emerging markets—with participants expecting trading activity to continue to dominate hedging applications. Participants were generally sanguine regarding ongoing efforts to improve EMCD legal documentation and market infrastructure. Participants pointed instead to the importance of broader improvements in emerging market transparency, legal regimes, and economic fundamentals as critical both to the sustained growth of the EMCD market and to direct financial sector investment in emerging markets.