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Volume One

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Understanding Credit Derivatives

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Dear Investor,

Welcome to the first volume of BNP Paribas' Understanding Credit Derivatives. In this series of reports, we explain the various features and functions of credit derivative products. The initial papers will address basic concepts: how credit derivative products work, how they trade, how they price. After that, we will move on to more complex topics such as correlation trading, and synthetic and equity derivative CDOs. Given the pace of advancement in this market, we are soon likely to be writing about products that haven't yet been invented.

We have elected to deliver this document in individual binders and separate volumes in order to give you a handy reference guide to the entire sector, and also to get this knowledge out as quickly as possible.

We hope that you will find Understanding Credit Derivatives a valuable resource.



Chris Ames

FOREWORD

The rise of the credit derivative market has been one of the most important developments in fixed income. From sporadic trading in the late 1990s, credit derivatives have grown to be a USD 2.7 trillion market, attracting attention from many market participants, including investors, portfolio managers, investment banks and regulators.

However, market size is only part of the story – product innovation has also been significant. From the basis of an expanding universe of quoted credit default swaps (CDS) sprang a diverse range of structured credit products. First-To-Default baskets (FTDs) and synthetic CDOs have become familiar products, offering enhanced yields and tailored risk-return profiles. CDS basket indices, such as TRAC-X, provide liquidity in trading transparent portfolios of benchmark credits. Built on this liquidity, trading of TRAC-X tranches has initiated a two-way market in correlation, which is a key driver of credit portfolio performance. CDS options, either on credit indices or on individual names, are also gaining popularity and allow investors to express views on spread volatility.

All these products represent new ways of investing in credit and managing credit risk. Since credit risk can be segregated and transferred through CDS, credit hedging has never been as easy or as efficient. Investment and credit risk management have entered a new era.

In the *Understanding Credit Derivatives* series, we will cover products ranging from single-name CDS and Credit-Linked Notes (CLNs), to correlation products such as FTDs and synthetic CDOs, to volatility products such as CDS options. For each product type, we will discuss the structure, valuation techniques, risks and performance drivers. We hope this will help investors form their investment strategies in credit derivative products.

We will publish *Understanding Credit Derivatives* in separate volumes. Each will feature a particular theme, building from simple concepts to more sophisticated strategies. In this first volume we provide an overview of the credit derivative market.

1. A NEW CREDIT RISK TRANSFER MECHANISM

The market for credit derivatives has grown tremendously since the mid-1990s, and credit derivatives have become indispensable tools for investing in credit and managing credit risk.

In simple terms, credit derivatives are bilateral contracts for transferring credit risk from one party to the other. The contract can refer to a single name (the Reference Entity) or a portfolio of names, as in the case of synthetic CDOs. These contracts are typically governed by the standardised terms and conditions of the International Swap Dealers Association (ISDA) documentation and the ISDA Credit Derivative Definitions. Upon the occurrence of a Credit Event (as defined in the ISDA Credit Derivative Definitions, such as Bankruptcy of the Reference Entity), the seller of protection will pay an agreed sum to the protection buyer.

Credit derivatives enable the isolation of credit risk from other risks, such as interest rate risk (or funding risk). This means that investors do not necessarily need to buy (sell) a bond or loan in order to acquire (offload) its credit risk. Credit derivatives therefore represent a new mechanism for transferring credit risk that is unfunded, off balance sheet, and efficient.

Credit derivatives help a variety of entities manage their credit exposures. Active users include banks, insurance companies, securities houses, funds and corporates. They use credit derivatives for a variety of purposes, including:

- Hedging individual credit exposure;
- Managing a portfolio's total credit risk;
- Incurring credit exposure (long or short) without holding a physical position in the debt instruments;
- Tailoring credit exposure to desired maturity and currency, which may not be available from outstanding debt instruments;
- Creating leveraged investments to enhance yield (as in basket trades and synthetic CDOs), and hedging such products;
- Separating risks embedded in securities (such as in convertible bond arbitrage);
- Managing an institution's regulatory or economic capital requirements.

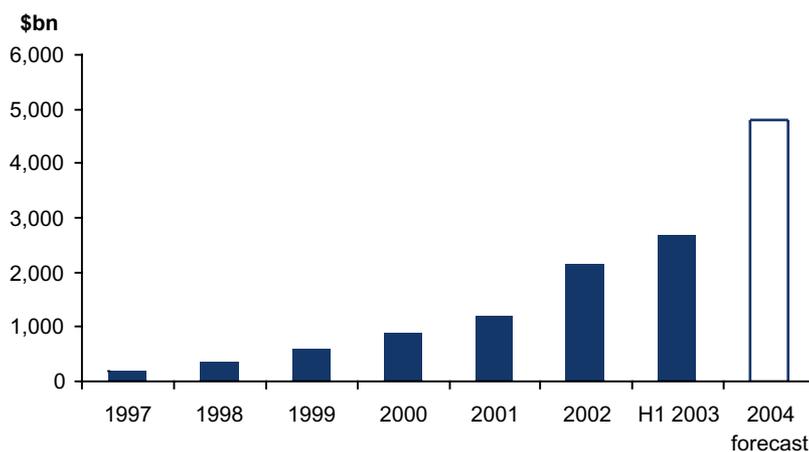
Credit derivatives isolate credit risk from other risks...

...and enable efficient risk management as well as certain investment strategies

2. VOLUME GROWTH

In only a few years since their emergence, credit derivatives have quickly gained popularity with investors and risk managers, and are now becoming a mainstream product for their portfolios. Volumes have rocketed. According to market surveys conducted by ISDA, the notional amount of credit derivatives outstanding globally totalled USD 2.7 trillion at mid-year 2003. This is 15 times the size of the market in 1997¹ -- a compound annual growth rate of 50% (Chart 1). Separately, the British Bankers' Association (BBA) forecasts growth to USD 4.8 trillion by 2004.

Chart 1: Credit derivatives' outstanding notional amounts

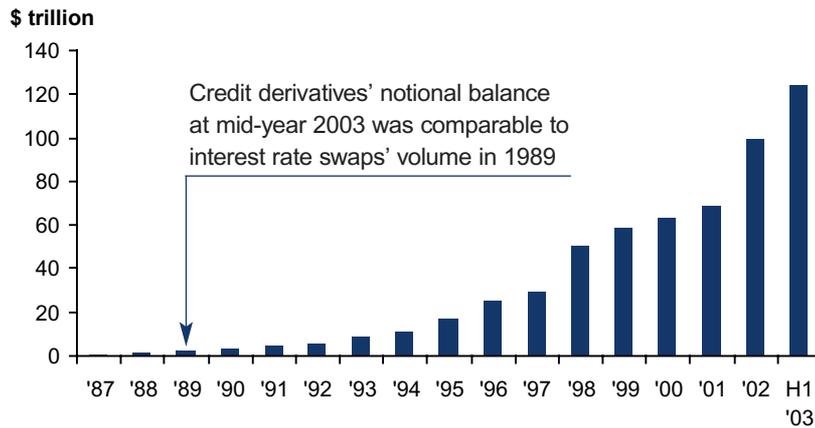


Source: Data for 2002 and H1 2003 are according to ISDA market surveys, others according to BBA Credit Derivatives Report 2001/2002.

Despite the rapid growth of credit derivatives, the market is still in its early stage of development. To put this into perspective: credit derivatives' volume of USD 2.7 trillion at mid-year 2003 is on par with that of interest rate swaps in 1989. Since then, the market for interest rate swaps has kept up a phenomenal growth rate. At mid-year 2003, the total outstanding notional amount of interest rate and currency derivatives reached USD 124 trillion, according to ISDA (most of this amount is interest rate swaps).

Growth is expected to continue at a rapid pace

¹ Data for 1997 are according to the *Credit Derivatives Report 2001/2002* by the British Bankers' Association. ISDA's market survey on credit derivatives started in 2001.

Chart 2: Interest rate & currency derivatives' notional balances

Source: ISDA

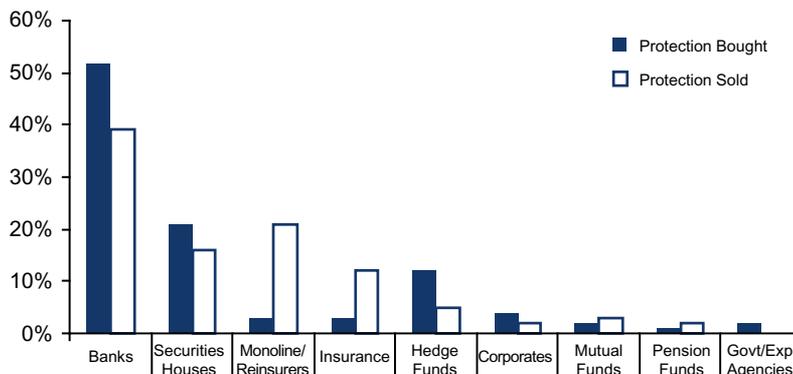
It is not unreasonable to expect similar rapid growth in credit derivatives. Drivers include:

- Increasing demand for instruments to efficiently manage credit risk;
- New entrants into the market as familiarity with the product increases;
- Growth in the underlying credit market;
- Growth of structured products using credit derivatives;
- Progress in global standardisation of documentation.

3. MARKET PARTICIPANTS

Banks, insurance companies (including monolines, which are financial guaranty companies) and securities houses have been the most active users of credit derivatives (Chart 3). Recently, hedge funds have also become involved. Corporates, mutual funds, pension funds and governments/export credit agencies also participate, albeit on a smaller scale.

Chart 3: Shares of protection buying & selling*



*% of the total notional amount outstanding at the end of 2001 (USD 1.2 trillion).
Source: BBA Credit Derivatives Report 2001/2002.

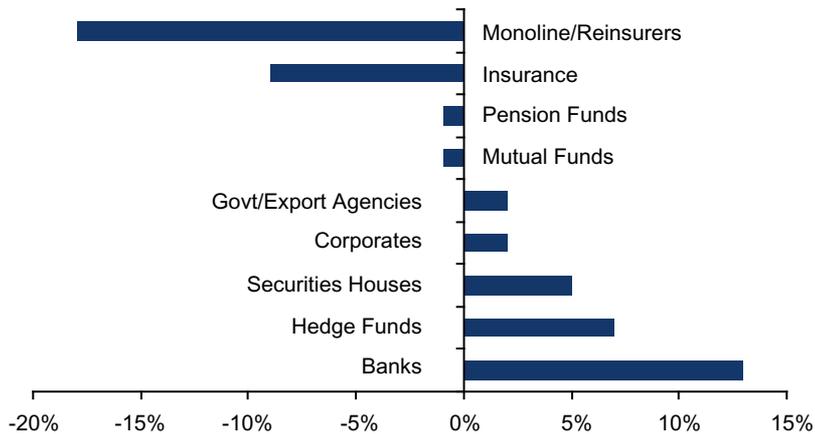
Banks use credit derivatives extensively to hedge their credit portfolios, as well as to diversify and optimise their credit exposure. On balance, they appear as “hedgers” in the credit derivative market, and are net buyers of protection. In contrast, insurance companies and funds use credit derivatives as an investment vehicle to gain credit exposure, and are therefore net sellers of protection.

Banks are the biggest buyers of protection, insurers the biggest sellers

Hedge funds, as leveraged investors, have recently increased their participation in the market, largely as protection buyers. As credit derivatives isolate credit risk from other risks, they are used to strip out or add in credit risk in various hedge fund strategies. In convertible bond arbitrage, for example, credit derivatives are used to hedge the credit component of convertible bonds, thereby stripping out the “cheap” equity options.

Hedge funds are an increasingly important force

The net positions shown in Chart 4 (protection bought minus protection sold) reflect the transfer of credit risk between economic sectors. In essence, monolines and insurance companies have been absorbing a significant amount of credit risk from banks, hedge funds and securities houses. On a smaller scale, corporates and governments/export credit agencies are net protection buyers, whilst pension funds and mutual funds are net protection sellers.

Chart 4: Net positions in credit derivatives*

*Protection bought minus protection sold, as a percentage of the total notional amount outstanding at the end of 2001 (USD 1.2 trillion).

Source: BBA Credit Derivatives Report 2001/2002.

Banks are the biggest players, accounting for 52% of the total protection bought and 39% of protection sold². The 13% differential means that banks' net bought protection amounted to USD 155bn. On an aggregate scale, banks are natural buyers of protection because, as the main credit originators in the economy, they need to disseminate concentrated exposure to other parts of the economy. Credit derivatives have helped banks achieve this in recent years: compared to the 1990-1991 recession, banks' balance sheets during 2001-2002 remained relatively strong, withstanding record volumes of defaults and a number of jumbo defaults.

Below this aggregate scale, there is actually differentiation among banks as protection buyers or sellers, at least in Europe. A recent Fitch report³ finds that large "universal" banks tend to be protection buyers, whilst smaller regional banks tend to be protection sellers. This implies that large banks use credit derivatives more as a risk management tool, whereas regional banks use them to complement credit origination, in order to diversify their credit portfolios and gain exposure to regions and sectors where they are underweight. In this regard, German Landesbanks, for example, have been net sellers of protection.

Banks' use of credit derivatives includes both single-name credit default swaps ("CDS") and portfolio products. A few years back, banks actively securitised their corporate loan books to achieve regulatory and economic capital relief. Now single-name CDS account for a majority of banks' credit derivative positions, according to the Fitch survey.

Net positions show the transfer of risk within the economy

Banks are natural buyers of protection

Big and small banks tend to have different net positions

² The following discussions in this chapter are based on data as of the end of 2001, according to BBA

³ "Global Credit Derivatives: A Qualified Success", FitchRatings, September 2003

Monolines and insurance companies have been the largest sellers of protection. Between them they had a net sold position (after deducting protection bought) of USD 321bn. Two-thirds of this net position is attributed to the monolines, which mainly buy the super senior risk⁴ in synthetic CDOs, but also provide guarantees on some funded CDO notes.

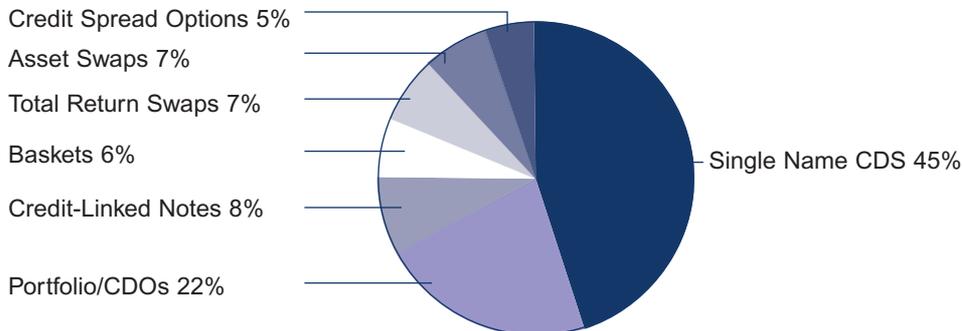
Insurance companies are attracted to the credit derivative market because credit risk is viewed as uncorrelated to other underwritten risks. Due to regulatory constraints in many countries on purchasing derivatives, they sell protection through buying Credit-Linked Notes ("CLN"s), which are constructed with an embedded CDS and highly rated collateral. They also participate in the credit derivative market through affiliated financial product companies or captive subsidiaries domiciled in offshore financial centres. These "transformers" or "protected cell companies" sell protection to the market and cover their exposures by a guaranty or surety agreement from the insurance sponsor, the terms and conditions of which are virtually the same as the derivative contracts. These intermediaries may be unconsolidated entities, which can shield the insurance parents from profit and loss volatility as a result of mark-to-market of derivative positions.

Insurance companies are natural sellers of protection

⁴ The tranche senior to the AAA rated notes in synthetic deals, which represents a majority of the whole capital structure. See "A Review of Synthetic CDOs – a Rapidly Evolving Sector", BNP Paribas, February 2003 for more details.

4. MARKET ACTIVITY

Chart 5: The credit derivative market by product*



*% of the total notional amount outstanding at the end of 2001 (USD 1.2 trillion).
Source: BBA Credit Derivatives Report 2001/2002.

Single-name CDS are the most common credit derivative products. According to the BBA survey, they represent almost half of the total market (Chart 5). They are also the building blocks for structured credit products. Ranking second in market share are portfolio products⁵ and CDOs. The share of this segment is forecast to increase further to over a quarter of the market by 2004.

Non-financial corporates are the most popular Reference Entities (Chart 6), due to a growing corporate credit market as well as banks' need to hedge their corporate loan books. Correspondingly, a majority of the Reference Entities are rated single-A to triple-B (Chart 7). It is worth noting that there has been increased usage of credit derivatives on non-investment grade Reference Entities. The market share of this segment is expected to grow to the high teens by 2004, according to BBA's survey.

Chart 8 shows that 1-5 years are popular maturities for credit derivative products, with 5 years being the most common tenor. Chart 9 shows that London is the most active centre for credit derivative trades.

Leo Wang

Market activity is most common in:

- single-name credit default swaps
- corporate reference entities, of A-BBB ratings
- 1-5 year maturities
- trades booked in London & New York

⁵ Over 10 reference entities, as defined by BBA.

Chart 6: By Reference Entity type

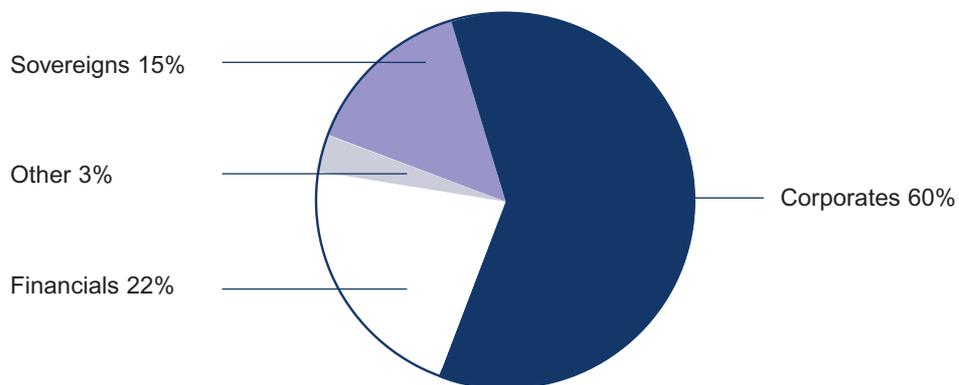


Chart 7: By Reference Entity rating

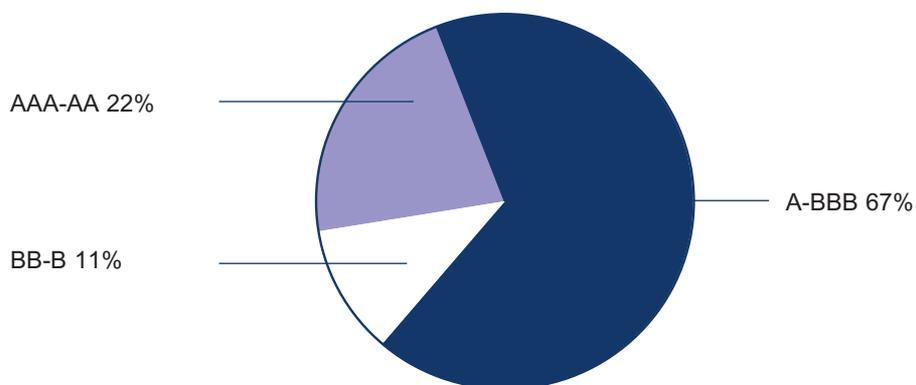


Chart 8: By product maturity

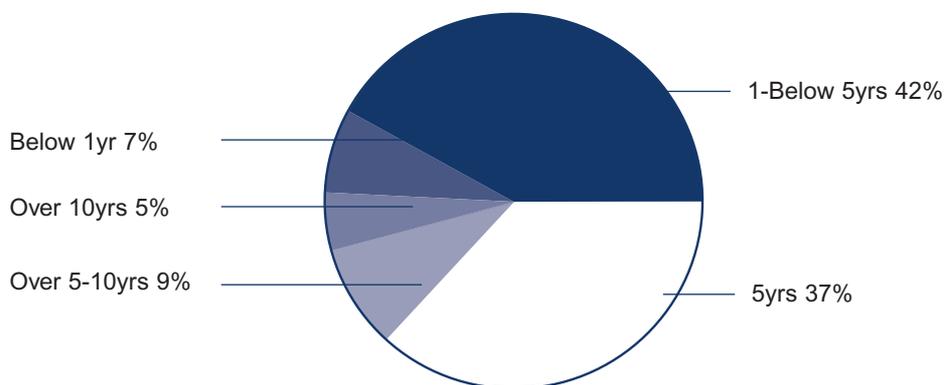


Chart 9: By region of trade bookings

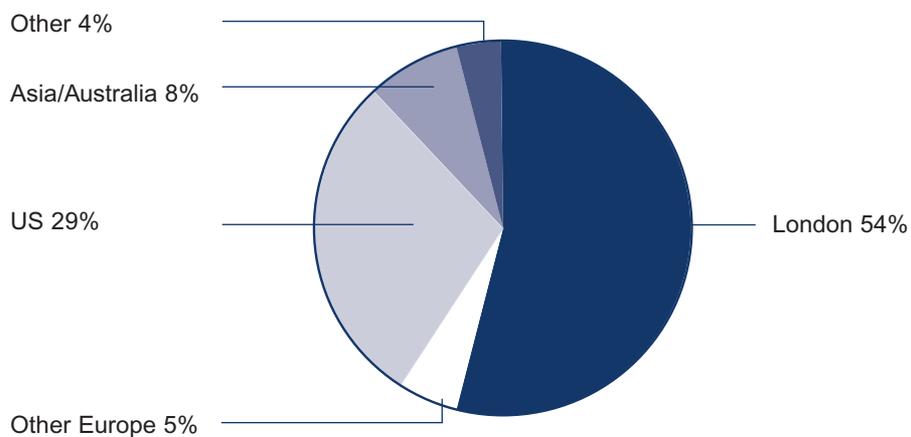


Chart 6-9: % of the total notional amount outstanding at the end of 2001 (USD 1.2 trillion).

Source: BBA Credit Derivatives Report 2001/2002.

IMPORTANT DISCLOSURES:**Recommendation System:**

Type	Terminology	Horizon
Credit Trend (1)	Positive/ Neutral/ Negative	6 months
Relative Value (2)	Outperform/ Market Perform/ Underperform	1 month
Investment Recommendation (3)	Buy/ Hold/ Reduce/ Sell	Up to 6 months

(1) Credit trend is based on underlying Credit fundamentals, business environment and industry trends;

(2) Relative Value is based on expected market performance relative to sector;

(3) Investment Recommendation is based on BNPP Credit Trend and Relative Value opinions.

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