

1. Synthetic Squares, or the Securitisation of Russian Dolls

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1. INTRODUCTION

The securitisation market has come a long way since its inception in the 1980s. One of its features has been the continuous and swift evolving nature. With the benefit of hindsight, it is not too long ago securitisation was all about financial institutions selling or assigning receivables to an SPV in order to obtain cheap funding. The advent of credit derivatives brought about a quite radical change in the securitisation market with the introduction of synthetic securitisations, referencing an ever increasing range of assets. The recent synthetic securitisation of Russian government debt (discussed further below) might even tempt one to compare the ever expanding array of securitised assets to the waistline of Monsieur Creosote, one of the famous Monty Python creations in *The Meaning of Life*. But enough comedy, the focus of this chapter is one of the more recent additions to the securitisation tree, the resecuritisation, and in particular the synthetic resecuritisation, which were recently aptly described as Russian dolls.

1.1 Definition

A resecuritisation is the securitisation of tranches of other securitisations. As with many securitisation products, it goes by various names or acronyms. As the tranches bundled in the portfolio are often CDOs themselves, the transaction is often labelled a CDO of CDOs or a CDO 'square'. However, the underlying tranches may also be ABS more generally, prompting the term 'CDO of ABS'. With the ever unclear distinction

between securitisation and structured finance, the phrase 'structured finance CDOs' has also been coined.¹ Either way, the term 'square' stuck, and is henceforth used to describe synthetic resecuritisations, whether the underlying transactions are CDO or not.

1.2 Market

Although squares have only recently made their breakthrough in the European financial markets, they are not particularly new. Squares have been around in the securitisation market since 1999, albeit mostly in the US and in true sale or 'traditional' securitisation format, more commonly known as multi-sector CDOs. Some of the earlier squares in Europe were marketed as early as 2000.

What is new is the way squares have, once they adapted to the synthetic format, taken over the CDO market. Global issuance of synthetic squares has increased tenfold from USD 3.9 billion in 1999 to USD 34.1 billion in 2002, and the trend has continued ever since.² Even in the traditionally cash-dominated US securitisation market, squares have captured a respectable 36% of the USD 20 billion CDO market in 2003. And the signs are that the expansion of the synthetic CDO market and, in particular, the arbitrage market (i.e. transactions designed to profit from the difference in revenues on the underlying credit default swaps and the coupons paid on the liabilities, the credit-linked notes) is far from abating. Recent estimates from Bank of America put the visible public volume of this market at USD 734 billion, about 18% of the global credit derivatives market (which also keeps expanding, thanks in large part to the development of single tranche CDOs, discussed hereafter).³

1.3 Goodbye CDO?

What fuelled the growth of this new product, the synthetic squares? The answer is probably the same as with all other new products: the search for yield in the fixed income markets. In 2003, the fees (or 'spreads') paid in the credit default swap market have tightened remarkably, around

¹ See Fitch Ratings, 'Synthetic Structured Finance CDOs' (Special Report, 17 February 2004).

² See Fitch Ratings, 'High-Grade Structured Finance CDOs' (Special Report, 31 March 2003).

³ The British Bankers Association's (BBA) most recent biennial report on the credit derivatives market entitled 'Credit Derivatives Report 2003-2004', released in September 2004, estimates the volume to grow to a quite impressive USD 8.2 trillion in 2006, up from around USD 5 trillion in 2005. The report may be purchased from the BBA's website at <www.bba.org.uk>.

60%.⁴ This downturn took the breath out of many plain vanilla synthetic CDOs originated for arbitrage purposes (the impact on these transactions originated in order to obtain regulatory capital relief has been far less for obvious reasons). On the investor side of the equation, many were likely somewhat disillusioned after the record numbers of corporate defaults. Especially troublesome were the occurrences of credit events with respect to corporates for which the term junk bonds was previously unknown, the *fallen angels*. Some of the defaults, such as Enron, WorldCom and Parmalat, impacted on many synthetic CDOs.⁵ This added to the perception of investors that the credit derivatives market had yet to achieve a sufficiently large number of reference names. All together this proved to be a fatal combination of significantly lower returns (for originators) and a perceived higher risk (by investors).

On the other hand, the mechanics of synthetically securitising assets have become entrenched in many jurisdictions globally. The impact on arbitrage in the credit default swap market notwithstanding, the advantages of this method of securitisation (including the avoidance of a sale of the assets and the flexibility of the credit risk transfer documentation) remain untainted. Market participants in the securitisation industry, including many investors, have become familiar with the issues in synthetic CDOs, leading to a seasoned and mature market. Early glitches in documentation have been professionally and efficiently fixed by ISDA's members. In short, sufficient reasons to develop securitisation products on the basis of synthetic technology.

One of the major factors in the development of the market in squares has been the phenomenal growth of 'tranche-only' CDOs (or single tranche CDOs or STCDOs). These transactions may be viewed as bilateral CDOs. Only one tranche of securities is issued to a single investor. This investor selects the characteristics of the portfolio, the exposure and any equity position, 'reverse engineering' the transaction. Tranche-only CDOs are tailored to the wishes of individual investors, something which is much more difficult to accomplish in a fully fledged synthetic CDO, which must

⁴ Bank of America, *Guide to Advanced Correlation Products* (Risk Books, London, 2004), p. 5. The movement in spreads should however be put in perspective in the broader securitisation market. Credit default swaps are not the only financial instruments to have suffered a tightening of spreads. In the European RMBS market, a similar trend has materialised, though as yet not as massive.

⁵ One could counterargue that the relevant synthetic CDOs were in fact properly structured, as the rating of only very few credit-linked notes was affected. However, it does not help if the names of these fallen angels keep appearing during the evening news.

balance the interests of the various noteholders. In fact, a key difference with a managed CDO is that a single tranche CDO does not require the determination of how the interests of the management should be aligned with those of the investors, and how the risks can be shared equitably across the whole capital structure. In a single tranche CDO, the investor is effectively his own manager (though managed STCDOs also exist). An added advantage is in the shortened documentation process. Furthermore, distribution and marketing are usually a lot easier, as the need to sell the entire capital structure of the transaction is avoided.

The very strong growth of the STCDO market is largely explained by the increase in yield pick-up when compared with competing sectors such as corporate bonds and CMBS, in which spread has declined. The difference in yield, and the pick-up for investors in the arbitrage single tranche CDO market remain robust, to say the least.

1.4 Hello CDO Square!

Against this backdrop, other investments and synthetic structured products have come to the fore. These include squares, but also single tranche CDOs, CDOs referencing government debt and securitisations of equity derivatives (covered in a separate contribution to this book). For example, Germany recently synthetically securitised EUR 5 billion of its estimated EUR 20 billion Russian government debt through a special purpose vehicle, Aries. The transaction prompted many to question whether this was the first step in unlocking government debt for the synthetic market. Allegedly, Russia has purchased some of the credit-linked notes, which to some may be a variation upon an investment in a self-referencing credit-linked note. But I am straying. Back to squares.

Squares have various attractive features. First on the list, at least from an investor's perspective, is the substantially higher yield. This is, of course, most noticeable at the most expensive part of the capital structure, in practice the BBB level. A further attraction is that, historically, securitisations (or structured finance investments) have provided more stability in terms of credit ratings, compared to the ratings of corporates. To the more risk-averse investors, properly structured and managed squares may therefore be appealing as a 'safe haven'. In addition, squares can reference a substantially higher number of entities (but also of different types of securities) than would be achievable in a straight forward synthetic CDO. Squares therefore represent an opportunity for more diversification. Investors keen to avoid the 'event risk' associated with the downfall of a couple of hitherto highly reputable companies can thus seek refuge in a product more prone to the whims of the market as a whole (a factor potentially reinforced by proper structuring, as discussed further below). Investors

also prefer strong track records. Squares allow originators to bundle a portfolio of tranches from securitisations structured, managed or serviced by parties with a strong reputation in the market.

Last but not least, the market for squares itself has become a mature one. As mentioned earlier, square transactions have been closed as early as 2000. Typical more risk-averse investors have had opportunity to review the performance of these early transactions. Although not all of them performed well (something I will touch upon later) there is a sense in the investment community that the first and largest flaws have been fixed. Originators emphasise this perception by referring to 'second generation' transactions. It is perhaps similar to a new software release (particularly from that single most important company in the world) which always seems to be in need of further patches. Comfort is also taken from the evolution of the methodologies of the various rating agencies. The three major ones have released criteria which build upon the same analysis, a matter discussed in a bit more detail later on. And while history tells us that rating agencies' criteria are not (and should not be) a substitute for independent investor analysis, this convergence will definitely have helped alleviate market unease over a new product.

1.5 Limitations and Opportunities

Each product has its peculiarities. Squares are no exceptions. However, the concerns that arise are more linked to a less than thorough understanding of the product, and market experience has shown them not to give rise to unsurmountable issues for investors.

First, squares may give an investor a false sense of diversification. The universe of reference entities in the credit default swap market is inherently limited, in particular for liquid reference entities. In this reasoning, investors in the CDO market, due to the relatively high number of downgrades during the 2001-2002 years, have simply jumped from one ship to a very similar one. About half of the downgrades were found to have been a result of corporate exposure.⁶

The liquid number of reference entities globally is probably around 400 (or 500, but that's pushing it). A 'pure' square, i.e. a synthetic CDO which references underlying synthetic CDO transactions, will inevitably have a degree of overlap, not to mention correlation. In practical terms it is not unusual for underlying CDOs to have an overlap of one third. That not-

⁶ Credit Suisse First Boston, 'The Compelling Case for SF CDOs' (CDO Special Report, 27 January 2004), p. 20.

withstanding, investing in a portfolio of, say 250 or 300 reference entities still leaves an investor significantly less exposed to event risk than a portfolio of 100 reference entities. This risk may be further reduced in squares in which CDOs and ABS are combined. Many transactions nowadays are structured around a majority share of ABS exposure, whilst limiting the corporate CDO exposure in the transaction (in these transactions, it is not uncommon for ABS to amount to 80% of the aggregate notional amount).

This way, a truly diversified portfolio can be referenced. Such a portfolio may pose problems for dynamic, or more specifically, managed transactions. Managing a square across such a broad terrain requires commensurate expertise, and a number of boutiques has entered this fray to fill the void. Experiences in some of the early squares underline that lessons have been learnt. Managers or originators were sometimes inclined to include more exotic ABS such as niche products, including franchise loans and aircraft deals, rather than standard parcels of RMBS in order to achieve a higher yield and arbitrage.

Correlation is key in squares. It is, in the words of the Basel Committee on Banking Supervision, probably the single most important credit risk management issue associated with credit risk transfer, and squares are no exception. Correlation is critical in evaluating the risk of CDO tranches, and that's why correlation desks have sprung up across banks, and rating agencies have published reports on how to assess this risk in the context of CDOs (and thus, double in CDO squares).⁷ The rating issues in correlation are addressed in another chapter of this book.

Some market commentators argue that squares lack transparency. This charge actually has two dimensions. The initial question is which information on the underlying portfolio is or should be disclosed to investors. Initially (and according to some, still) practice is varied. Some transactions do not include any information specific to the underlying deals. They instead rely on the portfolio criteria established in conjunction with the rating agencies. Others have inserted some basic material and references, at least enabling sophisticated investors to verify details of the underlying transactions. There is tension here between the desire of the originator to fully hedge its exposure on the referenced deals, on the one hand, and the investor's need for as much relevant disclosure as possible on the portfolio in order to make a fair assessment of the risk profile on the other. This conflict is amplified when one considers the many differences that arise

⁷ Basel Committee on Banking Supervision, 'Credit Risk Transfer' (The Joint Forum, Bank for International Settlements, October 2004), p. 3. The document is posted at <www.bis.org>.

in the way synthetic CDOs are documented (carve-outs in credit events, valuation processes, etc.).

In one recent deal, the originator accommodated these concerns in a forthright manner. Instead of referring to all the different settlement conditions of each deal, it included one set of credit events, and the notional amounts were equal for each referenced transaction. That way, the originator accepted any mismatches in credit risk transfer. From an investor's perspective, of course, this was a very clear and transparent investment opportunity. It also eliminated concerns about privately placed transactions, from which disclosure may be more difficult to obtain. The clearly discernible trend in more recent transactions is towards increasing disclosure. And this trend is expected to continue.

Related to the perceived lack of transparency is the perceived complexity of the documentation. This appears to be a matter of time. ISDA is in the process of drafting (at the time of writing) a standard credit default swap referencing asset-backed tranches. This new template should be available by the time this book is published. To those familiar with the broad concepts of plain vanilla synthetic CDOs the new (draft) template will not present substantial concerns. Squares are of course complex products, but it appears that concerns over complexity are primarily raised because of the lack of uniformity in some of the key terms, rather than anything else. Now that the dust has finally settled on the use of (modified) restructuring, no one is keen to enter a similar debate for a new set of credit events in squares after publication of the templates. As discussed below, including ABS alongside CDO deals raises questions on how their different structures (amortising *versus* bullet for instance) combine. Overall however, a further harmonisation of credit derivatives terms in respect to squares is likely to (continue to) enhance investor confidence in this product further. The emergence of a retail CDO market in countries such as Australia (or of retail project bonds in Hong Kong), underscores the fact that arrangers too are increasingly confident they are able to summarise the essence of synthetic CDOs of various types to less sophisticated investors.

2. DOCUMENTATION

2.1 General Structure

The overall structure of a square is similar to that of a synthetic CDO. The originator transfers the credit risk on the reference portfolio to an SPV through one or more credit default swaps. The SPV in turn transfers the credit risk to, what is commonly a combination of, funded and unfunded investors. A relatively small amount of credit-linked notes are issued.

The amount should be sufficient to comply with the amount of collateral required by the rating agencies to achieve the desired rating of the top tranche. The trick of course is that the cost of the credit-linked notes, requiring funding up front, is higher for the originator. Depending on the originators' cost of funds, the issuance of credit-linked notes may be a cost factor.

The remainder of the notional amount at risk is generally transferred through a credit default swap to a separate investor. As this investor is senior to the noteholders, the investor (and the swap) are referred to as super senior. Various of the major monoline insurance companies play this market. There are similarities, too, in the documentation. The credit default swap (and the references in the credit-linked notes) in either case will be based upon the latest ISDA (2003) Credit Derivatives Definitions.

Squares are different in other respects. Documentation issues are addressed below. But there are other characteristics that set them apart from more plain vanilla structures. Leverage in the credit-linked notes is one. A square is often said to 'leverage the leverage'. The aggregate notional amount of the portfolio may be more than 10 times the aggregate amount of the credit-linked notes.

This has risks as well as benefits. The leverage itself is beneficial through the transaction, to the extent that it enables the structure to source additional premiums, and therefore increases the likelihood that the transaction will be able to make its obligations to pay interest under the credit-linked notes. On the other hand, referencing a larger number of underlying transactions implies that the chances of a credit event occurring in any of those transactions is inherently larger. As a result, the structure is more likely to incur losses at a certain point during its life. Given this, it becomes much more important that a structure of this kind is able to withstand more than just one or two credit events. Fortunately, this is exactly what a synthetic square is generally able to do, particularly in a pure square CDO, which bears much more market risk, rather than credit risk.

This point is illustrated by some recent transactions in which straightforward corporate exposure on, say, 50 reference entities, is combined with exposure on CDOs. In fact, such a deal may be viewed better as a hybrid between the collateralised swap obligations on the one hand, and a pure CDO square on the other. (In collateralised swap obligations, the SPV enters into template credit default swaps with various dealers, rather than with just one originator. These transactions are well suited for arbitrage in which investors want to play both sides of the market, that is, both selling and buying protection.)

In squares, the mechanics of loss calculation are somewhat different from those in a straightforward synthetic CDO. In the latter, upon the oc-

currence of a credit event with respect to any reference obligation in the portfolio, a loss amount (presuming cash settlement) will be determined. This amount will then be applied against the noteholders' claim for repayment, depending on their seniority and any loss threshold. In squares by contrast, the reference obligation is the obligation of the special purpose (or structured finance) vehicle to repay interest and principal under a particular tranche of notes issued to investors. The point is that the occurrence of a single credit event in the underlying synthetic CDO will not *per se* cause a credit event (such as failure to pay) in the square. This will obviously depend on the tranching (and specifically the subordination) of the transaction. It may take a number of credit events in the underlying CDO to cause a default in the reference obligation of a square. As a result, the credit default swap language needs to be amended to accommodate multiple credit events in the underlying CDO.

Arguably, some areas in squares are prone to moral hazard, that is the opportunity for one party to take advantage of uncertainty or lack of clarity in the documentation at the other's (usually the investor's) expense. Examples are highlighted in Moody's article on rating methodology.⁸ Key for many investors in managed structured finance instruments is the manager's stake in equity or mezzanine pieces or both. According to Moody's, sensitive areas are: the verification of compliance with trading rules, the aggressive removal of reference obligations for credit risk purposes, the determination of an asset as liquid or not, and the valuation and bidding procedures. In this context, it is notable that squares have followed the example of synthetic CDOs more generally in that fixed recoveries are increasingly standard. Because the recoveries on the referenced assets are pre-set, the loss payable to the originator is known upfront as well. This avoids the need to follow cumbersome and lengthy market valuation procedures, and may also be useful from a recharacterisation perspective (as discussed further below).

Where bidding and valuation are still used, the differences of the early days have all but disappeared. Practice has significantly, though not completely, converged over the last year. Rating agencies have been particularly instrumental in this area. For instance, squares these days are likely to incorporate bidding procedures starting only a month or so after the credit event. The rationale of this is to allow the market to absorb the news, and have become more stable.

⁸ Moody's Investors Service, 'Moody's Approach to Rating Synthetic Resecuritizations' (Rating Methodology, Structured Finance, 29 October 2003), p. 13.

Some of the other points in essence relate to instances in which the investors rely on the originator to make certain determinations. The most important of these is the occurrence of a credit event. This issue has in practice been resolved by adding an objective third party, such as an accountant or similar officer, which verifies the occurrence of the credit event. Also, and increasingly, the credit event notice is required to be signed by two senior officers of the originator, including one from the credit department. So, in summary, practice has evolved and taken many of the issues raised by the rating agencies into account. As the concerns behind these issues are essentially the same in any other type of synthetic securitisation, the solutions should be familiar to investors.

2.2 Documentation

The most apparent difference in documentation is in the definition of the credit events used in the credit default swaps. As discussed further below, the typical threesome of credit events (bankruptcy, failure to pay and restructuring, in whichever form) are not necessarily well suited to covering the credit risk transference in a tranche of a referenced securitisation transaction. Yet, there is more to it than that. The method in which the cash settlement amount is determined may also be affected by the lack of liquidity of the referenced tranche. And there are other issues, which stem from the different nature of the referenced obligations, and impact on, for instance, the redemption of the credit-linked notes. None of these issues however, need be of exceptional concern to investors.

2.3 Credit Default Swap

As mentioned, the different nature of the obligations referenced (a tranche of a securitisation, rather than bonds issued in the corporate market), requires a rethink of the applicability of some of the definitions contained in the credit derivative definitions. In general, the credit derivatives definitions still provide an excellent basis for the documentation of squares. It is in, apart from the credit events, smaller issues that differences arise. For instance, the references to successor reference entities and substitute reference entities seem quite out of place. In a square of course, the underlying transaction is issued by a bankruptcy remote SPV.

Furthermore, the list of entities that may provide information (note the term 'publicly available information' is avoided, as the information may well be forthcoming from non-public sources) which potentially triggers settlement of the relevant credit default swap may not be sufficient. In particular, the issuer vehicle of the underlying CDO or other reference obligation (sometimes referred to as the 'Associated Entity', so as to distinguish

it from the issuer of the notes), or the guarantor or insurer of such reference obligation should be able to provide such information. The information itself need not specify that the occurrence thereof has met the conditions of a credit event at issue. The assessment of whether the information provided is sufficient to trigger a credit event is made by the issuer, though usually confirmed by an objective third party engaged for this purpose.

2.4 Credit Events

The challenge (at least until the harmonisation of the language is complete) is to define credit events in such a way as to align the losses under the square with the actual economic losses experienced on the underlying securities. This way 'soft' credit risk, as the rating agencies so elegantly phrase it, is avoided.⁹ The market has come a long way in this regard, and ISDA's efforts will likely bolster further harmonisation in practice.

Upon first sight, one might be led to believe that the traditional triumvirate of credit events (bankruptcy, failure to pay and restructuring) is not fitting when referencing tranches of securitisations.

Take bankruptcy for instance. The reference entities in a square transaction are the respective SPVs which have issued the underlying securitisations. The special purpose vehicles are inevitably bankruptcy remote as required by the rating agencies, so what's the use of this credit event in terms of risk? The answer is twofold. One, bankruptcy remote is not bankruptcy proof. Recent history in the land of whole business securitisations tells us that securitisation vehicles can skirt the shores of bankruptcy too. Second, the credit event bankruptcy is not solely about bankruptcy. It also covers a number of somewhat similar events which may be experienced in distressed situations, including the petitioning for a bankruptcy, not stayed within a reasonably short timeframe.

Moody's has clarified some detailed changes to the credit event bankruptcy, which make interesting reading. For instance, bankruptcy in the 2003 Credit Derivatives Definitions includes the taking possession of all or substantially all of its assets by a secured party, or execution, attachment or sequestration against all or substantially all of its assets. This clause (4.2 (g)) is deleted, as the assets of the SPV may be transferred to (a representative of) the investors without the SPV itself going bankrupt.¹⁰

⁹ Fitch Ratings, 'Synthetic Structured Finance CDOs' (Credit Products – Special Report, 17 February 2004), p. 1.

¹⁰ See Moody's Investors Service, footnote 8, above, p. 7, for a few more examples as well.

Another example is that bankruptcy in resecuritisations should only cover an inability to pay debts 'when due'. This may seem like a minute change, but in fact is quite relevant, given that many securitisations allow for a deferral of interest (a capitalisation of interest, to be more precise) under the terms of their notes. Such a deferral of payment-in-kind or 'PIK' securities would otherwise constitute a credit event. In light of the above, keeping a slightly amended definition of bankruptcy in as a credit event is, after all, not such a bad idea.

That other misunderstood credit event, restructuring, also seems out of place in a square. Applying it to a square context, it would encompass a scenario in which, for instance, the noteholders agree with the SPV to limit, defer or subordinate payments, whether interest or principal. Of course here, too, there is some residual risk of having to renegotiate poorly performing securitisations. The issue is (again) more one of soft credit risk. How to ensure that a restructuring is associated with a true default, and not a mere set-up by the originator and the noteholders? This concern is usually addressed by limiting a restructuring to involuntary events, and ones which result in the incurrence of direct economic loss (again, the Moody's paper is a nice *aide memoire*). From a practical perspective, the changes to restructuring as a credit event are quite likely to be acceptable to the originators. Their main concern will be to incorporate restructuring as a credit event, in transactions structured to obtain regulatory capital relief (and their regulators may insist on restructuring as a credit event as a prerequisite for recognition of the transaction for regulatory capital relief purposes).

Overall, arguably these two credit events are – to a certain degree – similar to good old bankruptcy and restructuring. It is, in fact, with respect to the third credit event that the market was (and to some degree still is) faced with a variety of ways to tailor failure to pay to tranches of referenced securitisations. Failure to pay principal, failure to pay interest, irreversible loss, principal loss and loss writedown, are all examples of this. While this diversity may read like bad news to investors, the good news is that the efforts of ISDA to harmonise the applicable credit events are likely to bear fruit soon and be subsequently adapted in the securitisation market. It is fair to comment however, that a template credit default swap referencing an asset-backed security is not necessarily the same as a tailored credit default swap referencing a variety of tranches in a square. But it is an important step forward.

This credit event might look like this: a reduction in the principal amount of an obligation of a reference entity (i.e. the SPV), and either (i) the terms of the obligation do not provide for reinstatement or reimbursement of the amount reduced, (ii) the terms of the obligation do not provide for interest

to be paid on the principal reduction from the date of the reduction until reinstatement or reimbursement, or (iii) the credit rating of the obligation has been downgraded below investment grade. Whatever the label, the irreversibility of the reduction is of the essence in the definition. One can see the fruits of negotiations with rating agencies here.

A different credit event may be drafted to account for PIK securities in the reference portfolio. While the buyer of protection may be comfortable with a temporary delay in interest payments, patience will be limited. For transactions rated for the timely payment of interest, a credit event may be defined as occurring if deferred interest is not paid for (for instance) two consecutive payment periods, or two years from the date such payment would have been due and payable.

As several securitisation subtypes (e.g. RMBS in several geographies) do allow for reinstatement, a strict interpretation of this credit event would eliminate these subtypes as eligible reference obligations. This hurdle is typically overcome by redefining the credit event. Principal reduction is then also defined as occurring if it is mathematically impossible for the reinstatement to occur.

All in all, the principal reduction credit event, in whatever format, is quite different from the standard failure to pay in terms of its variety and (at least as of yet) opaqueness. However, there are other differences too. First, it is clear that a reduction of principal can occur multiple times with respect to a referenced tranche, resulting in partial settlement only. By contrast, upon the occurrence of the credit event bankruptcy, the reference obligation would typically be removed from the reference portfolio, and no further protection would be provided. The documentation will therefore be tailored to allow for multiple credit events principal reduction.

Second, and related, is the matter of valuation. The valuation in the case of, say, bankruptcy or restructuring would generally be in the form of a (quite long) market valuation process designed to ascertain the loss in value of the reference obligation. Instead, in the event of a principal reduction, the cash settlement amount will be tied to the amount of such a reduction (presuming for now the tranche would be 100% referenced in the master portfolio, which obviously is not *per se* the case).

Though failure to pay in respect of ABS can be defined in various ways, the differences are relatively few. It can relate to a failure to pay principal or interest. The credit event is then a failure by a reference entity to pay an amount in respect of principal of the reference obligation in excess of the payment requirement (threshold amount) (if specified) at the earlier of (i) legal maturity of the reference obligation or (ii) the liquidation or distribution of the assets securing such a reference obligation.

Alternatively, the failure to pay can refer only to interest. For instance, it is the failure of a reference entity to make a scheduled interest payment (again, in excess of the payment requirement, if specified) on a reference obligation on a scheduled payment date. To account for the fact that underlying securitisations may allow for payment in kind (or 'PIK') securities, a credit event is not treated as occurring solely by reason of the addition of accrued interest to the principal amount of the reference obligation or the separate recording of interest as capitalised interest, in each case instead of being paid in cash and as provided for under the terms of the reference obligation, unless such addition or recording constitutes a default under the terms of the reference obligation.

Finally, failure to pay (whether interest or principal) is linked to the performance of a single reference obligation. This can be amended to cover any failure to pay by the issuer. This would include for instance the failure of the SPV to pay the ongoing cost of the referenced securitisation.

In earlier square transactions, a separate credit event 'ratings downgrade' was used. It referred to the downgrade of the underlying securitisation to (mostly) below investment grade level. In more recent transactions, this particular credit event is not used on a 'stand-alone' basis anymore. Rather, it is embedded in other credit events. The rationale is rating agency driven. Some credit events may be broadly and hence aggressively defined, giving rise to possible 'soft' defaults. By including the objective ratings downgrade provision, soft default risk can be largely eliminated.

For practical purposes the discussion on further harmonisation of credit event language has been, and continues to be, largely driven by the rating agencies. This also explains why some of the new credit events the market has seen have incorporated a ratings downgrade. The key concern again is to ensure that the credit events mimic the incurrence of actual economic loss in the referenced transaction. Particularly in a relatively new environment, some of these credit events may have been quite aggressively drafted. Without amendment, these would have exposed investors to potential 'soft' credit risk. Rating agencies may then insist upon a ratings downgrade as a condition for the occurrence of a credit event to limit the credit risk transfer to more substantive credit risk.

2.5 Credit-Linked Notes

In the context of squares, two issues spring to mind when documenting the terms and conditions of the credit-linked notes: possible redemption and waterfall.

The redemption of the notes may have to be deferred in squares. One example would be the occurrence of a potential failure to pay with respect to a reference obligation shortly before the scheduled termination date.

Depending on the parameters of the protection purchased (at what time does the protection stop?) the occurrence of a credit event after the scheduled termination event may yet be covered within the transaction. In that event, redemption would, at least partially, have to be deferred to enable the relevant credit event to be settled in accordance with its terms.

Another possibility is that a credit event has already occurred just before the scheduled termination date. However, the settlement amount (or floating amount in credit default swap terms) has not been completed. This is a scenario more likely for transactions which are cash settled based upon, for instance, a lengthy workout of the reference obligations, such as in CDO squares or other resecuritisations. This poses a dilemma for investors: should the loss on the reference obligation be estimated instantly, so as to enable redemption as planned on the scheduled termination date, with the inherent risk of an inaccurate assessment? Or should an amount be put aside and used to pay out only after the settlement is completed, albeit with a partial redemption on the scheduled termination date? Some notes will then be redeemed later, although arguably more in accordance with the original terms of settlement envisaged in the information memorandum.

If the credit default swap can be settled quickly (in the case of a CSO, referencing an investment grade corporate name) then the waiting need not take long. However, in the case of a square, settlement can take significantly longer, and other solutions may be called for, such as a cut-off date.

The amount set aside is defined as a 'reserve amount' or, more fittingly, a 'holdback amount'. It is the amount which would otherwise be available to pay principal on the notes, but deferred instead to the extent necessary to complete settlement of the reference obligations and (for instance in a physical settlement, such as a CSO) liquidation of the delivered obligations. The amount consists of the aggregate notional amounts of the reference obligations yet to be completely settled, as well as any additional cost expected during the period from the scheduled termination date until the anticipated final maturity date. Depending on the structure of the transaction at hand, and in particular any ongoing cost, the SPV may need to add a further amount to prevent a shortfall until such time as settlement is completed and the notes may be redeemed. After settlement is completed, the SPV will then distribute this reserve or holdback amount in accordance with the priorities of payment.

The waterfall in square transactions is similar to that of a synthetic CDO. It is easier to document than in a traditional securitisation, as in most synthetic securitisations the originator will be the sole party providing the cash flow for the SPV (the exception being the CSO structure, in

which the cash flow originates from multiple dealers). Three comments in this regard.

The first and key point is that in squares the nature of the transactions referenced can vary substantially in terms of structure. One need only think of CDO transactions, typically bullet payments at maturity, and various types of ABS with some prepayment or amortisation feature. This diversity requires some amendments in the conditions of the notes.

The second is the inclusion of management fees in the waterfall. Although not particular to squares, it is worthwhile noting. Management fees were initially just split into a senior and a junior part. Over time, however, the payment structures have evolved to ensure managers are rewarded on the basis of the performance of the transaction during its full life rather than in the first year or two. For instance, a base fee may be topped up with a flexible fee, which is dependent on the performance of the transaction meeting a certain 'hurdle' rate.

The third comment relates to termination payments. Termination payments may be payable upon termination of the credit default swap by either the originator or the SPV. The key concern is in derivatives, the parties' exposure, and as a result which party will have to pay the other is beyond the parties control; it depends on market movements. As the size of the payments due is not ascertainable in advance, this potentially affects the ability of the SPV to service its payments under the credit-linked notes. Rating agencies as a result require limitation or elimination of these payments in the documentation.

Though termination payments are sometimes excluded altogether, it is more common to include them in the waterfall, albeit at different levels. A distinction is made between cases in which the originator or the SPV is 'at fault'. Essentially, payments to the noteholders should not be affected by an obligation of the SPV to pay the originator as a result of a failure on the part of the originator. For that reason, the subordinated payments are usually more broadly defined. They include payments due by the SPV to the originator upon termination of the credit default swap, where either the originator is the sole 'defaulting party', or it is the sole 'affected party'. The latter addition is notable. It is clear that the defaulting party should not profit from its default. The relevant question for investors is what happens in a non-default scenario, in an ISDA termination event. If this event, for instance a change of law, solely affects the legality of the originator's obligations under the credit default swap, then any termination payments will be subordinated. Investors should be aware that sometimes tax-related termination events are excluded from the subordinated payments, effectively burdening the noteholders with the risk of an adverse change in the originator's tax regime.

2.6 Management Agreement

Although initially most squares have been static transactions, there is an increasing appetite for managed squares, in which a third party is engaged to opt out of seemingly downward transactions, and allowed to use proceeds to instead invest in other, more promising deals. In general terms, it raises the question as to the expertise of the manager to a whole new level. The manager needs to be familiar with a range of investment products to do its job well.

Managed transactions are by no means new to the market, and there are various ways to allocate the tasks (and more importantly) responsibilities. In some transactions, for instance, the manager will have a merely advisory capacity. As 'investment advisor' it proposes removals or additions to the portfolio. The actual decision is left with the SPV, or, more precisely, an investment committee of the SPV, in which the manager has a majority vote. In other deals, the manager is allowed significant freedom to manage the portfolio on a day to day basis. In this format, authority is delegated. In either format, managers are, of course, quite strict in excluding their liability. But tension can arise, for instance when the originator also acts in a capacity of manager (or at least as the entity able to substitute assets in the portfolio).

There will always be disappointments, leading to claims of transactions mismanaged and mis-sold, for instance if increasingly risky and esoteric assets were brought into the portfolio, resulting in an off-mainstream risk profile, and more than just a couple of downgrades. A transaction may be mis-sold if the originator failed to disclose the particular risks associated with the nature of the square transaction. But it is not easy to envisage such claims being successful, barring exceptional circumstances. *Caveat emptor* is a rule that particularly applies to a new product sold in the market (don't they always seem to have a hidden flaw?).

As regards the documentation of managed squares, two issues are of prime concern for investors. The first is in drafting the discretion available to managers. This is solved by defining securities as either 'credit impaired' or 'credit improved'. For instance, it is only if a security or reference entity has become 'credit impaired' that the manager is able to remove it from the portfolio. Generally, the manager is awarded quite a bit of flexibility in the transaction at the outset of the transaction. If the performance of the transaction deteriorates (e.g. if any classes of credit-linked notes are downgraded), the 'discretionary' trading ability of the manager is phased out and curtailed solely to credits for which an objective rationale merits a trade, for instance the downgrade of a reference entity or a substantial change in its credit spread in the credit default swap market.

The second concern is whether profits and losses resulting from the managing of the portfolio are trapped within the structure or not. A full discussion however will take us too far from the topic of this chapter, squares.

2.7 Collateral Arrangements

The collateral arrangements for squares are similar to those in plain vanilla synthetic CDOs. In reading through a number of recent transactions, it appears that the use of repos has become more and more standard (but alternative solutions, such as exchange agreements and put options are also still quite common). In the repo arrangement, the SPV enters into a reverse repurchase transaction with a repo counterparty (which typically is the originator). Under this arrangement, the SPV uses the proceeds of the notes to purchase eligible securities from this repo counterparty. The repo transaction is settled on each coupon payment date, after which a new repo is entered into (a 'rolling' repo). The terms of the repo provide that the transaction may be partially unwound upon the occurrence of a credit event, and the SPV may sell as many securities to the counterparty against a set repurchase price as required to pay the settlement amount.

Sometimes additional liquidity support in the form of a standby liquidity facility is also required. This may for instance be suitable if the transactions referenced allow for payment-in-kind securities. The liquidity facility may then be drawn upon to compensate any shortfalls in revenue for the SPV.

2.8 Rating Agency's Perspective

The perspective of the rating agencies is addressed in detail in the Standard & Poor's chapter dealing with the modelling of squares. At this point it suffices to note that the methodologies of the three major rating agencies have substantially converged to a similar approach, and raise a couple of practical issues. Fitch has also published interesting research reports on this matter, referenced below.

As mentioned earlier, some underlying transactions, including CDOs, allow for payment-in-kind. According to Fitch, mezzanine CDO tranches are particularly appealing compared to junior ABS pieces. The modelling of transactions including PIK tranches needs to be accommodated. The deferral of interest under any of the referenced CDO or other securitisation transactions could potentially lead to a shortfall in revenue for the SPV, which may lead to a default on a coupon payment under the master transaction.

Furthermore, some types of securitisations are judged to be more risky investments than others. This is so for (underlying) synthetic CDOs, for the reasons outlined above (the risk of correlation and overlap). The terms of such deals may also give rise to concerns, such as the inclusion of an old form of restructuring or a slightly off-mainstream valuation process. In practical terms, a square may therefore include portfolio guidelines that limit the exposure to a particular type of securitisation in terms of notional amount or as a percentage of the overall underlying portfolio.

Some synthetic squares have been keen to include whole business securitisations (or, in acronym, WBS). These transactions offer a higher spread compared to other structured finance investments, such as RMBS. This is of course what makes them attractive to originators. However, WBS are quite different from other securitisations. They generally include a repayment of principal at various payment dates through the life of a transaction. A CDO, by contrast, typically only repays principal at the scheduled or final maturity date. The difference may need to be reflected in the definition of the credit events. Some transactions may even opt to completely exclude WBS from their reference portfolio (if indeed there is a link to redefining credit events, then this issue should have already been raised in the credit event analysis).

One of the more recent innovations in structuring CDO squares is the use of 'cross-subordination'. It is the sharing of subordination among the underlying CDOs. Fitch describes it in a recent research report, entitled 'Analysis of Synthetic CDO of CDOs', released in September 2004. In a standard square, losses on any of the underlying CDO tranches are passed on to the 'master' CDO. In a cross-subordinated structure, only the amount of tranche losses that exceeds the 'remaining' subordination is passed through to the master CDO. The 'remaining' subordination for each of the underlying CDO tranches is equal to the initial subordination less the total portfolio losses in the underlying CDO.¹¹ Other, more conventional structuring methods, such as turbo-notes are of course also found in squares (in these deals, the most expensive liabilities of the square transaction, typically the BBB notes, are paid down with excess spread; as these notes are paid down, the collateralisation increases, a cheaper alternative).

¹¹ Fitch Ratings, 'Analysis of Synthetic CDO of CDOs' (Global CDO Criteria Report, 13 September 2004), p. 3.

3. LEGAL AND REGULATORY ISSUES

Recharacterisation potentially affects both securitisation built upon a true sale of the assets as well as synthetic securitisations. The former could be argued to resemble a secured loan.¹² The latter bears similarities to an insurance contract.¹³ Broadly speaking, legal practitioners have, in collaboration with industry participants, in recent years substantially addressed recharacterisation concerns. In short, the proposition that credit derivatives (and credit default swaps in the context of a synthetic securitisation in particular) do not constitute a contract of insurance is by now generally accepted.

Structured finance transactions, such as synthetic transactions, are prone to the allegation that substance should prevail over form. In economic terms, a credit default swap used in a synthetic securitisation resembles an insurance contract. Such a recharacterisation could affect the enforceability of the credit default swap. It might even be considered null and void. In addition, the seller of protection might be deemed to have carried out an insurance business without the appropriate permits and may be subject to insurance tax and/or fines.

The main argument to distinguish synthetic securitisations from insurance contracts is that the buyer of protection need not have incurred loss as a precondition to claim payment of a settlement amount. Indemnity is not an issue, as it is in an insurance contract. In the context of trading credit default swaps, the fact that the buyer of protection need not have incurred a loss is particularly true, as the buyer of protection need not necessarily own the reference obligation. In synthetic securitisations driven by regulatory capital relief, the originating bank may continue to hold the reference obligation throughout the term of the transaction. The manner in which the valuation process of the defaulted assets is documented then becomes the focal point. Careful drafting is required; for instance, if the settlement amount is based upon the diminution in market value of the reference obligations, rather than on a pre-agreed lump sum, as

¹² For further information on the recharacterisation of traditional securitisations as disguised loans, refer to S. L. Schwarz, 'Securitisation Post-Enron' (2004) 25 *Cardozo L Rev* 1539 and S. K. Henderson, 'Mahonia: Purchase Contract or Loan, and Does it Matter?' (2003) 18 *JIBFL* 47. It emerges from these articles that the collapse of Enron, and its use and abuse of special purpose vehicles to manipulate its balance sheet, has made it more likely that judges will use the 'substance over form' approach in structured finance, particularly if the transaction is perceived to be manipulative in nature.

¹³ The recharacterisation approach in England is usually based upon *Welsh Development Agency v Export Finance Co Ltd* [1992] BCLC 148.

the former more closely resembles a compensation of loss incurred. The credit default swap could specifically provide that the obligations of the seller of protection exist irrespective of whether the buyer of protection suffers a loss or is exposed to the risk of loss following the occurrence of a credit event and regardless of whether the buyer of protection has any legal or beneficial interest in the reference entity or any economic interest in respect thereof.¹⁴

The relevant clause in the portfolio credit default swap might read along the following lines: 'each party agrees with the other that, so long as either party has or may have any obligation under this transaction, (a) the obligation of the seller exists regardless of whether the buyer suffers a loss or is exposed to the risk of loss following the occurrence of a credit event, and regardless of whether the buyer has any legal or beneficial interest in the obligations or any economic risk in respect thereof or in respect of any reference entity and therefore the transactions documented under this confirmation are not contracts of insurance and (b) the transactions documented under this confirmation do not create either a direct or indirect obligation of any reference entity or a direct or indirect participation in any obligation of any reference entity owing to such party'.

In synthetic squares, the argument is much the same. It has been argued, following the publication by Moody's of its rating criteria for resecuritisations, that credit events such as principal reduction come close to actually duplicating the loss incurred by the originator. However, this issue may be avoided (and in practice often is) by drafting the credit default swap in notional and hypothetical terms, rather than actual terms. In addition, the valuation of the reference obligation is based upon the perception of the market's view of the asset, rather than the originator's. Of course, a fixed recovery or digital credit default swap also allows the originator to minimise recharacterisation concerns.

3.1 Regulatory Capital Relief

Regulatory capital generally, and its future under the revised framework for capital adequacy, commonly referred to as Basel II, is addressed in more detail in separate contributions to this book from the Bank for International Settlements and the Dutch Central Bank. At this point, a couple of comments suffice. First, the harmonisation of credit event definitions

¹⁴ See S. Firth, *Derivatives Law and Practice* (Sweet & Maxwell, London, 2003), para 16-031. Firth alludes to the fact that if the reference obligation will inevitably be held by the buyer (the originator, for example, because it is not transferable) throughout the life of the transaction, an insurable interest may be found to exist.

will further facilitate discussions between originators and their respective supervisors for recognition of credit risk transfer in square transactions for capital relief purposes. Second, the Basel Committee has been less than forthcoming in granting capital relief for transactions without the credit event restructuring. Originators are, under the revised framework, hit with a substantial discount in their capital relief. Though these discussions are to some extent inevitably influenced by different geographic practice, it may be anticipated that a streamlining of the credit events required for capital relief, as fostered by the rating agencies (upon the allocated rating of which depends so much in the revised framework) may finally eliminate restructuring as a much contested credit event for capital relief transactions.

4. GOING FORWARD

The CDO market has witnessed a remarkable expansion and sophistication in recent years. There are no signs these trends are abating. In this context, squares have evolved from something quite esoteric to almost mainstream products, traded across the major financial centres globally. The market for squares has matured in recent years, and investors are much more familiar with the different risk profiles achievable in squares, in particular the opportunity to take on market risk rather than event type risk sometimes associated with synthetic CDOs more generally. One of the more recent developments in the CDO market capitalises on this: it centres on the issuance of CDOs in which corporate exposure through the liquid (and more flexible) credit default swap market is combined with exposure on the market as a whole through underlying CDOs and ABS.

It is intended that the above discussion facilitate a better understanding of the innovative product that squares are. They have developed into an investment product in their own right, and, one might add, will remain so for quite some time.