

# Credit fusion

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consider further innovation in  
the integration of cash and synthetic credit  
markets: a proposed multi-SPV hybrid CDO structure

The synthetic collateralised debt obligation (CDO) is well-established as a vehicle used to facilitate balance sheet capital management, credit risk transfer and credit trading. It merges traditional securitisation technology with credit derivative instruments. In this article, we propose an innovative new structure that combines a multi-special purpose vehicle (SPV) arrangement together with a hybrid cash and synthetic element that splits the vehicle into stand-alone pieces to suit specific investor requirements.

The structure uses existing technology, packaged together in a way that integrates cash and synthetic markets. This results in a product offering greater flexibility than has been issued in the market before now and enables financial institutions that already originate cash or synthetic CDOs to benefit from this flexibility.

The new structure may be used to achieve one or a combination of the following:

- Credit risk transfer and/or regulatory capital management of assets already on the balance sheet
- Exploiting arbitrage opportunities between cash and synthetic credits
- Obtaining funding for acquiring assets subsequently used in an arbitrage synthetic transaction
- A significant increase in potential deal size, due to the benefits arising from the multi-SPV structure

- Any combination of conventional bonds, structured financial products (ABS, MBS and CDO), loans and synthetic assets such as credit default swaps in the reference portfolio

- A multi-currency capability in the underlying asset pool

- Leveraging the credit expertise of a fund manager to deliver gains for the equity participants in the vehicle

- Meeting the requirements of a varied class of investors by means of the multi-SPV structure, including multi-currency requirements and specific fund management styles.

## The synthetic CDO

The development in securitisation technology has resulted in structures evolving beyond the cash flow asset-backed security, such as the synthetic CDO. These were introduced to meet differing needs of originators, where credit risk transfer is of more importance than funding considerations (for instance, see Das [2001] and Fabozzi and Goodman [2001]).

Compared with conventional cashflow deals, which feature an actual transfer of ownership or true sale of the underlying

assets to a separately incorporated legal entity, a synthetic securitisation structure is engineered so that the credit risk of the assets is transferred by the sponsor or originator of the transaction from itself to the investors by means of credit derivative instruments (see Bomfim [2002]). The originator is, therefore, the credit protection buyer and investors are the credit protection sellers. This credit risk transfer may be undertaken either directly or via an SPV.

Using this approach, underlying or reference assets are not necessarily moved off the originator's balance sheet, so it is adopted whenever the primary objective is to achieve risk transfer rather than balance sheet funding. The synthetic structure enables the removal of credit exposure without asset transfer, so may be preferred for risk management and regulatory capital relief purposes. For banking institutions, it also enables loan risk to be transferred without selling the loans themselves, thereby allowing customer relationships to remain unaffected.

Since the inception of the first synthetic deals, the market has evolved, with continuing development of newer structures to meet differing originator and investor

**Exhibit 1. Four generations in the development of synthetic CDOs**



requirements. The proposed multi-SPV may be considered the fourth generation of such products, following the structures introduced previously (see Choudhry [2004]). This is illustrated in Exhibit 1.

The first European synthetic deals were balance sheet collateralised loan obligations (CLOs), with underlying reference assets being commercial loans on the originator's balance sheet. Originators were typically banking institutions. Arbitrage synthetic CDOs have also been introduced, typically by fund management institutions, and involve sourcing credit derivative contracts in the market and then selling these on to investors in the form of rated notes, at the arbitrage profit. Within the synthetic market, arbitrage deals were the most frequently issued during 2001, reflecting certain advantages they possess over cash CDOs (see McPherson et al [2002]).

## Mechanics

A synthetic CDO is so-called because the transfer of credit risk is achieved synthetically, via a credit derivative, rather than by a "true sale" to an SPV. Thus, in a synthetic CDO, the credit risk of the underlying loans or bonds is transferred to the SPV using credit default swaps and/or total return swaps (TRS). However, the assets themselves are not legally transferred to the SPV, and they remain on the originator's balance sheet. Using a synthetic CDO, the originator can obtain regulatory capital relief<sup>1</sup> and manage the credit risk on its balance sheet but will not be receiving any funding.

In other words, a synthetic CDO structure enables originators to separate credit risk exposure and asset funding requirements. The credit risk of the asset portfolio, now known as the reference portfolio, is transferred, directly or to an SPV, through credit derivatives. The most common credit contracts used are credit default swaps. A portion of the credit risk may be sold on as credit linked notes (CLNs). Typically, a large majority of the credit risk is transferred via a super-senior credit default swap,<sup>2</sup> which is dealt with a swap counterparty but usually sold to monoline insurance companies at a significantly lower spread over Libor compared with the senior AAA-rated tranche of cash flow CDOs. This is a key attraction of synthetic deals for originators.

Most deals are structured with mezzanine notes sold to a wider set of investors, the proceeds of which are invested in risk-free collateral such as Treasury bonds or Pfandbriefe securities. The most junior note, known as the first-loss piece, may be retained by the originator. On occurrence of a credit event among the reference assets, the originating bank receives funds remaining from the collateral after they have been used to pay the principal on the issued notes, less the value of the junior note.

A generic synthetic CDO structure is shown in Exhibit 2. In this generic structure, the credit risk of the reference assets is transferred to the issuer SPV and, ultimately, the investors, by means of the credit default swap and an issue of credit linked notes. In the default swap arrangement, the risk transfer is undertaken in return for the swap premium,

which is then paid to investors by the issuer. The note issue is invested in risk-free collateral rather than passed on to the originator, in order to de-link the credit ratings of the notes from the rating of the originator.

If the collateral pool was not established, a downgrade of the sponsor could result in a downgrade of the issued notes. Investors in the notes expose themselves to the credit risk of the reference assets and, if there are no credit events, they will earn returns at least the equal of the collateral assets and the default swap premium. If the notes are credit-linked, they will also earn excess returns based on the performance of the reference portfolio. If there are credit events, the issuer will deliver the assets to the swap counterparty and will pay the nominal value of the assets to the originator out of the collateral pool. Credit default swaps are unfunded credit derivatives, while CLNs are funded credit derivatives where the protection seller (the investors) fund the value of the reference assets up-front, and will receive a reduced return on occurrence of a credit event.

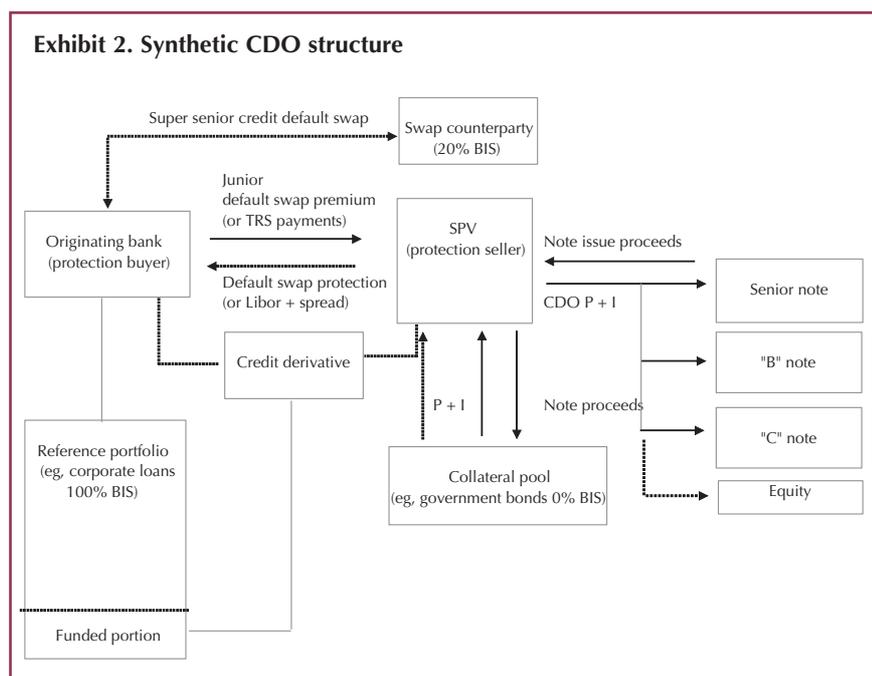
The credit swap element is termed the super-senior piece and is considered very high quality. Given the mechanics of the structure, it is considered as having an almost zero probability of suffering credit losses. The "equity" tranche of the issued notes is the first-loss piece and is usually retained by the originator. It carries a 100% risk weighting under Basel 1.

## Motivations behind issue

Differences between synthetic and cash CDOs are perhaps best reflected in the different cost-benefit economics of issuing each type. The motivations behind the issue of each type usually also differ.

One key motivation for the rise of the synthetic CDO is credit risk management. The originators of the first synthetic deals were banks who wished to manage the credit risk exposure of their loan books, without having to resort to the administrative burden of true sale cash securitisation.

They are a natural progression in the development of credit derivative structures, with single name credit default swaps being replaced by portfolio default swaps. Synthetic CDOs can be de-linked from the sponsoring institution, so that investors do not have any credit exposure to the sponsor itself. The first deals were introduced (in 1998) at a time when widening credit spreads and the worsening of credit quality among originating firms meant that



investors were sellers of cash CDOs that had retained a credit linkage to the sponsor.

A synthetic arrangement also means that the credit risk of assets that are otherwise not suited to conventional securitisation may be transferred, while assets are retained on the balance sheet. Such assets include bank guarantees, letters of credit or cash loans that have some legal or other restriction on being securitised. For this reason, synthetic deals are more appropriate for assets that are described under multiple legal jurisdictions.

The other key motivation behind the issue of synthetic CDOs has been regulatory capital management. A bank holding a corporate loan directly on its books must, under Basel 1, hold risk-based capital equal to 8% of the notional value of the loan, as this would be a 100% risk-weighted asset. Under a synthetic CDO (or CLO), where the credit risk of the asset is transferred onto the SPV via an unfunded or partially unfunded structure, the risk weighting will go down to 20%,<sup>3</sup> on that nominal value of the loan that has been transferred by the credit derivative.

### The managed synthetic CDO

Managed synthetic CDOs are the third generation of the synthetic CDO structure. They are similar to the partially funded deals we described earlier except that the reference asset pool of credit derivatives is actively traded by the sponsoring investment manager. It is the maturing market in credit default swaps, resulting in good liquidity in a large number of synthetic corporate credits, that has facilitated the introduction of the managed synthetic CDO.

With this structure, originators can use credit derivatives to arbitrage cash and synthetic liabilities, as well as leverage off their expertise in credit trading to generate profit. The advantages for investors are the same as with earlier generations of CDOs, except that with active trading they are gaining a still-larger exposure to the abilities of the investment manager. The underlying asset pool is, again, a portfolio of credit default swaps.

However, these are now dynamically managed and actively traded, under specified guidelines. Thus, there is greater flexibility afforded to the sponsor, and the vehicle will record trading gains or losses as a result of credit derivative trading. In most structures, the investment manager can only buy protection (short credit) in order to offset an existing sold protection default swap. For some deals, this restriction is removed and the investment manager can

buy or sell credit derivatives to reflect his/her view of the underlying market.

The structure of the managed synthetic is similar to the partially funded synthetic CDO, with a separate legally incorporated SPV.<sup>4</sup> On the liability side, there is an issue of notes, which note proceeds invested in collateral as a form of credit support.

On the asset side the SPV enters into credit default swaps and/or total return swaps, selling protection to the sponsor. The investment manager (or collateral manager) can trade in and out of credit default swaps after the transaction has closed in the market.<sup>5</sup> The SPV enters into credit derivatives via a single basket credit default swap to one swap counterparty, written on a portfolio of reference assets, or via multiple single name credit swaps with a number of swap counterparties.

The latter arrangement is more common and is referred to as a multiple dealer CDO. A percentage of the reference portfolio will be identified at the start of work on the transaction, with the remainder of the entities being selected during the ramp-up period ahead of closing. The SPV enters into the other side of the credit default swaps by selling protection to one of the swap counterparties on specific reference entities.

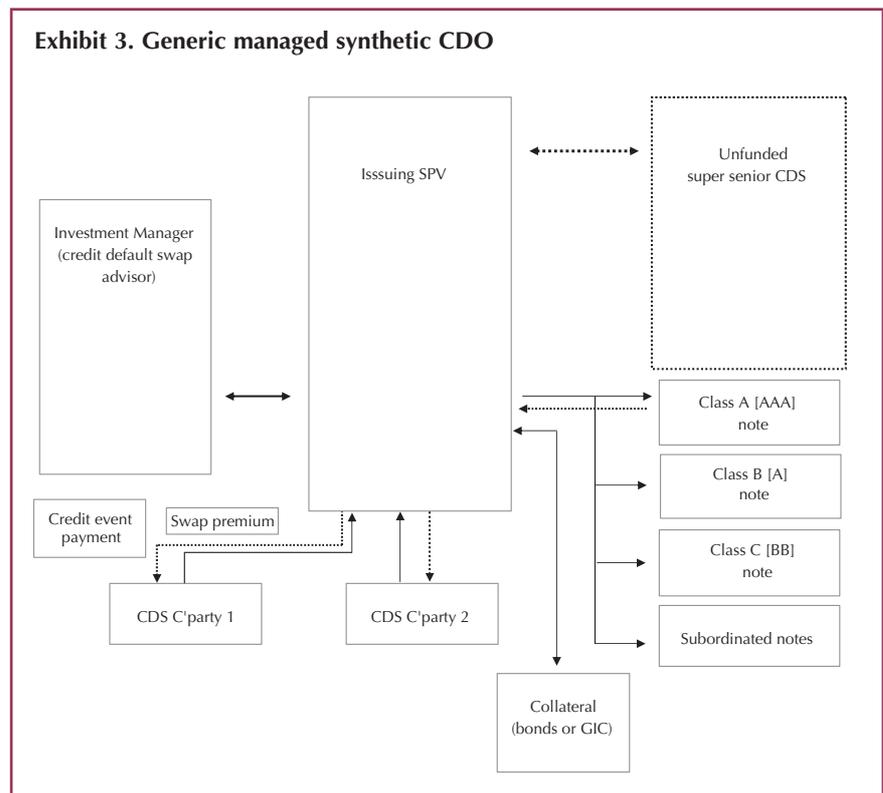
Thereafter the investment manager can trade out of this exposure in the following ways:

- Buying credit protection from another swap counterparty on the same reference entity. This offsets the existing exposure, but there may be residual risk exposure unless premium dates are matched exactly or if there is a default in both the reference entity and the swap counterparty
- Unwinding or terminating the swap with the counterparty
- Buying credit protection on a reference asset that is outside the portfolio. This is uncommon as it will leave residual exposures and may affect premium spread gains.

The SPV actively manages the portfolio within specified guidelines, the decisions being made by the investment manager. Initially the manager's opportunity to trade may be extensive, but this will be curtailed if there are losses. The trading guidelines will extend to both individual credit default swaps and at the portfolio level. They may include:

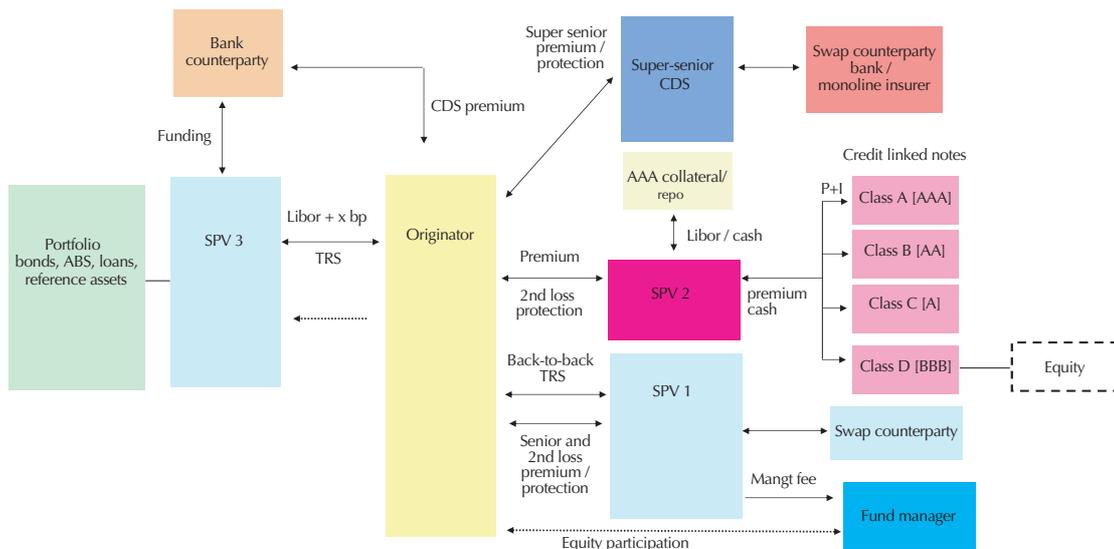
- Parameters under which the investment manager (in the guise of the SPV) may actively close out, hedge or substitute reference assets using credit derivatives
- Guidelines under which the investment manager can trade credit derivatives to maximise gains or minimise losses on reference assets that have improved or worsened in credit quality or outlook.

Credit default swaps may be cash settled or physically settled, with physical settlement being more common in a



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**Exhibit 4. Multi-SPV credit hybrid structure**



managed synthetic deal. In a multiple dealer CDO the legal documentation must be in place with all names on the counterparty dealer list, which may add to legal costs as standardisation may be difficult.

Investors who are interested in this structure are seeking to benefit from the following advantages compared to vanilla synthetic deals:

- Active management of the reference portfolio and the trading expertise of the investment manager in the corporate credit market
- A multiple dealer arrangement, so that the investment manager can obtain the most competitive prices for default swaps
- Under physical settlement, the investment manager (via the SPV) has the ability to obtain the highest recovery value for the reference asset.

A generic managed synthetic CDO is illustrated in Exhibit 3 (on page 37).

### Multi-SPV credit hybrid

We now propose an innovative new structure that is designed to integrate the cash and synthetic credit markets in one vehicle. By arranging a CDO deal in this way, originators will be able to attract wider investor interest. The vehicle we describe combines a cash funded element as well as a synthetic

Exhibit 5. Proposed deal terms Multi-SPV credit hybrid structure	
Portfolio size	€1bn - €7bn
Trade date	Month 1 Year 1
Ramp-up end date	Month 1 Year 2
Call date	Month 1 Year 7
Final maturity	Month 1 Year 20

element, hence the term “hybrid”. The active management of the vehicle will be similar to that we have described in the previous section on managed synthetic CDOs.

The structure diagram is shown at Exhibit 4, with proposed illustrative terms in Exhibit 5. The proposed note tranching and funding, using rates obtainable in the market as at July 2003, is shown at Exhibit 6.

The structure is comprised of the following:

- A reference portfolio sourced in the market or on originator’s balance sheet
- A TRS set up for funding purposes
- A back-to-back TRS
- A second-loss credit protection credit default swap
- A funded element of credit linked notes issued by SPV 2
- If required, a managed arbitrage-element of credit default swap trading undertaken out of SPV 1.

The TRS is not the generic TRS but rather a funded total rate-of-return swap of the form shown in Exhibit 7. This is different to the usual unfunded structure seen with TRS contracts.

### Deal arrangement

The reference portfolio may be comprised of conventional bonds, asset-backed securities (ABS), loans or synthetic assets such as credit default swaps. The type of assets that can be placed in the portfolio are dictated by the deal terms and conditions. The portfolio is actively managed by the fund manager, which retains an equity participation in the deal. Assets can be substituted by the fund manager acting under portfolio guidelines.

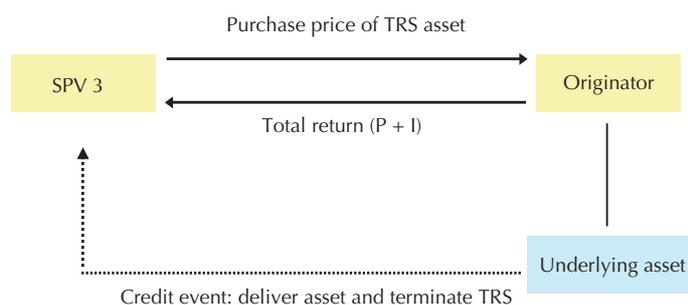
The funding stage of the transaction, indicated by SPV 3 in Exhibit 4, is executed first. This enables the deal to acquire assets. Acquisition of assets takes place during the initial “ramp-up” period as well as during the trading period after the deal has been closed, that is, brought to market. SPV 3 enters into a back-to-back TRS with the originator that transfers the total return of assets to the originator and eventually on to a swap counterparty via SPV 1. The fund manager can execute credit derivatives in the market via SPV 1, and a multi-dealer arrangement that would be conducted in a managed arbitrage synthetic deal (Choudhry [2002]).

**Exhibit 6. Proposed note tranching and funding costs, October 2003**

Class	Amount	Suggested percentage	Rating	Funding cost
Super senior swap	[ ]	86.00%	N/R	12-14 €bp
Class A	[ ]	4.95%	AAA	Libor + 20-24 €bp
Class B	[ ]	3.20%	AA	Libor+ 40-50 €bp
Class C	[ ]	2.80%	A	Libor + 80-90 €bp
Class D	[ ]	1.05%	BBB	Libor + 180-200 €bp
[Equity]	[ ]	2.00%	N/R	Retained spread

*Fuding cost – 25bp*  
*Regulatory capital – 3.6% [1.6% + 2.00%]*  
*Funding cost per unit of equity – 7.25bp*  
*No interest mis-match (pay and receive Libor)*

### Exhibit 7. Funded total return swap



The cash CDO element of the structure is executed by SPV 2, which issued credit linked notes. This SPV provides the second-loss protection for the originator. Proceeds of the note issue are invested in risk-free assets such as T-bills, or placed in a reserve cash account or structured deposit. If proceeds are invested in eligible investments, these are placed in a repo with a counterparty bank. The return on the issued notes is linked to the return from the collateral pool and the premium payments received by the SPV from the originator for taking on the second-loss risk protection.

The originator retains equity participation in the structure to benefit from gains made by the fund manager in running the portfolio and in entering into credit default swap trading.

### Deal highlights

For a balance-sheet-type transaction, the originator is able to transfer the credit risk of assets held on its balance sheet. It can also benefit from the arbitrage gain from sourcing credit protection on these assets in the credit default swap market, compared to the return received on these assets in the cash market. As we have seen, there is significant saving in regulatory capital charge from the partially-funded structure. In addition, the managed element of the deal, which is undertaken via SPV 1 and a multi-dealer counterparty arrangement, will allow the originator to undertake credit trading in the market.

The multi-SPV structure enables the originator to benefit from being able to undertake the following:

- Structure and close large volume deals by placing risk across a wide range of investors, both cash bond investors and credit derivative counterparties
- Provide a vehicle that enables each investor an opportunity to tailor the SPV to meet their specific investment requirements and criteria; for instance,

specific requirements in terms of currency requirements, market sector and particular fund management style

- Provides a flexibility for the portfolio manager to select assets in different currencies, say dollars, euros and sterling, while eliminating any currency risk for investors
- Allows the portfolio manager to leverage experience from different areas of their firm to blend skills into the management of the overall deal
- Using existing market familiarity with credit derivatives, cash and synthetic CDOs and managed arbitrage synthetic CDOs to introduce a more complex product across a wider range of investors and markets
- Retain flexibility in the deal structure so that risk exposure of any asset class can be transferred, and any asset class targeted in the market for credit trading
- Securitise both cash and synthetic assets as required.

Due to the familiarity with existing CDO product across US and European legal jurisdictions, it will be possible to bring the new structure to the market under existing legislation.

### Conclusion

The synthetic CDO structure is well-established in the debt capital markets. In its different variants, financial institutions have employed the product for balance sheet management, credit risk transfer and credit trading. We have shown how the deal mechanics can be advantageous for commercial banks wishing to effectively control regulatory capital. The greater liquidity of the synthetic credit market, compared to the cash market, has made synthetic CDO accessible for investors.

The next generation of this product will be designed to integrate cash and synthetic markets. By engineering one transaction that can generate interest across a wider range of investors, the originator will benefit from a greater

deal flexibility. This has significant implications for efficient balance sheet management. □

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### Footnotes

- <sup>1</sup> This is because reference assets that are protected by credit derivative contracts and which remain on the balance sheet, will, under Basel rules, attract a lower regulatory capital charge.
- <sup>2</sup> So called because the swap is ahead of the most senior of any funded (note) portion, which latter being senior means the swap must be super-senior.
- <sup>3</sup> This being the risk-weight for the swap counterparty.
- <sup>4</sup> We use the term SPV for special purpose vehicle. This is also referred to as a special purpose entity (SPE) or special purpose company (SPC).
- <sup>5</sup> This term is shared with other securitisation structures: when notes have been priced, and placed in the market, and all legal documentation signed by all named participants, the transaction has closed. In effect this is the start of the transaction, and all being well the noteholders will receive interest payments during the life of the deal and principal repayment on maturity.

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