



Advances in securitisation technology: synthetic deals and their use in balance sheet management and credit trading

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**Moorad Choudhry
YieldCurve.com**



Agenda

- /// Securitisation and the Collateralised Debt Obligation
- /// Credit derivatives and securitisation
- /// Synthetic CDOs
- /// The managed synthetic CDO
- /// Case studies:
 - **ALCO 1: balance sheet management and credit risk hedging**
 - **Robeco CSO IV B.V.: portfolio credit trading**

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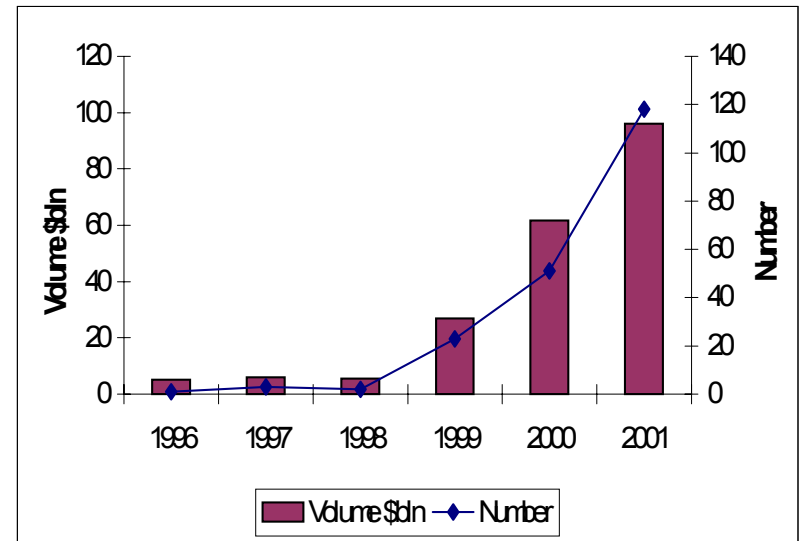


Introduction to CDOs

- /// **Collateralised Debt Obligations (CDOs)** are a major asset class in the securitisation and credit derivatives markets.
- /// The first CDOs used identical technology used in much earlier securitisation deals, which were **asset-backed securities** and **mortgage-backed securities**
- /// CDOs provide banks and portfolio managers with a mechanism to outsource risk and optimise economic and regulatory capital management. For **investors** they are a tool by which to diversify portfolios without recourse to the underlying assets.
- /// In a **cashflow CDO** the physical assets are sold to a special purpose vehicle (SPV) and the underlying cash flows used to back the principal and interest liabilities of the issued overlying notes.
- /// In a **synthetic CDO**, the structure employs **credit derivatives** and assets are usually retained on the balance sheet.

Background

- /// CDOs involve transfer of a portfolio of loans (**CLO**) or bonds (**CBO**) or a mix of these (**CDO**), and issuance of a tranche of notes, splitting risk levels to suit different investors.
- /// **Balance sheet CDO:** originator manages its own balance sheet by freeing up economic or regulatory capital.
- /// **Arbitrage CDO:** asset manager expands assets under management, and/or exploits differences in funding costs of assets and liabilities; and meets investors' demand for specific tranche of risk.



Growth of European CDO market (\$ bln)

(Source: Moodys)



Investor interest

/// Investment factors....consider

- Underlying asset class; bonds, loans, ABS, credit derivatives
- Portfolio features: rating, average life, source of portfolio
- Average life, credit ratings, interest spread
- Cashflow or market value?
- Distinct features: multi-currency underlying and/or overlying

/// Variation in risk/return profile

- Access to portfolio manager's expertise and infrastructure
- Favourable return comparison with established asset classes (credit cards, prime mortgages, etc)
- Senior note: relative value vs. other AAA assets; asset class diversification;
- Subordinated notes: leverage; diversification
- Equity piece: expected returns; leverage; callability

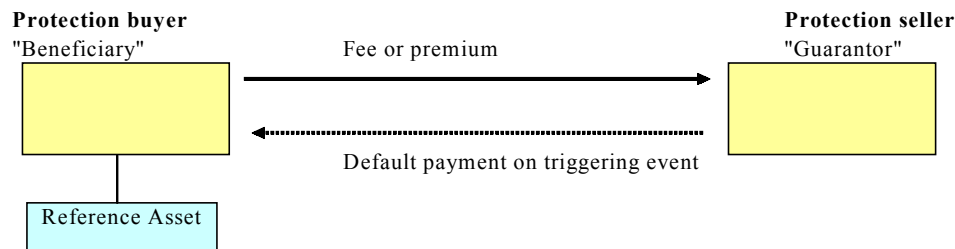


Credit Derivatives

- /// **Credit derivatives** are bilateral OTC contracts designed to reduce or eliminate credit risk exposure and enable credit risk to be taken on or reduced synthetically.
- /// Payout under a credit contract is dependent on the occurrence of a pre-defined **credit event**.
- /// In a **single-name** credit derivative, the reference entity is a single obligor
- /// Multiple-name credit derivatives (known as **basket** or **portfolio** products) are referenced to more than one obligor.
- /// For portfolio managers, **benefits** of using credit derivatives include:
 - Can be tailor-made to meet specific needs (eg., don't need to match terms)
 - Can be "sold short", which is not possible with say, a bank loan
 - A bank can off-load credit risk without taking the loan off balance sheet, thus preserving client relationships
 - As they isolate credit, enable this to be valued as an asset class in its own right, and thereby create a credit term structure
 - They are OBS instruments, with greater flexibility and reduced administrative burden for a similar type of exposure as cash assets

Credit derivative instruments

- /// With a credit derivative one is transferring credit risk of specified asset(s) to a 3rd party while keeping the asset(s) on the balance sheet – so not a “true sale” but off-balance sheet risk transfer.
- /// In a credit derivative contract the buyer of protection pays a premium to the seller of protection, who is obliged to pay out on occurrence of a credit event, a “trigger event” defined in the legal documentation,
- /// **Credit default swap**



- /// A credit default swap is deemed to be an unfunded credit derivative, because the protection buyer is exposed to counterparty risk from bankruptcy of protection seller
- /// The market also uses **total return swaps** and **credit-linked notes**.



Synthetic CDOs...

- /// Synthetic CDOs combine securitisation techniques with credit derivatives and were introduced in Europe in 1998.
- /// A vehicle used to transfer credit risk via credit derivatives, rather than via a “true sale” of receivables to an SPV. The variations include:
 - Funded synthetic, where liabilities are solely credit-linked notes
 - Unfunded, where liabilities are solely credit default swaps
 - Partially funded: both credit-linked notes and credit default swaps
- /// The originator transfers the credit risk of a pool of reference assets via **credit default swaps**, or transfers the total return profile of the assets via a **total return swap**.
- /// Typically an SPV issues one or more tranches of securities which are the **credit-linked notes**, whose return is linked to the performance of the reference assets.
- /// Proceeds of note issuance form the first-loss protection reserve and are usually invested in liquid AAA-rated collateral.
- /// Synthetic CDOs have evolved into a number of forms (static, dynamic, managed)



Motivation behind synthetic CDOs

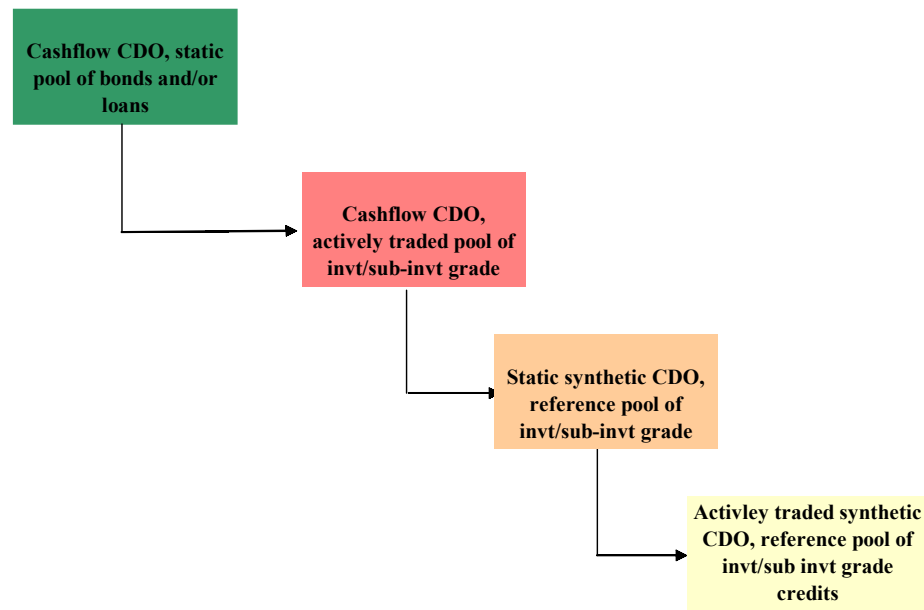
- /// The primary motivation for entering into an **arbitrage CDO** is to exploit the yield mismatch between a pool of assets and the CDO liabilities.
- /// Motivation behind a **balance sheet CDO** is to manage regulatory risk capital and engineer more efficient capital usage
- /// **Advantages of a synthetic structure**

Typically the reference assets are not actually removed from the sponsoring firm's balance sheet. For this reason:

- /// **synthetic CDOs are easier to execute than cash structures:** the legal documentation and other administrative requirements are less burdensome
- /// **there is better ability to transfer credit risk:** especially partial claims on a specific credit reference asset
- /// **risk transfer achieved at lower cost:** the amount of issuance is small relative to the reference portfolio. In a "partially funded" structure, funding is mainly provided by the sponsoring financial institution at lower cost than fully funded structures.
- /// **Lower risk weightings:** eg., 100% corporate loan vs. 0% on funded portion

CSO structures: the “4th generation”

- /// Collateralised synthetic obligations (CSO) enable portfolio managers to leverage their credit expertise via the CDS market
- /// Use of securitisation methods to increase arbitrage returns
- /// In European market, a wider range of liquid credits than in cash market





The managed synthetic CDO

- /// Essentially a managed synthetic CDO or “CSO” is an arrangement designed to provide investors with high return on a portfolio of investment grade credits
- /// Structured to have a higher average rating quality and shorter maturity than traditional high yield cashflow CDOs
- /// The portfolio manager actively trades in and out of credits according to its view,
 - Selling protection
 - Buying protection with swap counterparties, entering into offsetting swap
 - Each new default swap traded must meet portfolio tests (“covenants”) established by rating agency and confirmed by Trustee
- /// The structure is designed to generate higher zero-default expected return than cashflow CDO, typically 7-9% higher, with risk-adjusted return (historical default statistics) around 5-6% higher



CASE STUDY

Development Bank of Singapore (DBS):

ALCO 1 Limited

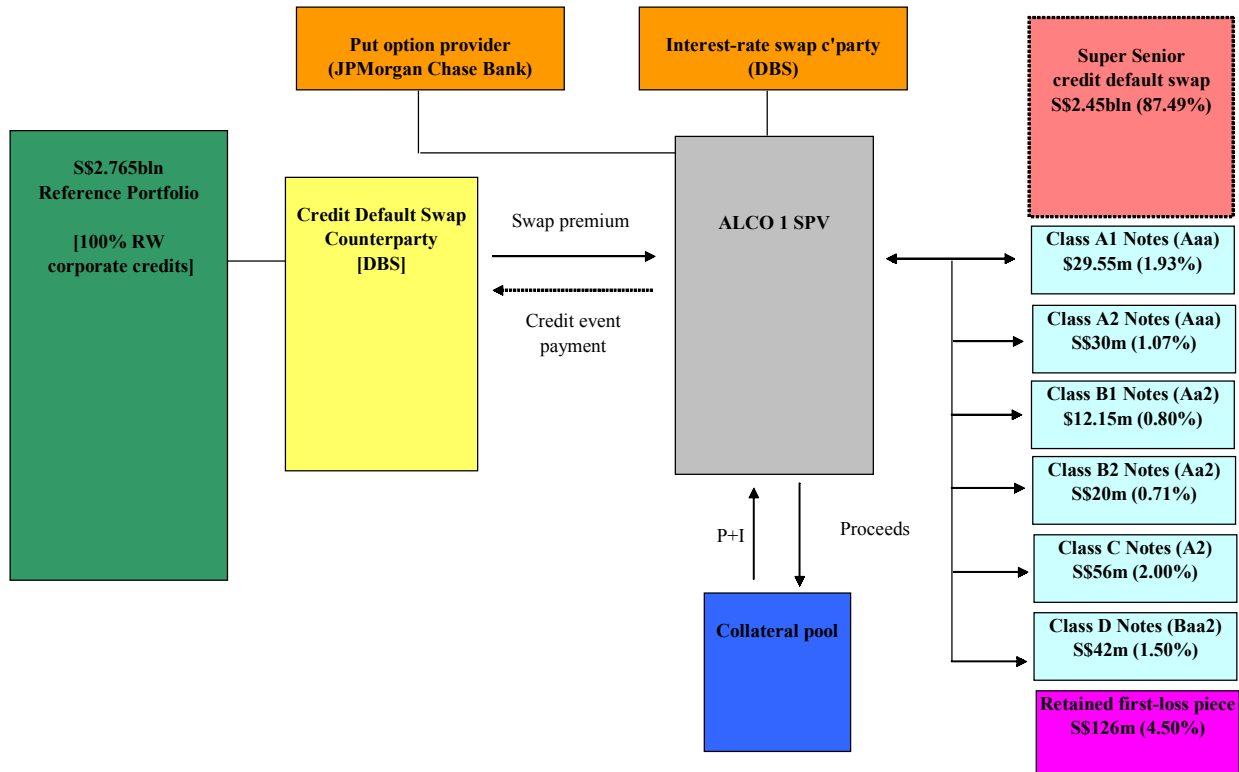
- Issuer: ALCO 1 Limited
- Originator: The Development Bank of Singapore Ltd
- Arrangers: JPMorgan Securities Ltd and DBS Ltd
- Trustee: Bank of New York
- Currency swap and put option: JPMorgan Chase Bank
- Interest rate swap: DBS Ltd
- “The first rated synthetic balance sheet CLO from a non-Japanese Asian bank” (Moody’s)



ALCO 1 Limited, Series 1 Notes

- /// Development Bank of Singapore (DBS) originated Asia's first (ex-Japan) balance sheet partially funded synthetic collateralised debt obligations (CDO) in December 2001.
- /// Structure allows DBS to shift the credit risk on a S\$2.8 billion reference portfolio of mainly Singapore corporate loans to a special purpose vehicle, ALCO 1, using credit default swaps.
- /// As a result: DBS can reduce the risk capital it has to hold on the reference loans, without physically moving the assets from its balance sheet.
- /// Structure is S\$2.45 bln super-senior tranche – unfunded credit default swap – with S\$224m notes issue and S\$126m first-loss piece retained by DBS. The notes are issued in six classes, collateralised by Singapore government T-bills and GIC account
- /// The issuer enters into credit default swaps with specified list of counterparties. The default swap pool is static, but there is a substitution facility for up to 10% of the portfolio.
- /// By structuring the deal in this way, DBS obtains capital relief on the funded portion of the assets, but at lower cost and less administrative burden than a traditional cashflow securitisation, and without having to have a true sale of the assets.

ALCO 1 structure diagram



Note tranche summary

Class	Amount	Per cent	Rating	Interest rate
Super senior swap	S\$2.450m	87.49%	NR	N/A
Class A1	US\$29.55m	1.93%	Aaa	3m USD Libor + 50 bps
Class A2	S\$30m	1.07%	Aaa	3m SOR + 45 bps
Class B1	US\$12.15m	0.80%	Aa2	3m USD Libor + 85 bps
Class B2	S\$20m	0.71%	Aa2	3m SOR + 80 bps
Class C	S\$56m	2.00%	A2	5.20%
Class D	S\$42m	1.50%	Baa2	6.70%

(Source: Moody's)

- /// Credit support comes from first-loss piece (S\$126m) plus note seniority
- /// Legal maturity March 2009
- /// Notional amount S\$2.765 bln, of which S\$224m is funded (notes issue)



CASE STUDY: ROBECO CSO III B.V.

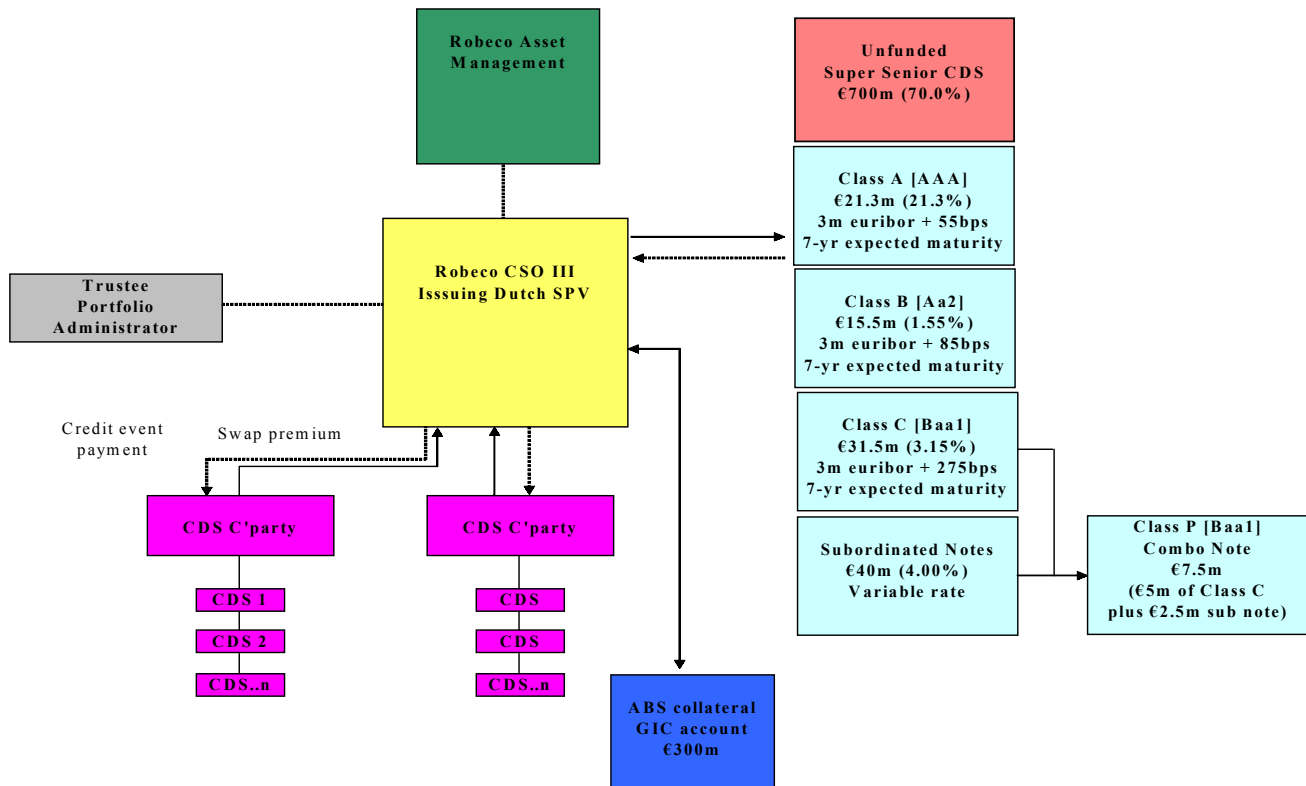
- Issuer: Robeco CSO III B.V.
- Originator: Robeco International Asset Management
- Arrangers: JPMorgan Securities Ltd and Robeco Alternative Investments
- Trustee: JPMorgan Chase Bank
- Portfolio Administrator: JPMorgan Chase Bank
- GIC account: Rabobank



Robeco CSO III B.V.

- /// Originator is Robeco Institutional Asset Management, issuer is Robeco CSO III B.V., bankruptcy-remote vehicle incorporated in Netherlands.
- /// Structure is €1bln of reference pool assets, partially funded managed synthetic CDO, with €300m issued in five classes of notes, collateralised by ABS bond (MBNA credit card issue, AAA rated) and GIC account
- /// The issuer enters into credit default swaps with specified list of counterparties. The portfolio of CDS is dynamic, as the portfolio manager can enter into new CDS or offset existing CDS by purchasing protection on the same entity.
- /// Trading CDS means that differences in spread levels at time of trade will lead to trading gains and losses.
- /// With Robeco CSO, manager can purchase protection **only** to close out an existing sale of protection

Robeco III structure diagram



Note tranche summary

Class	Amount €m	Percent	Rating	Type	Coupon
Class A	213	21.30%	AAA	Floating	3meuribor + 0.55%
Class B	15.5	1.55%	Aa2	Floating	3meuribor + 0.85%
Class C	31.5	3.15%	Baa1	Floating	3meuribor + 2.75%
Subordinated	40	4.00%	NR	Variable	
Class P	7.5		Baa1	Variable	

(Source: MbodyS)

- /// The transaction is 70% unfunded and 30% funded. The unfunded part comprises 100-130 reference assets, of which 95% are investment grade, with Baa2 maximum weighted average rating. This rating is above average compared to most CDOs due to the liquidity of the CDS market – more names can be traded in this market compared to the cash market
- /// The portfolio manager is able to undertake credit trading on European corporate and other credits in the more liquid credit derivatives market, where they may be liquidity problems in the cash market
- /// There is therefore a dynamic, active pool of assets (compared to previous static pool) whose credit can be traded with up to seven CDS counterparties



Portfolio Administration

- /// Calculation of cashflow waterfall report: expenses; interest and principal priority of payments
- /// Monthly report on status and quality of asset pool, including:
 - Aggregate principal balance outstanding of collateral debt securities
 - Balance of cash in collection account and collateral account
 - Valuation, and principal and interest on collateral securities
 - Diversity score, weighted average rating, weighted average spread, etc and tests as determined by rating agency (“compliance tests”)
 - Loss amounts
- /// Quarterly report
- /// Credit default swap administration, cashflow settlement and credit event confirmation agent



ITS Structured Finance Services



- ✓ Servicing for synthetic CDOs
- ✓ Credit default swap and total return swap cash flow settlement and monitoring
- ✓ Investor reporting on CDO reference asset pool
- ✓ Credit rating and credit event monitoring and verification

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Contact

ITS SFS Sales and Marketing

+44 20 7777 5434



Institutional Trust Services