



Introduction to Securitisation

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Agenda

- /// Securitisation

 - /// Motives and applications

- /// SPVs

- /// Process and mechanics

- /// Hypothetical deal illustration

- /// Regulatory capital effect

- /// Synthetic securitisation: synthetic CDOs

- /// Case study: ALCO1

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Securitisation

- /// A well-established capital markets procedure that enables banks and other financial institutions to raise funds, manage balance sheets and regulatory capital and reduce credit exposure.
- /// Originally introduced by US mortgage and credit card banks
- /// The process of securitisation creates *asset-backed securities (ABS)*.

- /// “...a framework in which some illiquid assets of a corporation or financial institution are transformed into a package of securities backed by these assets, through careful packaging, credit enhancements, liquidity enhancements and structuring.”
- /// Sundaresan, S., *Fixed Income Markets and their Derivatives*, South-Western Publishing, p 359, (1997).



Motivations behind securitisation

- /// Key driver is the need for banks to realise value from assets on their balance sheet
- /// Asset include residential mortgages, corporate loans, car loans, credit card debt, receivables such as equipment leases
- /// Motivations include
 - /// Funding assets;
 - /// Balance sheet capital management
 - /// Risk management and credit risk transfer
 - /// Realising value as a result of one or more of the above
- /// For some banks securitisation was an important part of their growth strategy (MBNA, Capital One, Northern Rock plc, etc)
- /// Products include ABS, MBS (RMBS, CMBS, etc), CDOs, Repacks, SIVs and synthetic structures



Funding

Banks use securitisation:

- /// to support rapid asset growth – e.g. Northern Rock plc has used this approach grow its loan book.
- /// to diversify their funding mix – e.g. mix of retail, interbank and wholesale funding.
- /// to reduce maturity mismatches in ALM – e.g. mortgage loans v. short term deposits.



Balance Sheet Capital Management

- /// Banks securitise to provide:
- /// regulatory capital relief – Basel I specifies capital levels and risk weightings for banks' assets – very restrictive.
- /// economic capital relief – SPVs are not banks therefore they are not affected by BIS directives. Capital requirements are significantly less than the 8% for banks.
- /// diversified sources of capital – securitisation can be regarded as an alternative to raising capital via the issue of preference shares, perpetual loan notes, step-up coupon notes.



Credit Risk Management

///Banks securitise to manage credit risk:

///Risk is reduced through securitisation since the assets have been sold to an SPV. Thus the danger of non-performance is removed from a bank's balance sheet.

///Two important advantages to this process are:

/// the removal of credit risk

/// third advantage is that should distressed assets recover or pay out a recovery value, any surplus made by the SPV will be paid to the originator (the bank)



Special purpose vehicles (SPV)

- /// A brass plate - the legal entity through which the securitisation process is undertaken. For this reason also sometimes called a conduit]
- /// Other terms include special purpose company (SPC) and special purpose entity (SPE)
- /// They act as the purchaser of the assets in the transaction, the assets being funded by the issue of liabilities in the form of notes (*cash* securitisation) to investors
- /// This true sale means legal control of the assets and the deal itself is in the name of the SPV – thus the assets are ring-fenced from those of the originator.
- /// Hence also the term “bankruptcy remote”.



Special Purpose Vehicles

- /// Investors in the repackaged assets have exposure to the underlying assets of the SPV.
- /// This exposure may be in the form of credit risk, interest rate risk or FX risk.
- /// To secure favourable tax treatment SPVs are frequently set up in offshore business centres such as Jersey or the Cayman Islands. But note that investors in some EU countries will only consider SPVs based in the EU. Ireland and the Netherlands have SPV-friendly legislation and are popular bases for SPVs.
- /// Tax considerations are of paramount importance and investors will be looking for low or even no tax rates.



Special Purpose Vehicles

- /// SPVs are used in a many applications:
- /// to transform illiquid assets in liquid assets, e.g. trade receivables, equipment lease receivables.
- /// to issue credit-linked notes: the note is linked to the assets of the SPV and its performance is linked to those assets.
- /// to convert currency of the underlying assets into a more acceptable currency to investors by means of a currency swap.



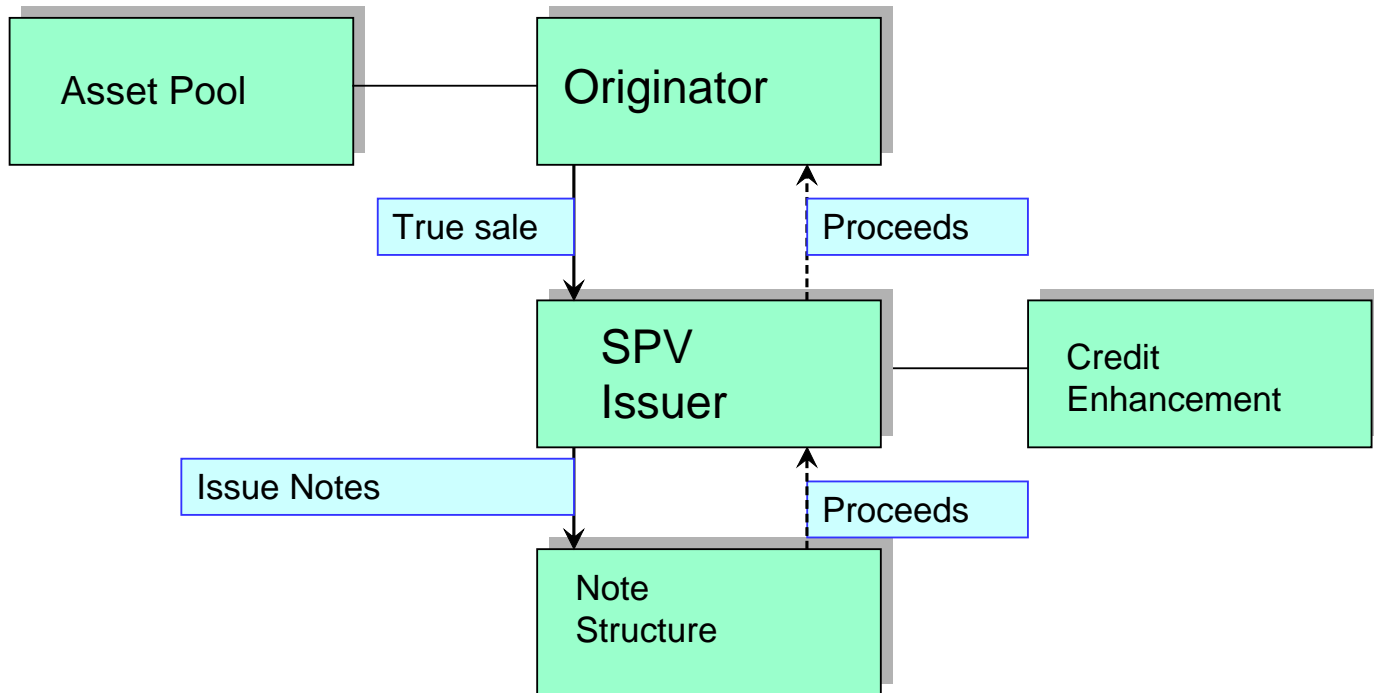
Securitisation process

Three main parties:

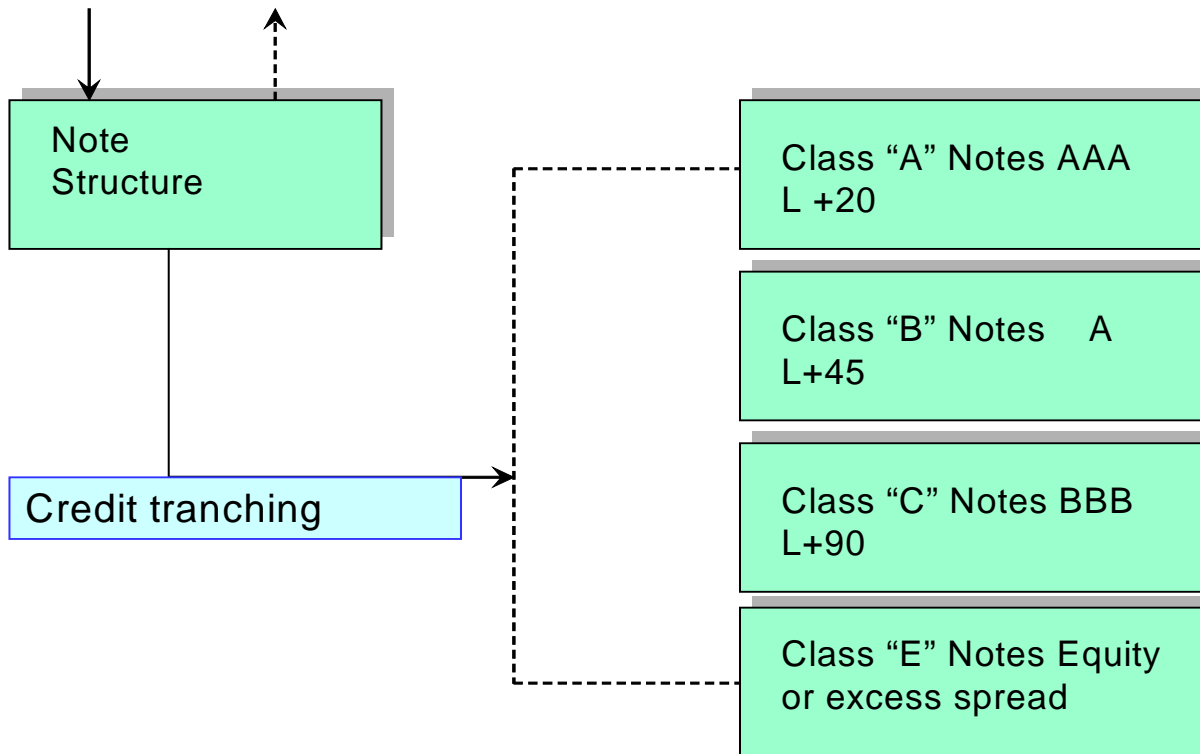
- 1.The Originator, the entity that is seeking to securitise assets off its balance sheet
- 2.The arranging bank or “structurer”. 1 and 2 are sometimes the same
- 3.The investors

A fourth “party” is the “Issuer” – which is the SPV, the arms-length legal entity that buys the assets and issues the liabilities

Securitisation process...



Securitisation process...





Securitisation process...

- /// The credit tranching is the key part of securitisation
- /// The seniority of the notes means that more junior noteholders take the higher risk, and statistically we can show that the risk of loss to senior noteholders is very low – hence they secure AAA rating
- /// If the originator retains the Equity piece, this will encourage external investors to come forward because they know they do not wear the first few defaults in the underlying assets
- /// Think of the Equity piece as the excess in a car insurance policy



Mechanics of securitisation

Securitisation involves a “true sale” from the balance sheet of the originator to a SPV. This involves:

- /// undertaking “due diligence” on the quality and future prospects of the assets;
- /// setting up the SPV and transfer of assets;
- /// underwriting the assets/loans for credit quality and servicing;
- /// determining the structure of the notes to be issued, in accordance with the originator and investor requirements;
- /// obtaining ratings for the notes to be issued;
- /// placing the notes in the capital markets.



SPV Structures

Two main types of securitisation structures:

1. The amortising (pass-through) – principal and interest payments made e.g. mortgages and MBS deals;
2. The revolving – for short dated assets such as bank loans and credit card debt.

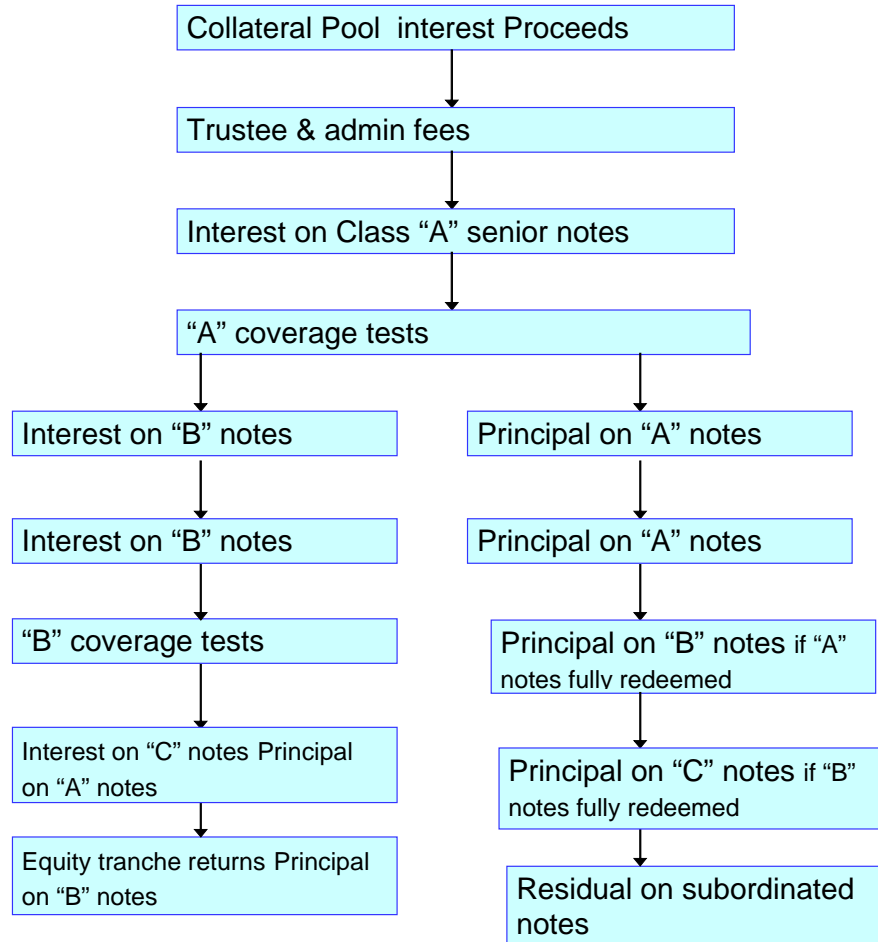
A third type: the master trust, is used by frequent issuers – can issue multiple securitisations from one SPV. MTs are used by MBS and credit card ABS originators.



Credit Enhancement

- /// Over-collateralisation
- /// Pool insurance
- /// Senior/Junior note classes
- /// Margin step-up features
- /// Excess spread

Priority of Payment





Hypothetical deal illustration

- /// Originator: ABC Airways plc
- /// Issuer: "Airways No1 Ltd" SPV
- /// Transaction: Ticket receivables airline future flow securitisation bonds €200m three-tranche FRNs, legal maturity 2010 Average life 4.1 years

- /// Tranches:
 - Class "A" note (AA) Libor + x bps
 - Class "B" note (A) Libor + y bps
 - Class "E" note (BBB) Libor + z bp

- /// Arranger: XYZ Securities plc



Issue Process

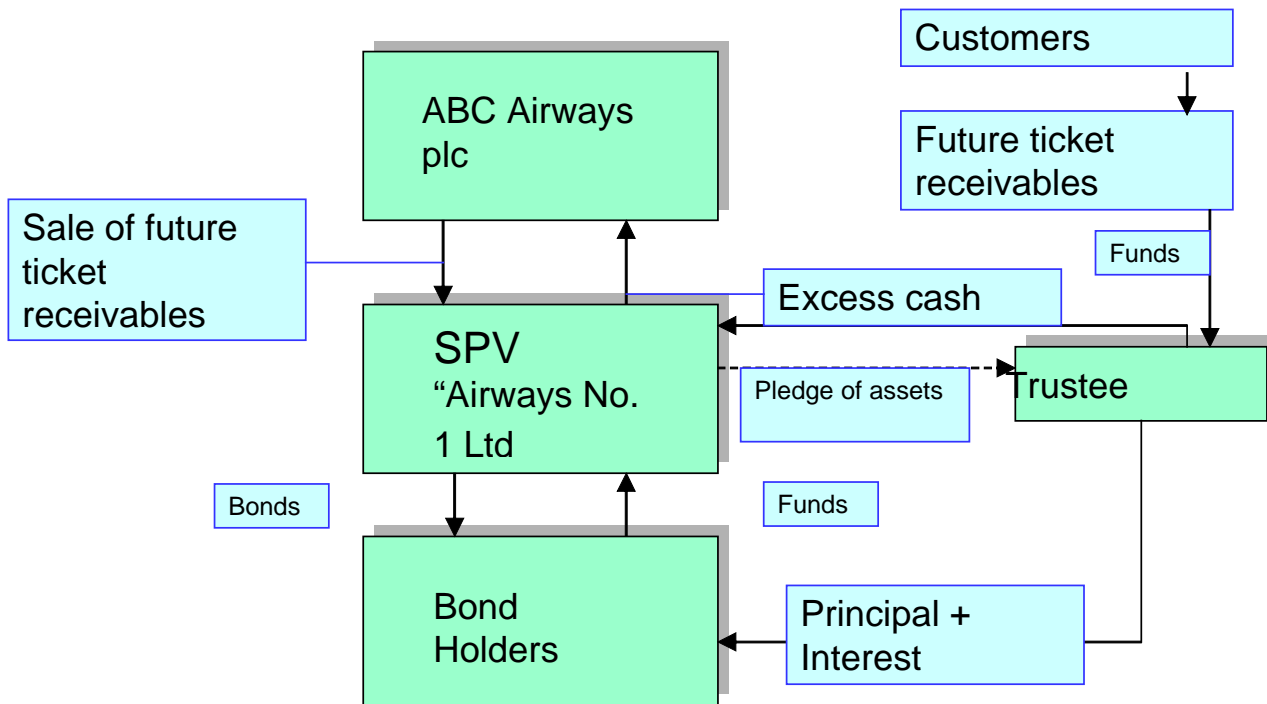
- /// XYZ undertakes “due diligence” on the assets to be securitised, it examines the airline performance figures over the last 5 years, and models future projected figures, including:
- /// total sales to passenger;
- /// total ticket sales;
- /// total credit card receivables;
- /// geographical split of ticket sales.



Issue Process...

- /// ABC Airways Ltd sells its future flow of ticket receivables to an offshore SPV (Airways No1 Ltd);
- /// the SPV issues Bonds to fund its purchase of receivables;
- /// the SPV pledges its right to the receivables to the trustee for the benefit of the bond holders;
- /// Trustee accumulates funds as received by SPV;
- /// bond holders receive interest and principal payments in order of seniority.

Deal structure





Issue Process...

- /// To estimate the size of the issue XYZ will construct a model taking into consideration:
 - /// Historical sales values;
 - /// seasonal factors;
 - /// credit card cash flows;
- /// The model will consider different scenarios and will calculate the minimum asset coverage levels required to service the debt.
- /// The Debt Service Coverage Ratio (DSCR) is a key indicator. The lower the ratio the better. Residential mortgage DSCR may be 2.5 – 3. The ABC Airways plc will probably be greater than 4.



Issue Process...

- /// Placing an issue is likely to be easier if Moody's, S&P or Fitch are involved in rating the issue. These credit rating agencies will look at:
 - /// Credit quality;
 - /// historical performance of the company, status, safety record, age of fleet and general economic outlook;
 - /// competition trends;
 - /// regulatory issues;
 - /// legal structure of the SPV;
 - /// cash flow analysis.
- /// The rating obtained may lead to XYZ re-designing the deal to improve the rating.

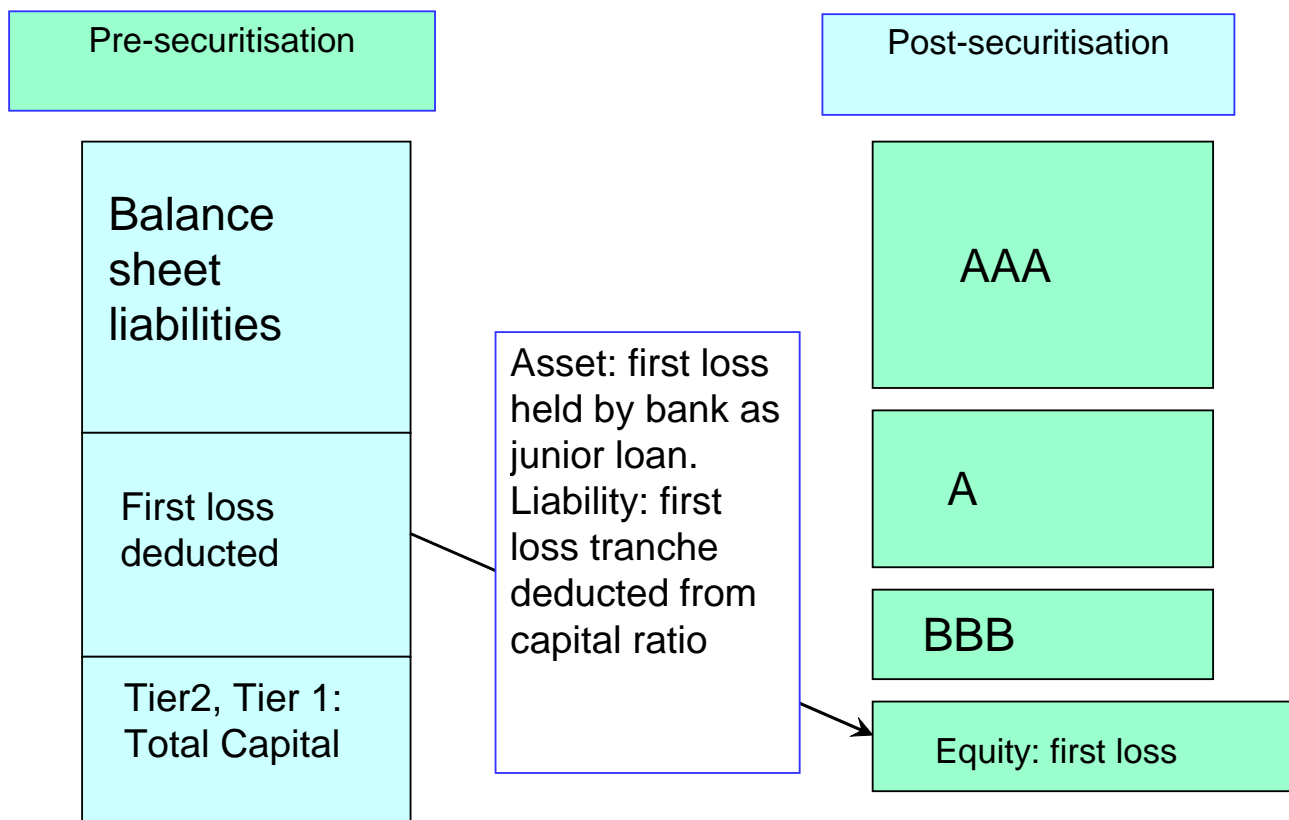


Regulatory Capital Effect

///Risk weights for Banking book assets under **Basel I**:

| Assets | Counterparty Risk Weight |
|---|---------------------------------|
| Cash & Sovereign debt (mainly OECD, domestic currency) | 0% |
| Loans to OECD banks | 20% |
| Loans secured on res. morts | 50% |
| Loans to corps and non-OCED | 100% |

Regulatory Capital Effect



Regulatory Capital Effect

///Risk weights for Banking book assets under **Basel II**:

| Asset Class | AAA to AA- | A+ to A- | BBB+ To BBB- | BB+ to BB- | B+ to B- | Below B-inc defaulted | Unrated |
|-------------------------------------|------------|----------|--------------|------------|----------|-----------------------|---------|
| Sovereigns | 0 | 20 | 50 | 100 | 100 | 150 | 100 |
| Banks option 1 | 20 | 50 | 100 | 100 | 100 | 150 | 100 |
| Banks option 2 > 3 months | 20 | 50 | 50 | 100 | 100 | 150 | 50 |
| Banks option 2 < 3 months | 20 | 20 | 20 | 50 | 50 | 150 | 20 |
| Corporates | 20 | 50 | 100 | 100 | 150 | 150 | 100 |



Regulatory Capital Effect

///Option 1:

///The risk weighting is based on the sovereign in which the bank is incorporated.

///Option 2:

///The risk weighting is based on the rating of the individual bank.



Synthetic CDOs

- ///These instruments facilitate **credit risk transfer** where this is more important than funding considerations.
- ///Credit derivatives are used either directly or via a SPV.
- ///The underlying assets are not moved from the originator's balance sheet. Rather the originator is a **credit protection buyer**.
- ///The investor is a **credit protection seller**.
- ///The process is invisible so originator (bank) and client relations are not affected.



Synthetic CDOs...

/// In a **synthetic structure** the transfer of risk is achieved through the use of credit derivatives rather than by the **true sale** of assets to a SPV.

/// The mechanics of the transaction are achieved by using CDSs or TRSs so that in effect the credit risk associated with the asset(s) is separated from the asset funding requirements.

/// Typically CDSs are used to create these structures and a portion of the credit risk may be sold on as CLNs.

/// So there are both funded and unfunded liabilities.



Synthetic CDOs...

///The structure usually involves a **super senior CDS** transacted with a background swap counterparty and then sold on to monoline insurance companies at spreads over Libor significantly lower than the senior AAA-rated tranche of cash flow CDOs.

///**Mezzanine notes** will be sold to a wider group of investor the proceeds from which will be invested in risk-free collateral such as Treasury Bonds or Pfandbriefe.

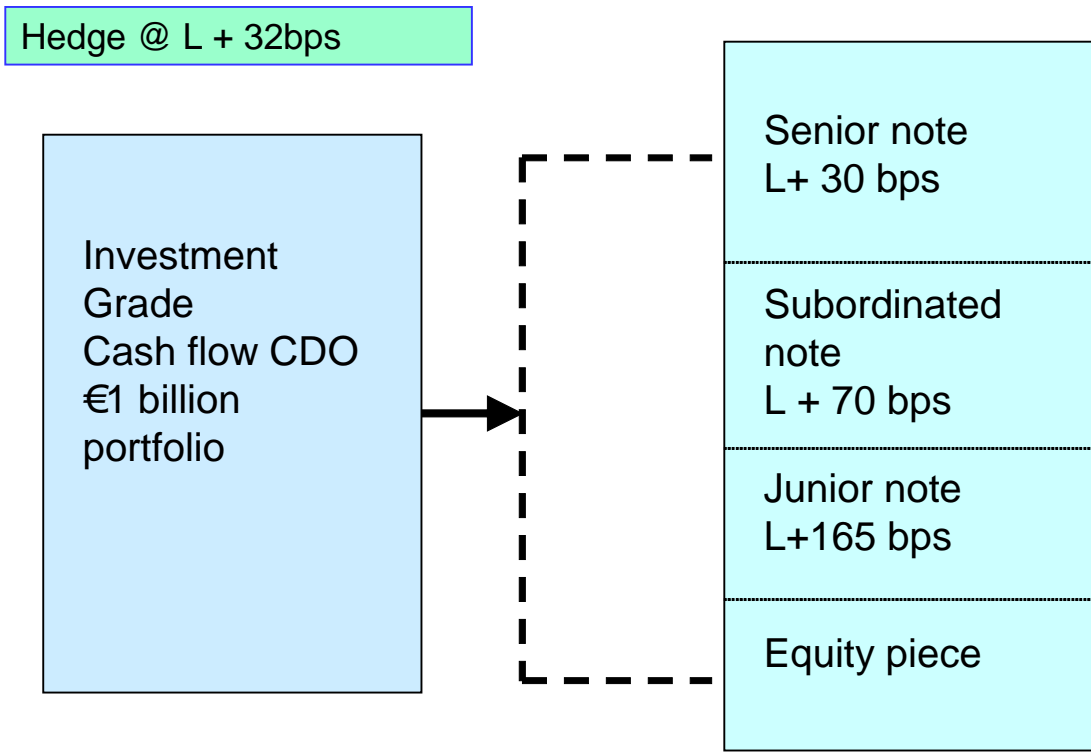
///The **first loss piece** may be held by the originator

///When a credit event occurs in the reference asset set, the funds realised from the sale of collateral will be used to pay the principal on the issued notes less the value of the junior note.

///The diagram of the following slides illustrates a generic synthetic CDO structure.



Cash flow CDO

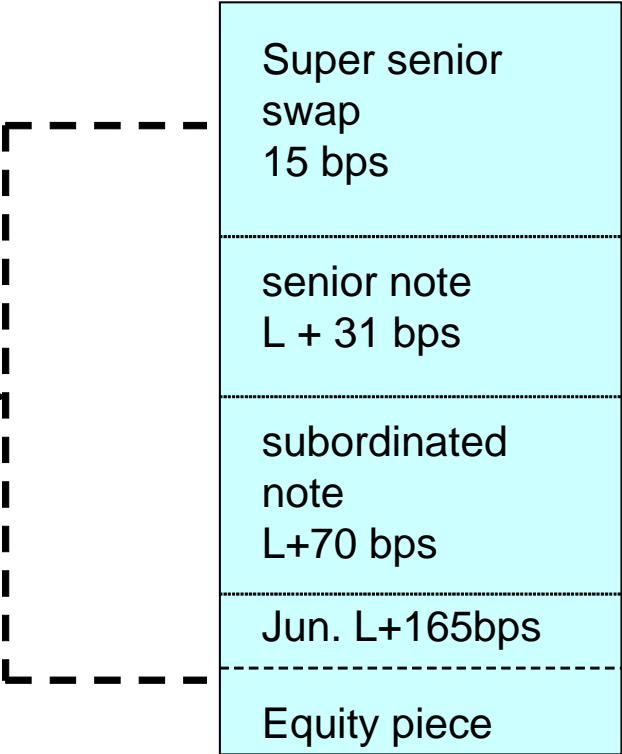




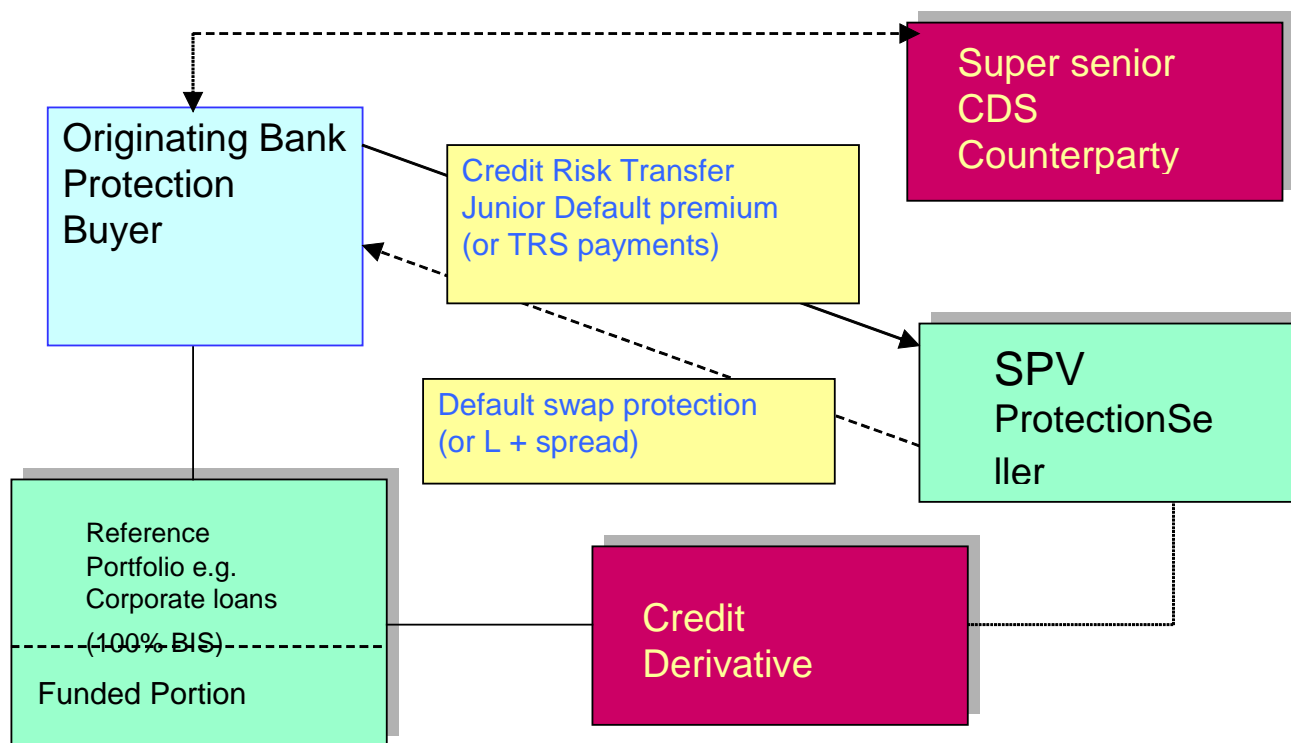
Synthetic CDO

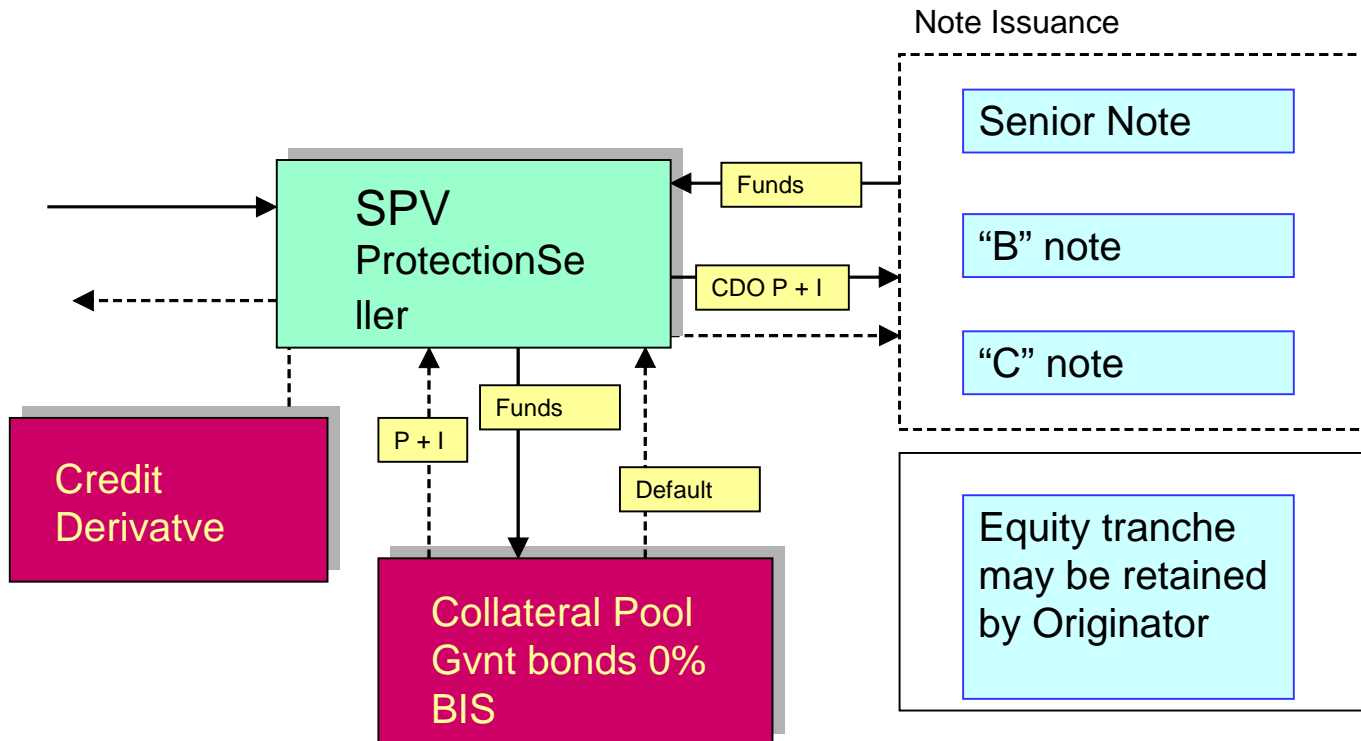
Hedge @ L + 20.5 bps

Synthetic CDO
€1 billion
ref. portfolio
(CDS on
Investment
grade corporate
credits)



Synthetic CDOs...







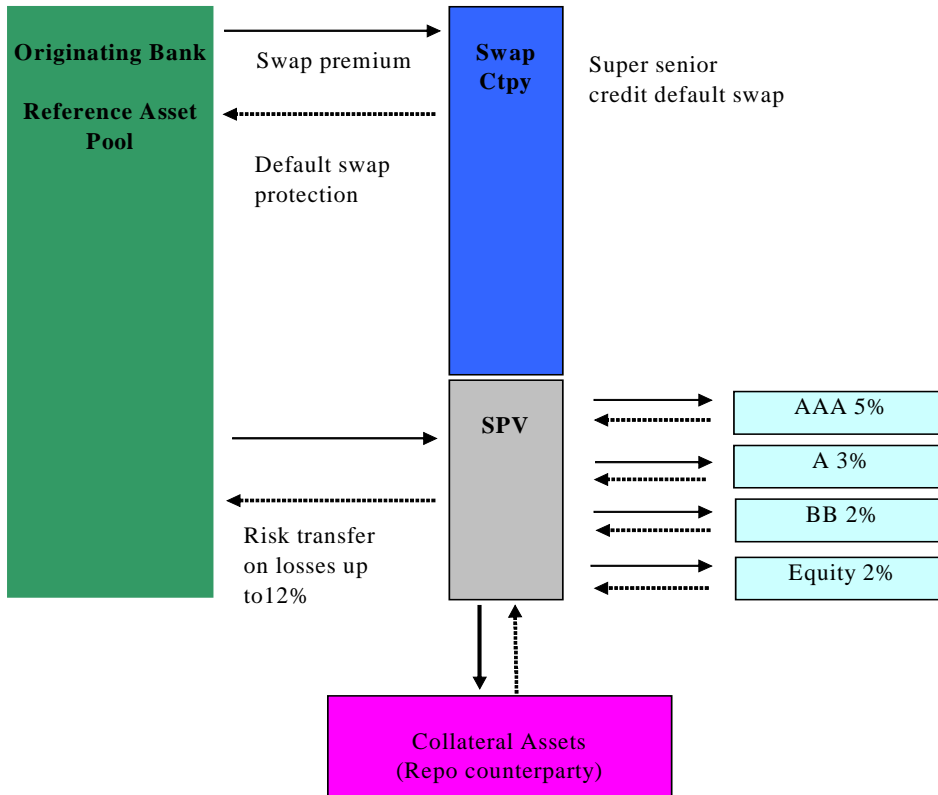
Categories of Synthetic Structures

Balance sheet **static synthetic CDOs**:

- /// Used to **manage regulatory capital**.
- /// Underlying assets: bonds, loans and credit facilities

- /// originated by the originating bank.
- /// Can be **fully or partially funded**.
- /// Maximum regulatory relief when partially funded: synthetic CDO + super senior swap with an OECD bank counterparty.
- /// **Static**: no management fees, investor can review and approve the make up of the reference portfolio.
- /// **Danger**: deterioration of credit quality of one (or more) names
- /// - cannot be removed from the portfolio.

Generalised partially funded synthetic CDO



- The majority of the credit risk is transferred by the “super senior” credit default swap, usually sold on to a monoline insurer
- The riskier element is transferred via the SPV which issues default swaps (unfunded) or credit-linked notes (funded)
- The first-loss piece is the unrated equity note.
- Each note has a different risk/return profile



Synthetic CDOs: funding gains

Since the super senior tranche is not funded there is a considerable advantage over the cash flow arbitrage CDO. For example:

///In 2002 the yield spread for AAA paper averaged 45-50 bps over Libor. The cost of the super senior swap was around 10-12 bps.

///Assuming the funded portion is invested in AAA paying L-5, it can save on the unfunded portion – compared to what it would had it issued liabilities all in funded form – around 28-35 bps (pay 45 bps compared to paying between 10 and 17 bps on the super senior).

///If 5% structure is unfunded (super senior piece), this is 0.95 of 28-35bps saving or 26-33 bps

///If manager retains equity piece, this is an improvement on return on equity, so if saving is 33 bps, improvement is $0.33/0.02$ or 16.5%



Synthetic Structures vs Cash structures

Synthetic securitisation structures have certain advantages over traditional cash flow structures:

1. Speed of implementation 4 - 8 weeks v. 3 - months.
2. Invisibility - client relationship.
3. Super senior element can be unfunded.
4. CDSs often cheaper than cash bond.
5. Lower legal fees.
6. Range of reference assets can be wider than with cash transactions.
7. Greater flexibility in creating solutions to credit risk requirements.
8. No funding element translates to cheaper protection.
9. Easier to obtain partial cover of credit risk exposure.



Synthetic Structures vs Cash structures

Cash transactions still have some advantages over synthetic transactions:

1. OECD banks do not need to act as swap counterparty to meet capital relief requirements (20% BIS risk-weighted).
2. Lower capital relief available compared to 20% risk-weighting on OECD banks.
3. Larger investor base - restrictions on use of derivatives.
4. Lower degree of counterparty exposure for the originator - in a synthetic transaction the default of a swap counterparty means cessation of premium payments or credit event protection payment and termination of the CDS.



Case study: ALCO 1

- /// This has been described as the first Asian market rated synthetic balance sheet CDO from a non-Japanese bank. The structure was originated and managed by the Development Bank of Singapore (DBS).
- /// The structure required no funding.
- /// No balance sheet impact.
- /// The total value involved was \$2.8 billion mainly Singapore corporate loans.
- /// Credit risk transferred to ALCO 1 SPV by means of CDSs.



Deal illustration: ALCO 1...

| Class | Amount | % | Rating | Interest Rate |
|--------------------------|-------------------|--------------|---------------|-----------------------------|
| Super senior swap | S\$2.45bn | 87.49 | NR | 14bps |
| Class A1 | US\$29.55m | 1.93 | AAA | 3m USD LIBOR + 50bps |
| Class A2 | S\$30.00m | 1.07 | Aaa | 3m SOR + 45bps |
| Class B1 | US\$12.15m | 0.80 | Aa2 | 3m USD LIBOR + 85bps |
| Class B2 | S\$20m | 0.71 | AA2 | 3m SOR + 80bps |
| Class C | S\$56m | 2.00 | A2 | 5.20% |
| Class D | S\$42m | 1.50% | Baa2 | 6.70% |



Deal illustration: ALCO 1...

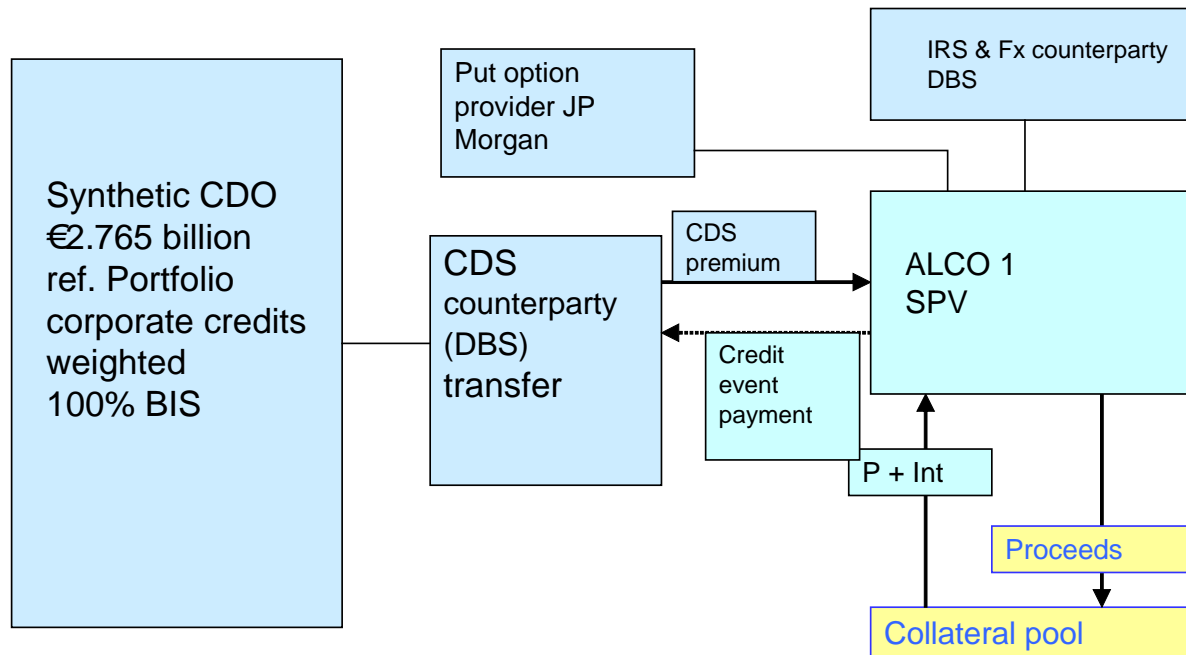
/// In addition a S\$224m note issue and S\$126m first-loss piece was retained by DBS.

/// The notes were issued in 6 classes and were collateralised by Singapore government T-bills and a reserve bank account the “GIC” account.

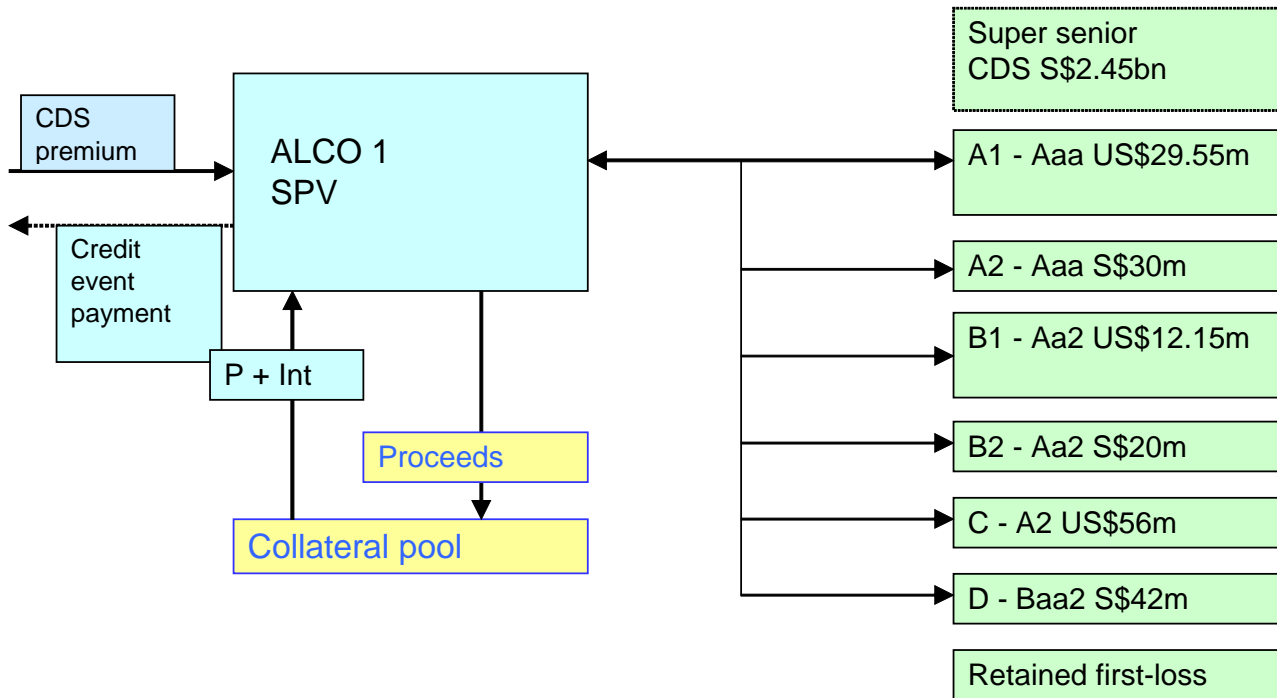
/// The structure also houses a currency swap, an interest rate swap for hedging purposes, and a put option that covers the purchase of assets by the arranger in the event of early termination.

/// The default swap portion is static but up to 10% of the portfolio can be substituted under certain conditions.

Deal illustration: ALCO 1...



Deal illustration: ALCO 1...





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