CDOs
Europe
Criteria Report

Rating Criteria for European Granular Corporate Balance-Sheet Securitisations (SME CLOs)

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- *European SME CLOs Data Template (Excel File - vsme2307.xls)*

Related Research

- *Global Rating Criteria for Corporate CDOs (April 2008)*
- *Global Criteria for Cash Flow Analysis in Corporate CDOs (April 2008)*
- *Country-Specific Treatment of Recovery Ratings - Revised (August 2006)*
- *Criteria for Structured Finance Loss Severity Ratings (February 2009)*

Contents

Criteria Highlights

The highlights for granular SME collateralised loan obligation (CLO) criteria are as follows:

- Fitch Ratings has established rating benchmarks that will form the basis for the initial rating analysis derived from market participants, central banks and other government sources. Despite significant differences in banking systems and corporate behaviour across locations, Fitch's research into national SME default data shows that - on average and over the long term – the 90+ day delinquency rates for small unrated corporates have been consistent with the 'B' rating category and the insolvency rates for small unrated corporates have been consistent with the 'BB' rating category[1].
- Fitch will begin the default probability analysis by forming a credit opinion of the originating bank's SME loan book. This process includes input from the originator review, the bank's internal credit scoring system and analysis of the historical data provided to the agency. Fitch will then compare the credit risk of the proposed SME CLO portfolio to that of the originating bank's SME loan book. The final stage of the default probability estimation is the loan level portfolio analysis. This focuses on the obligors that represent the largest risk exposures in the portfolio and the obligors that are exposed to specific risks, such as refinancing risk.
- Fitch will apply its recovery rate framework to calculate recoveries based on the type and level of collateral provided against each loan. For secured loans, the agency will use a market value decline (MVD) approach to calculate the recoveries. For unsecured loans, Fitch assumes lower recovery assumptions upon insolvency than for comparable large corporates; previously, the agency had used recovery rates consistent with large corporates.
- Fitch will perform standard scenario analysis that focuses on the largest obligors and the largest industries within a portfolio. Each new transaction should be able to withstand the standard scenario tests.
- Fitch will perform standard sensitivity analysis that will stress the default probability, recovery and correlation assumptions to measure the sensitivity of the transaction's ratings.
- Fitch has integrated the portfolio modelling of granular SME CLOs into the Portfolio Credit Model (PCM) suite. The model can be downloaded from www.fitchratings.com.

[1] The insolvency and delinquency benchmarks are based on information gathered from Germany, Spain, Italy and the UK.

SME Default Probability Estimation

Fitch updated its corporate default probability tables following the latest release of the corporate PCM in April 2008. The updated asset default probabilities are based on data since 1977 and information available from the three major rating agencies, to use the broadest set of default statistics. The Fitch international long-term credit rating scale is used as a benchmark measure of probability of default. It is intended to be equivalent across a broad range of market sectors and will be used for SME portfolios.

Default Definition

Conventionally, originators and regulators generally apply one of two default definitions[2]:

Default Definition

- Delinquency: an entity falling delinquent or overdue, typically by 90 days or more, on a loan.
- Insolvency: an entity becoming insolvent (hard default).

The probability of becoming delinquent is higher than the probability of becoming insolvent. The difference between the delinquency rate of default and the insolvency rate of default is referred to as the cure rate.

Default Probability Benchmarks

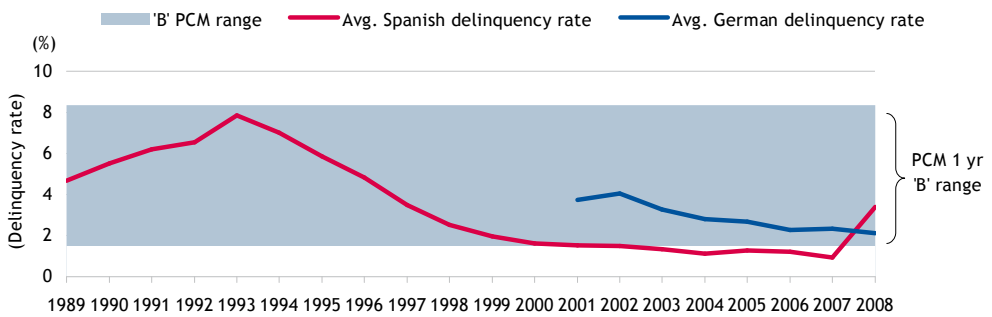
Fitch has developed long-term default probability benchmarks that will serve as the initial starting point for each transaction rating. The benchmarks have been derived from data supplied by market participants, central banks and other government sources.

Delinquency Benchmark

The dynamic delinquency data represents the number of firms that fall more than 90 days overdue on a loan in a given period as a percentage of the total number of firms in existence at the beginning of the period.

Fitch analysed delinquency data from central banks and originating banks for the period 1962 to 2009 for Spain and 2001 to 2008 for Germany. The chart below shows the PCM one-year 'B' default probability and the average 90+ day delinquency rate.

90+ Delinquency Rate



Source: Spanish and German banks

[2] The Basel II regulatory framework applies a two-fold default definition: the obligor is considered unlikely to pay its credit obligations in full and/or the obligor is past due more than 90 days on any material credit obligation. There is scope for local variation and a 180 days overdue threshold is currently used in Italy and therefore Fitch will amend the default derivation.

Fitch observed that an average delinquency rate for a typical SME portfolio has usually been consistent with a 'B' rating category benchmark.

The agency will form a credit view on the country-specific delinquency default benchmark and use this as the starting point for its analysis of the originating bank's SME loan book. The delinquency default benchmark will vary over time depending on the current point in the credit cycle and Fitch's economic outlook for different industries within that country. For instance, during times of economic stress, the agency may increase the SME delinquency default probability benchmark due to the increased risk of default. This is analogous to the negative credit migration of publicly-rated large corporates observed during times of economic stress.

Cure Rate

If a firm misses a payment and becomes delinquent on a loan, but subsequently resumes payment, it is said to have cured the delinquency and hence avoided insolvency. Therefore, the cure rate represents the proportion of firms in a portfolio that resume payments after becoming delinquent.

Fitch gathered insolvency data for the period 1985 to 2005 from central government sources in the UK, Italy and Germany; this data tracked the number of insolvencies over a given period. The agency observed that the average SME insolvency rate is consistent with the PCM 'BB' rating category. Fitch believes that a diverse SME portfolio will exhibit non-investment grade insolvency rates and that the insolvency rates already include a cure rate.

Fitch will compare the cure rate of the 90+ day delinquency and insolvency rate data for the relevant jurisdiction to the originating banks' historical cure rates. This quantitative analysis is combined with the qualitative information gathered during the originator review to establish a benchmark cure rate.

Fitch has observed that the cure rates for large SMEs are generally lower than those for small SMEs and therefore the cure rate benchmark will be reduced accordingly. For example, for a portfolio that consists of large SMEs, Fitch may reduce the cure rate benchmark base case from 40% (see Benchmark Cure Rate Table below) to 5%. Therefore, the cure rate should reflect the originating banks' historical data and the specific portfolio characteristics of the transaction.

Fitch believes that the SME cure rate is highest during a benign credit environment as delinquencies may only be temporary, for example caused by short-term liquidity issues, or the SME may seek additional borrowings to refinance the loan. However, as market conditions deteriorate, business opportunities are limited and the availability of alternative sources of refinancing reduce, thereby limiting the possibility of a delinquent loan curing. Therefore, during a benign credit environment, the 'B' 90+ day delinquency rate benchmark, after applying the benchmark cure rate, will yield similar default rates to the 'BB' insolvency rate benchmark. However, as market conditions deteriorate, it is Fitch's credit view that the cure rate will decline and those firms that have fallen delinquent will ultimately become insolvent.

Benchmark Cure Rate Table

Rating stress	AAA	AA	A	BBB	BB	B	CCC
Cure rate (%)	5	10	15	20	30	35	40

Source: Fitch

Fitch will use the delinquency definition for the default analysis of a portfolio in the PCM and will give credit to the SME cure rates when applying the recovery framework to calculate the portfolio loss.

Once the country-specific delinquency default probability benchmark has been established, the next step is the analysis of the originating bank's loan portfolio.

Originating Bank Benchmark

Before analysing the proposed securitised portfolio, Fitch analyses the originating bank's SME loan book to derive a default probability benchmark for the originating bank. The initial assumption is that the bank's loan book reflects the country-specific long-term default probability benchmark. This benchmark is then adjusted based on the qualitative and quantitative information gained from the originator review, internal risk model and the originator's historical default performance. Finally, if the internal rating system is available and can be relied upon, it is be used to distribute the SME loan book around the originating bank's default probability benchmark.

Originator Review

The originator review is aimed at understanding the originator's policies, processes and practices. The review is not a due diligence exercise. During the review, Fitch analysts meet with the originator's management and representatives from the loan origination, underwriting, risk management and servicing departments. The review includes an evaluation of the company's operations, and a review of the depth of experience of key personnel. The review normally takes one day and the process is effectively continued throughout the rating process, as more questions are raised on an ongoing basis.

Fitch will review random sample loan files. The file review includes the bank's credit committee paper and other relevant documents and working papers used or produced during the origination or management of the loan. The file review is an opportunity for the originator to demonstrate actual application of its processes. Inconsistencies between the file review and the originator's guidelines or procedures are discussed during the review process.

If Fitch concludes that the originating bank's policies, processes and practices are significantly below average, or the agency is not able to rely on the originator's historical default and recovery data, it may apply a cap on the assigned ratings or may not rate the transaction.

Originator Historical Data

Fitch will analyse the originating bank's historical default data - both dynamic and cohort - and may adjust the originating bank's default probability benchmark rating up or down, depending on the results. Before the agency uses the data provided by the originating bank, it must be satisfied that the historical data resembles the securitised portfolio. Any inconsistencies - for example, in changes to underwriting or servicing standards or by macroeconomic factors - will be considered in the analysis and adjusted for accordingly.

Where only limited originator data is provided that does not cover a period of market stress, Fitch may apply a penalty to the originator benchmark to reflect the increased uncertainty of the bank's historical performance during times of market stress.

Credit Score Mapping

Fitch considers that banks' credit scoring models can inform the day-one derivation of the default probability of SME pools and can be an important aid to surveillance. The benefits of using banks' credit scoring systems include:

1. the ability to explicitly and quantitatively take into account eligibility criteria, according to which, a securitisation portfolio may show a positive or negative obligor selection when comparing the securitisation portfolio with the bank's overall loan book;

2. the ability to identify portfolio bar belling and quantify its extent; and
3. the ability to identify negative migration during the life of the transaction and consequently anticipate future default behaviour as well as changes in performance patterns.

Fitch will analyse the ability of the originator's credit scoring system to rank order obligors. However, the agency recognises that default probabilities calculated under the Basel II Pillar 1 framework are dynamic one-year estimates of default probability that may rescale over time and are dependent on the current position in the economic cycle. In addition, as the Pillar 1 framework uses a single factor model to determine capital charges, it assumes an infinitely granular portfolio, which may be appropriate for highly diversified portfolios. Where portfolios are not highly diversified, these and other risks are addressed as part of the Pillar 2 framework[3].

Once Fitch has completed its analysis of the bank's credit scoring system, the agency may be able to use this information to distribute the originating bank's default probability benchmark.

At the end of this process, the agency will have a good overview of the bank's process and historical performance, and combines this with the internal rating system to generate a forward looking credit opinion of the SME loan book. The next stage is analysis of the specific transaction.

Transaction Benchmark Rating

The transaction benchmark ratings are estimated by comparing the originating bank's SME loan book to the proposed SME CLO portfolio. Analysis of the different risk characteristics, such as internal credit scores, industry concentration, regional concentration and obligor concentration, will be used to form an opinion on the underlying credit quality of the portfolio.

For example, if the originating bank's SME loan portfolio has a weighted-average rating of 'B-' it is possible that the transaction achieves a higher weighted-average rating of 'B+' if it only contains higher credit quality loans.

However, if a portfolio is exposed to sectors for which Fitch has a negative credit outlook, then the agency would lower the transaction weighted-average rating. The magnitude of the adjustment will be transaction-specific, but theoretically there is no lower limit for the transaction rating. That said, if Fitch had serious concerns regarding SME loan concentrations and potential default volatility in the portfolio, it may apply a cap on the assigned ratings or may not rate the transaction.

The transaction benchmark rating should now represent Fitch's high-level credit view of the portfolio, based on its regional and industry characteristics. The next stage in the process is to perform the SME loan portfolio analysis.

Portfolio Analysis

The portfolio analysis is performed in two parts: firstly, general adjustments are made to each loan in the portfolio, based on its specific loan characteristics; secondly, additional analysis is performed on the largest risk exposures in the portfolio.

General Adjustments

Fitch will examine each loan in the portfolio to identify individual risk characteristics and adjust the loan default probability accordingly. Below are some examples of the type of loan features for which the agency may adjust the default probability:

[3] Basel II International Convergence of Capital Measurement and Capital Standards

1. Bullet loans – Fitch may notch the ratings of the bullet loans to reflect the increased refinancing risk.
2. Aggressive origination – Fitch may notch the ratings of loans originated by the bank during periods of aggressive expansion.
3. High industry concentrations - For portfolios that have high industry concentration in similar sectors, Fitch may apply a sector concentration correlation penalty.

Largest Risk Exposures

Pools with large obligor exposures and concentrations carry the highest risk that the portfolio's performance may be adversely affected by a relatively small number of loans. The portfolio's performance may also differ from the observed long-term average benchmark rating default behaviour. Fitch reflects this increased credit risk by applying traditional corporate (obligor-by-obligor) credit analysis to risk exposures exceeding 2% of the initial portfolio notional[4].

Corporate Credit Analysis

For these largest risk exposures, the Fitch corporate finance group will provide an opinion on the relative ability of an SME to meet its financial commitments. Therefore, the rating addresses the likelihood of an SME missing a payment or becoming delinquent on an obligation, rather than ultimate insolvency of the firm. The output of the corporate finance group analysis is a credit view that expresses the credit risk in relative rank order to other corporates, including large corporates. The corporate credit analysis will reflect the risk factors often associated with SMEs, including:

1. high business risk associated with the size of the firm, for example, product substitution risk, customer concentration risk or business cyclicality;
2. lack of financial flexibility, both in terms of limited access to alternative sources of funding and often a limited ability to sell assets; and
3. low information levels; often there is only limited time series data relating to these entities, reducing the financial ratios that can be computed.

Note that if Fitch is unable to obtain sufficient information on these largest obligors to conduct sufficient credit analysis, then the agency will treat the loans as defaulted for the PCM analysis.

Recovery Rates

Recovery rates are influenced by the jurisdiction where the loan was originated and the legal framework that governs the collection or workout process, as some jurisdictions are more creditor friendly than others. As a result, recovery rate assumptions vary across European jurisdictions with workout timelines ranging from two years in Germany to seven years in Italy. Other recovery rate considerations include the issuer's workout procedures.

A creditor-friendly legal regime that recognises and supports the priority of claims on bankruptcy will generally have higher recovery rates than a regime that is borrower friendly. Fitch has examined a number of different jurisdictions and categorised them into four broad groups: Group A (which includes Germany) is the most creditor-friendly and the most reliable of enforcement regimes. It is expected to have the highest average recovery rates; Groups B (which contains Spain and Italy), C and D are expected to have decreasing levels of recovery rates as these jurisdictions become increasingly debtor friendly (see the report, "*Country-Specific Treatment of Recovery Ratings – Revised*", dated 21 August 2006 for more details). Fitch has produced recovery rate tables for Groups A and B (see *Appendix 1*) for

[4] For revolving portfolios or managed transactions, Fitch may perform additional credit analysis of the portfolio as part of its surveillance process

non-property secured loans. For unsecured loans, the agency assumes the same recovery assumptions for all jurisdictions.

Fitch's recovery rate analysis applies an MVD approach for secured loans and a standard recovery rate table for unsecured loans that varies depending on rating stress. The agency applies MVD assumptions from its RMBS and CMBS groups to stress the value of property collateral and has derived a standard set of non-property MVDs for other collateral to calculate the recovery rates.

In some jurisdictions, property collateral as well as other loan securities are not directly linked to a securitised loan. Rather, collateral could be available as security for more than one loan contract. For assessing such cross-collateralisations, Fitch would seek information on the bank's total exposure to such obligors together with information on the total collateral available to determine recovery assumptions in accordance with its MVD approach. During the originator review, the agency would discuss the allocation of collateral in case of cross-collateralisation as well as cross-default rules.

Where an originator can provide robust recovery data that covers a full economic cycle, Fitch will incorporate this information in its credit analysis and may adjust the assumed recovery rates.

Recovery Framework

As stated, Fitch will analyse the SME CLO transactions from a delinquency definition of default. Upon default, a number of loans will cure, or return to performing repayments, and therefore this cure rate is included in the final recovery assumptions.

Unsecured Recovery Assumptions

For unsecured loans or loans where the only form of security is a personal guarantee, Fitch will apply the following recovery rates and cure rates to obtain the cured recovery rates:

Unsecured Recovery Table

Rating stress (%)	AAA	AA	A	BBB	BB	B	CCC
Unsecured recovery	5	10	15	20	25	30	30
Cure rate	5	10	15	20	30	35	40
Cured recovery[a]	10	20	30	35	45	55	60

[a] Rounded to the nearest 5%
Source: Fitch

The cured recovery rates are calculated using the following formula:

Cured Recovery = Cure Rate*100% + (1-Cure Rate)*Unsecured Recovery

For example, in an 'A' stress it is assumed that 15% of firms that are 90+ days delinquent will cure or return to performing. This represents a 100% recovery on these loans. On the remaining 85% of the portfolio that has not cured, the 15% 'A' unsecured recovery rate is applied. Therefore, the cured recovery is 15%*100% + (1-15%)*15% = 28%; note that the table is rounded to the nearest 5%.

Fitch may apply the unsecured recovery rates to loans where the amount of information provided is insufficient to perform a secured recovery calculation.

Property Secured Loan Recovery Assumptions

For loans that are collateralised by completed commercial or residential property, Fitch will use an MVD methodology to calculate the recovery levels after adjusting for the cure rate. This approach will identify the loan-to-value ratio (LTV) and apply property MVDs (as defined and updated by the Fitch RMBS and CMBS groups) that increase in magnitude as the rating stress increases in order to derive loan-

specific recovery rates. Note that the MVD approach can only be applied if detailed information for the underlying properties is provided for the initial rating and can also be supplied for the surveillance of the transaction. Where insufficient information is provided, Fitch may apply the non-property recovery approach.

If the loan is not recovered in full from the security, any residual claim outstanding is assumed to be an unsecured creditor of the SME. Fitch will apply the unsecured recovery rates to the residual claim and include this amount in the final recovery estimation.

Non-Property Secured Loan Recovery

For loans that are secured by collateral other than property and personal guarantees, eg machinery, Fitch will apply the following MVD to the collateral to calculate the recovery rates after adjusting for the cure rates:

Group A Non-Property MVD Table

Rating stress	AAA	AA	A	BBB	BB	B	CCC
MVD - non-property (%)	70	65	60	55	50	45	40

Source: Fitch

The tables below provide examples of non-property recovery rates for varying levels of collateral before and after applying the benchmark cure rate.

Example of Group A Recovery Rates - Before Cure Rates

Security value/loan outstanding (%)	AAA	AA	A	BBB	BB	B	CCC
50% secured (LTV 200%)	19	26	32	38	44	49	51
100% secured (LTV 100%)	34	42	49	56	63	69	72
125% secured (LTV 80%)	41	49	58	65	72	78	83

Source: Fitch

Example of Group A Recovery Rates - After Cure Rates

Security value/loan outstanding (%)	AAA	AA	A	BBB	BB	B	CCC
50% secured (LTV 200%)	23	33	42	50	61	67	71
100% secured (LTV 100%)	37	47	57	65	74	80	83
125% secured (LTV 80%)	44	54	64	72	80	86	90

Source: Fitch

For transactions that only provide collateral information at the portfolio or aggregate level (as opposed to loan-by-loan information) Fitch will apply a 30% haircut to the standard assumptions. This is done to address the risk that lower credit quality loans may have significantly less collateral than better credits in the same portfolio.

Correlation Framework

The historical default data shows that SME portfolios have less volatile default rates compared to portfolios of large corporates. Fitch calculated the mean and peak default rates for large corporates and SMEs since 1989.

Default Volatility

One-year default rate	Mean (%)	Peak (%)	Peak/mean
Global large corporate 'B'	5.6	13.8	2.5
European SME[a]	3.8	7.8	2.1

[a] Referring to the 90+ day delinquency definition of default
Source: Large corporate data: Fitch. European SME data: Bank of Spain, Spanish and German originating banks

The above table shows the mean and peak default rate for 'B' large corporate assets and the average SME delinquency rate. The ratio between the peak and mean default rate is a simple measure of default volatility: the higher the result, the larger the default volatility between periods. The table shows that SMEs have lower mean default rates than global large corporates rated 'B' and SMEs exhibit lower peak default rates, which supports the notion of a lower correlation structure.

The PCM default correlation assumptions are presented in the table below:

Correlation Comparison

(%)	Base level	Same country	Same sector	Same industry	Total
SME	1	1	0	15	17
Large corporate	1	4	2	20	27

Source: Fitch

Therefore, two SMEs from the same country, sector and industry will have a correlation of 17%, whereas two large corporates from the same country, sector and industry will have a correlation of 27%. Note that for portfolios that have high industry concentration in similar sectors, Fitch may apply a sector concentration correlation penalty.

Correlation Example

The SME PCM output is defined in terms of the rating default rate (RDR). The RDR is the model output that indicates the level of protection Fitch would expect to see against defaults in a portfolio. The RDR varies for each rating stress and can be interpreted as the level of portfolio defaults that must be protected against to achieve a particular rating. Therefore, the 'A' RDR represents the level of defaults that a note is able to withstand to achieve a 'A' rating.

Impact of Correlation on Portfolio RDR Levels

(%)	Concentrated (high correlation)	Highly diverse (low correlation)
RDR		
AAA	52	40
AA	48	38
A	43	35
BBB	39	32
BB	31	28
B	27	25

Source: Fitch

The above table shows the impact on the RDR of two hypothetical five-year SME portfolios, each with 2,000 'B' rated assets from the same country but with different industry concentrations.

The first portfolio is concentrated among four industries and has a portfolio correlation of 9% whereas the second portfolio is highly diverse, distributed among 30 industries and has a portfolio correlation of 4%. The portfolio with the higher industry concentration has the higher RDR at each rating category to protect the note from the increased default volatility.

Managed and Replenishing Transactions

For transactions where the portfolio is managed or replenishing, Fitch will initially analyse the transaction to a migrated worst-case portfolio as described within the CLO transaction documentation. The migrated worst-case portfolio will take the current portfolio and assume that, over time, loans are replaced with the riskiest loans that the documentation will allow. Therefore, the worst-case portfolio will depend on the level of flexibility ascribed to the manager and the level of covenants within the transaction documents, such as to maintain a portfolio weighted-average credit quality, weighted-average life or concentration limits.

Fitch will apply the initial rating criteria to managed and replenishing transactions each time a new loan is added. For example, if a new loan were added two years after the closing of the transaction that represents 2.5% of the current portfolio balance, the agency would apply the corporate credit analysis (see page 6).

Standard Scenario Analysis

The previous sections describe Fitch's standard assumptions for SME default rates and recovery rates. These are based on long-term historical average observations derived from large sample populations. The performance of individual obligors, industries or regions could perform significantly differently compared to these historical averages. Therefore, Fitch will run a series of rating scenarios that must be passed before the initial rating is assigned. These are designed to stress test the transaction and identify outlying portfolio characteristics.

Large Exposure Stress

Fitch will test each transaction's ability to withstand a default probability, recovery and correlation stress for the largest risk exposures in the portfolio.

1. 50bps Obligor Stress

For obligors that represent greater than 0.5% of the portfolio balance the following stress is applied:

- **Default Probability:** Fitch will apply one of the following adjustments to the default probability:
  1. If available, Fitch will use the results from the corporate credit analysis.
  2. If available and reliable, Fitch will adjust the internal credit score by one notch. In addition, the agency will normally apply a 'B+' ratings cap to reflect its view that the majority of SMEs are within the 'B' rating category.
  3. Otherwise, Fitch will assume a 'CCC' rating.

In addition, the agency may lower the 0.5% threshold depending on the composition of the portfolio; for example, if there are obligors representing 0.49% of the portfolio balance.

2. Top Five Obligor Stress

For the top five obligors in the portfolio, the following stress is then applied:

- **Default Probability:** Fitch will apply one of the following adjustments to the default probability:
  1. If available, Fitch will use the results from the corporate credit analysis.
  2. If available and reliable, Fitch will adjust the internal credit score by two notches.
  3. Otherwise Fitch will assume a 'CCC' rating.
- **Recovery Rates**: Fitch will apply a 25% haircut to the standard recovery rates.
- **Correlation:** Fitch will stress the correlation assumption by increasing it by 50% (eg increasing correlation from 17% to 67%).

Note that for granular portfolios, the large exposure stress will have negligible impact on the PCM results. However, as the portfolio becomes increasingly concentrated or exposed to a few large assets, the impact of this stress will increase.

Obligor Exposure Coverage Test

The obligor coverage test is used to measure the sensitivity of the rated notes to the portfolio obligation concentration levels, especially in the later stages of the transaction's life. Note that generally Fitch would not expect any single obligor

exposure to exceed 4% of the portfolio balance over the scheduled amortisation profile of the transaction.

Obligor Coverage Test - 1

The table below shows the number of obligors that each rating category must be protected against, both before and after recovery rates are applied:

Obligor Coverage Test

	AAA	AA	A	BBB	BB	B
Number of obligors[a]	20	17	14	11	8	5

[a] Assuming a 'B' portfolio credit quality
Source: Fitch

For example, assume a transaction has a 'AAA' RDR of 30% and a recovery of 10%, which gives a 'AAA' rating loss rate (RLR) of 27%. To pass the 'AAA' obligor coverage test:

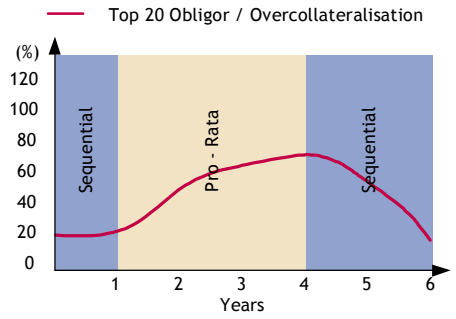
1. the top 20 assets as a percentage of the portfolio balance **before** recovery must be less than the transaction RDR; and
2. the top 20 assets as a percentage of the portfolio balance **after** recovery must be less than the transaction RLR.

This test is more likely to fail for portfolios that have a number of large assets and where the recovery on these large assets is low.

Obligor Coverage Test - 2

The obligor concentration risk is significant for transactions with pro-rata liability amortisation structures, ie those where the junior notes amortise before the senior notes have paid in full, and in replenishing transactions where the obligor exposures change over time.

Hypothetical Example: Top 20 Obligor Exposures Divided by Overcollateralisation



Source: Fitch

The transaction's amortisation profile is analysed to find the highest level of obligor concentration and the lowest level of overcollateralisation. The chart shows a hypothetical example where the top 20 obligor exposures are divided by the level of overcollateralisation for a rated note (shown in red on the chart). In the example, the liability structure is sequential during the first year but during years two to four the pro-rata structure increases the relative size of the top obligor exposures compared to the rated notes' overcollateralisation. In the example, the PCM would be used to analyse the portfolio from year four to maturity to examine the impact of the increased obligor concentration risk.

Largest Industry Stress

For portfolios that contain large exposures to particular industries or sectors, for example a portfolio with 25% exposure to real estate, Fitch will increase the portfolio or sector correlation to achieve a default and loss coverage that it believes is commensurate with its credit opinion for that particular concentrated portfolio. This credit opinion will vary depending on the level of concentration and the industry that it is concentrated in.

Standard Sensitivity Analysis

Fitch will run a range of sensitivity analyses on key input parameters to examine the rating stability of each transaction. The objective of this stress testing is not to eliminate rating migration through unrealistically conservative assumptions but rather to ensure that a small change in input parameters does not result in a multi-category downgrade. The sensitivity analysis results will be published in the agency's New Issue report.

Fitch will review the impact on the rating for the following sensitivities:

- rating sensitivity to defaults: one-notch adjustment to each obligor;
- rating sensitivity to the largest industry: two-notch adjustment to each obligor in the largest industry;
- default of largest obligors: defaulting all obligors that make up more than 1% of the pool;
- rating sensitivity to recovery rates: 0.75x and 0.5x reduction in loan level recovery rates; and
- rating sensitivity to correlation: 2x correlation structure.

Fitch will also review combined stresses. A rating committee will review the stability of the proposed rating under such stresses and determine whether the results are commensurate with the rating being proposed for the structure.

Loss Severity Ratings

Fitch launched its Loss Severity (LS) Rating scale for structured finance transactions in February 2009. The LS Rating scale consists of five rating categories that start from LS1, representing the lowest risk of loss severity given default, to LS5, representing the highest risk of loss severity given default.

The LS Rating is determined by the tranche loss multiple (TLM), which is calculated by dividing the size of the tranche by the base case loss expectation for the portfolio expressed as the cumulative loss over the life of the transaction.

For more information on LS Ratings, please refer to "*Criteria for Structured Finance Loss Severity Ratings*", dated 17 February 2009.

Loss Severity Rating Scale

Rating	Category Definition
LS1	Tranche loss multiple greater than 10.1
LS2	Tranche loss multiple in the range of 4.1 to 10
LS3	Tranche loss multiple in the range of 1.1 to 4.
LS4	Tranche loss multiple in the range of 0.51 to 1
LS5	Tranche loss multiple of less than 0.5x.

Source: Fitch

Surveillance

Fitch surveils its outstanding credit ratings on an ongoing basis, based on observed performance to date and expectation of future performance. The agency will review several performance indicators for SME transactions.

Surveillance Data

There is only limited public transparency about small- and medium-sized unlisted companies. Banks tend to evaluate granular corporate portfolios - which for many banks is synonymous with portfolios of SME loans - using internal credit opinion methods such as credit scoring. One of the main challenges facing banking institutions in this area is to compile, process, and continuously monitor the necessary information about small, unrated borrowers.

For its surveillance of SME transactions, Fitch in most cases relies on the originator to provide an updated SME data template on a quarterly basis. If, for any reason (except for purely operational and temporary reasons), such information is not forthcoming or it is limited in detail, the agency may put the transaction on Rating Watch Negative or decide not to maintain its ratings on the transaction. For this reason, before it assigns initial ratings, Fitch will seek to agree the type, content, and frequency of information to be provided by the originator on an ongoing basis.

Where mappings are used, Fitch requests to receive the originator's updated SME obligor internal ratings and corresponding default rate expectations on a regular basis. These are periodically reviewed to monitor credit quality migration and Fitch will use such credit migration information in its surveillance process.

Treatment of Delinquent Loans

Over time, a proportion of the loans in the portfolio will become delinquent. Under the surveillance methodology, Fitch will increase the default probability of each delinquent loan by assigning the following default probabilities when performing the PCM analysis.

Delinquency Default Rates

Delinquent loans (months)	PCM rating	Default probability multiplier
1-2	'B-'	2
2-3	'CCC'	1
3-4	'CC'	1
4-6	'C'	1
>6	'D'	1

Source: Fitch

For example, if a loan is 35 days' delinquent, then the obligor default probability is adjusted to a 'B-' rating and a default probability multiplier is applied in PCM. As the delinquency period extends, the probability of default increases and so the assigned rating lowers until, once the delinquency is greater than six months, the loan is assumed to have defaulted.

Appendix 1: Unsecured and Non-Property Secured Loan Recovery Rates

Unsecured Recovery Rates

Unsecured Recovery Table

Rating stress (%)	AAA	AA	A	BBB	BB	B	CCC
Unsecured recovery	5	10	15	20	25	30	30
Cure rate	5	10	15	20	30	35	40
Cured recovery[a]	10	20	30	35	45	55	60

[a] Rounded to the nearest 5%
Source: Fitch

Group A Non-Property Recovery Rates: Includes Germany

Non-Property Market Value Declines

Rating stress	AAA	AA	A	BBB	BB	B	CCC
MVD - non-property (%)	70	65	60	55	50	45	40

Source: Fitch

The tables below provide examples of Group A recovery rates applied to varying levels of collateral.

Example of Group A Recovery Rates (Including Cure Rate)

Security value/loan outstanding (%)	AAA	AA	A	BBB	BB	B	CCC
50% secured	23	33	42	50	61	67	71
100% secured (LTV 100%)	37	47	57	65	74	80	83
125% secured (LTV 80%)	44	54	64	72	80	86	90

Source: Fitch

Group B Non-Property Recovery Rates: Includes Spain and Italy

Non-Property Market Value Declines Group B

Rating stress	AAA	AA	A	BBB	BB	B	CCC
MVD - non-property (%)	75	70	65	60	55	50	45

Source: Fitch

The tables below provide examples of Group B recovery rates applied to varying levels of collateral.

Example of Group B Recovery Rates (Including Cure Rate)

Security value/loan outstanding (%)	AAA	AA	A	BBB	BB	B	CCC
50% secured	21	31	40	49	59	66	70
100% secured (LTV 100%)	32	43	53	62	71	77	81
125% secured (LTV 80%)	38	49	59	68	77	83	87

Source: Fitch

Appendix 2: Worked Example

Below is a hypothetical worked example that describes the SME CLO process for assessing the portfolio loss rate. Note that cash-flow analysis has not been included in this example. The process will start with the transaction screening process.

Transaction Screening Process

The initial starting point for the rating of a new transaction is the transaction screening meeting. In this meeting, the basic structure and the key risks are discussed and high-level feedback will be provided. The arranger or originator should provide information on the type and amount of historical default data, the counterparties proposed to be involved with the transaction, the purpose of the securitisation, details of the assets being securitised and the expected timeline for completion (see *Appendix 3: Originator Questionnaire*).

Default Probability Benchmark

In this example, the country-specific historical default statistics show that the long-term default probability benchmark is consistent with the 'B' rating.

Originating Bank Benchmark

Originator Review

In this example, it is assumed that the originator provides Fitch with sufficient comfort during the on-site review that all policies and practices are maintained and documented to a high standard. Therefore, no penalties are applied to the default probability or recovery assumptions.

Originator Historical Data

Fitch will examine the originator's historical SME loan performance. In this example, the originating bank's 90+ day delinquency rate showed average performance when compared to the country-specific historical data.

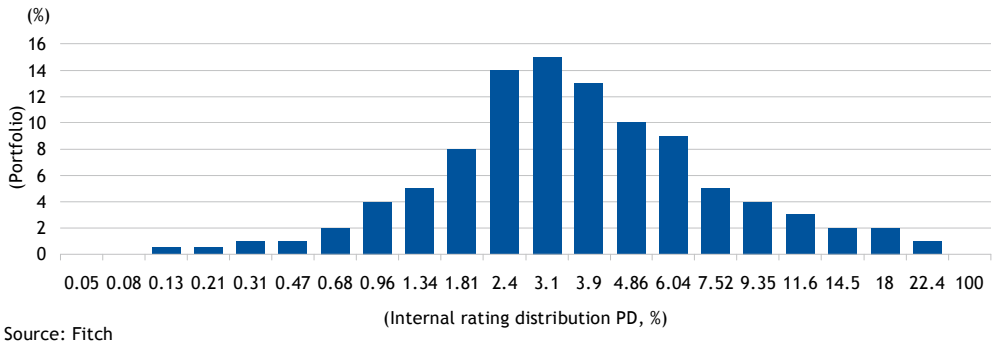
In this example, based on the information gained during the originator review and the originating bank's historical performance it is assumed that the originating bank's benchmark is assigned a weighted-average one-year default probability of 4.58%, which is consistent with the 'B' PCM rating.

The historical cure rate information provided by the originating bank was commensurate with the cure rate benchmark and therefore shall be applied for the transaction's recovery calculations.

Credit Score Mapping

In this example, the bank's internal credit scoring model was used to distribute the ratings such that the weighted-average default probability of the originating bank remained 4.58%.

Hypothetical Example: Bank's Internal Rating Distribution



Source: Fitch

Transaction Bank Benchmark

The proposed portfolio has the following risk characteristics:

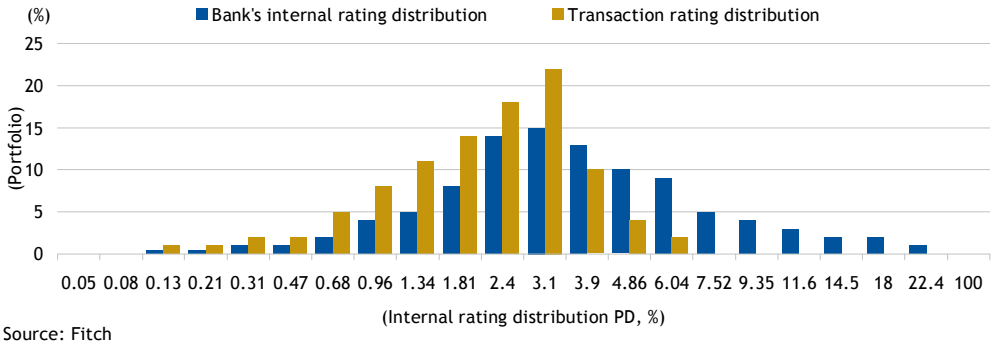
Risk Characteristics

Number of obligors	1,000
Largest obligor exposure (%)	2.4
Top 10 obligors (%)	6.5
Country	Spain
Weighted-average life (years)	5
Number of industries	8
Largest industry (%)	Real estate, 15

Source: Fitch

First, the proposed SME CLOs obligors' internal rating scores are compared to the originating bank's SME loan book. In this example, the bank decided to filter out loans with poor credit scores from the transaction portfolio, resulting in a weighted-average one-year default probability of 2.35%, which is consistent with the 'B+' rating.

Hypothetical Example: Bank's Internal Rating Distribution



Source: Fitch

Portfolio Analysis

High Industry Concentrations

In this example, the portfolio had relatively high concentration to real estate and construction. For the purpose of calculating the correlation, the rating committee decided to combine these industries.

Large Risk Exposures

In this example, there was one obligor that represented more than 2% of the portfolio balance. Specific corporate credit analysis was performed on the financial statements of the firm and a 'B-' rating was assigned.

Recovery Estimation

In this example, 50% of the portfolio is secured by property with an average LTV of 80%, 30% is secured with other collateral and 20% is secured with personal guarantees.

Property Secured Recovery

The following analysis will be applied to each loan secured by property in the portfolio.

The table below shows an example of the MVD approach applied to a loan of EUR50,000 that is collateralised by EUR60,000 of residential property based in Madrid.

Property Secured Recovery

(EUR)	AAA	AA	A	BBB	BB	B
Loan balance	50,000	50,000	50,000	50,000	50,000	50,000
Initial collateral value as at 1999	60,000	60,000	60,000	60,000	60,000	60,000
Indexation						
Index rise 30% (only 50% credit given to an indexation increase)	1.15	1.15	1.15	1.15	1.15	1.15
Indexed collateral	69,000	69,000	69,000	69,000	69,000	69,000
MVD						
Hypothetical MVD	57	51	47	42	37	32
Collateral value after MVD	29,670	33,810	36,570	40,020	43,470	46,920
Costs						
Foreclosure cost	2,967	3,381	3,657	4,002	4,347	4,692
Recovery secured from property	**26,703**	**30,429**	**32,913**	**36,018**	**39,123**	**42,228**
Residual claim						
Residual amount	23,297	19,571	17,087	13,982	10,877	7,772
Unsecured recovery rate (%)	10	20	30	35	45	55
Residual recovery	**2,330**	**3,914**	**5,126**	**4,894**	**4,895**	**4,275**
Total recovery	**29,033**	**34,343**	**38,039**	**40,912**	**44,018**	**46,503**
Total recovery (%)	**58**	**69**	**76**	**82**	**88**	**93**

Source: Fitch

In the above table, the 'A' total recovery rate is 76%. This is calculated by taking the initial collateral balance of EUR60,000 and indexing it by 50% of the property index appreciation during the period between the initial valuation and the time of analysis (note that credit is given to 50% of house price increases but 100% of house price declines).

The indexed collateral value of EUR69,000 is assumed to be the current valuation to which the 'A' MVD stress of 47% is applied. This results in an MVD collateral value of EUR36,570. Foreclosure costs are calculated as 10% of the MVD collateral value and then subtracted to give the recalculated property value of EUR32,913.

In this example, as the loan has not been recovered in full and there is a residual claim of EUR17,087, the unsecured recovery rates are applied to the residual claim balance, resulting in a final recovery of 76%.

Non-Property Secured Recovery

The table below shows an example of the recovery levels for a loan that has 10% non-property collateral for different recovery stresses.

Non-Property Secured Recovery

Security value/loan outstanding	AAA	AA	A	BBB	BB	B
Loan balance	50,000	50,000	50,000	50,000	50,000	50,000
Initial collateral	5,000	5,000	5,000	5,000	5,000	5,000
MVD						
Non-property MVD	75	70	65	60	55	50
MVD collateral value	**1,250**	**1,500**	**1,750**	**2,000**	**2,250**	**2,500**
Residual claim						
Residual amount	48,750	48,500	48,250	48,000	47,750	47,500
Unsecured recovery rate (%)	10	20	30	35	45	55
Residual recovery	**4875**	**9700**	**14475**	**16800**	**21487.5**	**26125**
Total recovery	**6,125**	**11,200**	**16,225**	**18,800**	**23,738**	**28,625**
Total recovery (%)	**12**	**22**	**32**	**38**	**47**	**57**

Source: Fitch

The MVD is applied to the initial collateral amount to give the MVD collateral value. The unsecured recovery rates are applied to the residual claim to derive the total recovery levels for each rating stress.

PCM Simulation

Based on the default probability and recovery analysis, the PCM results are:

PCM Results

(%)	Default RDR	Recovery RRR	Loss RLR	LSRs[a]
AAA	40	37	24	LS-1
AA	35	47	19	LS-2
A	31	55	14	LS-2
BBB	28	60	11	LS-2
BB	22	67	7	LS-3
B	19	74	5	LS-3

[a] LSRs are calculated on the actual tranche size and not the model output; however, they have been included for illustrative purposes
Source: Fitch

These results would be presented to committee along with the transaction cash flow analysis, stress and scenario test results. Using this information, the committee will assign ratings to the transaction.

PCM Scenario Analysis

Fitch will also measure the portfolio's sensitivity to the modelling input assumptions as defined in the *Standard Sensitivity Analysis* on page 12.

In this hypothetical example, the transaction is most sensitive to the doubling of the correlation assumptions. Based purely on the model output, the 'AAA' rated note would be downgraded to 'AA'. Note that different portfolio compositions will result in different sensitivity results.

Standard Sensitivity Analysis

(%)	One-notch downgrade	Two-notch downgrade largest industry	Default the largest obligors	75% recovery stress	50% recovery rate	Correlation x2
RDR (default)						
AAA	44	43	42	40	40	51
AA	41	40	38	36	36	46
A	37	36	34	32	32	40
BBB	33	32	31	28	28	34
BB	26	26	25	23	23	25
B	23	22	22	19	19	20
CCC	17	17	17	14	14	13
Mean	18	17	18	15	15	15
RRR (recovery)						
AAA	37	39	38	28	19	38
AA	47	49	48	36	24	48
A	55	57	56	42	28	56
BBB	60	63	62	45	30	60
BB	67	70	69	51	34	67
B	74	77	76	55	37	74
CCC	59	58	60	58	58	58
Mean	59	59	60	58	58	59
RLR (loss)						
AAA	28	26	26	28	32	32
AA	22	20	20	23	27	24
A	17	15	15	19	23	18
BBB	13	12	12	16	20	14
BB	9	8	8	11	15	8
B	6	5	5	9	12	5
CCC	7	7	7	6	6	5
Mean	7	7	7	6	6	6

Source: Fitch

Appendix 3: Originator Questionnaire

Below is an example of the types of questions that Fitch may ask in the originator questionnaire.

Type and Quality of Data

Please see the SME data template for more details on the type and format of information that Fitch would request if rating a transaction.

1. Can the originator provide historical one-year default data based on a definition of 90 days in arrears?
2. Can the originator provide historical cure rate data based on the same definition of default in item 1 above?
3. Can the originator provide historical recovery rate data and type of security on a loan-by-loan basis?
4. How many years of data can the originator provide with respect to items 1, 2, and 3?
5. Can the originator provide independent third-party data that directly relates to this type of debtor in this geography?
6. Can the originator provide historical data in volume and number terms with respect to defaults and recoveries?
7. Please provide the definition of default.

Transaction-Specific Questions

1. How will the portfolio be redeemed at the transaction's maturity? Is this transaction exposed to market value risk?
2. Can the total credit limit under a loan agreement be increased? How does the transaction account for this increased credit limit?
3. Will the originating bank continue to monitor and service the agreements after securitisation and/or fulfil multiple roles in the transaction (ie serve as servicer, account bank, calculation agent, swap counterparty, etc)? How will the credit risk of the originator/servicer be de-linked from the transaction? This is both from a legal point of view and a practical/operational point of view. In practice, can another bank take over the servicing of these loans in a timely manner?
4. Can an obligor have more than one loan agreement?
5. What happens to the loan agreements upon default of the originator?
6. Does the original collateral remain in the transaction? What if the agreement is renegotiated or renewed?
7. What is the weighted-average maturity of the assets?
8. Does the portfolio exhibit single obligor concentration? What is the largest exposure and total top 10 exposures?
9. Does the portfolio exhibit industry concentration?

Key Transaction Dates

1. Selection of final portfolio
2. Preliminary letter
3. Final letter
4. Expected closing
5. Scheduled maturity
6. Legal Final maturity