Creditreform Rating AG Rating Methodology

Trade Receivables Securitizations

v1.5

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This document (v1.5) updates an older document while preserving its basic methodological approach. Certain statements were more precisely worded. The update was carried out in July 2016.

1 Introduction

Over the past 15 years, Creditreform Rating AG ("CRA" or "the Agency"), founded in 2000, has become an established European rating agency.

In this document, CRA discloses its system of rating trade receivable securitizations in order to provide the parties involved, investors and the wider public with the opportunity of developing a deeper understanding of the mechanisms behind its ratings. This document will be regularly upgraded to reflect any changes in our methods and philosophy. The CRA rating system and Code of Conduct can be freely accessed on our web page (www.creditreform-rating.de).

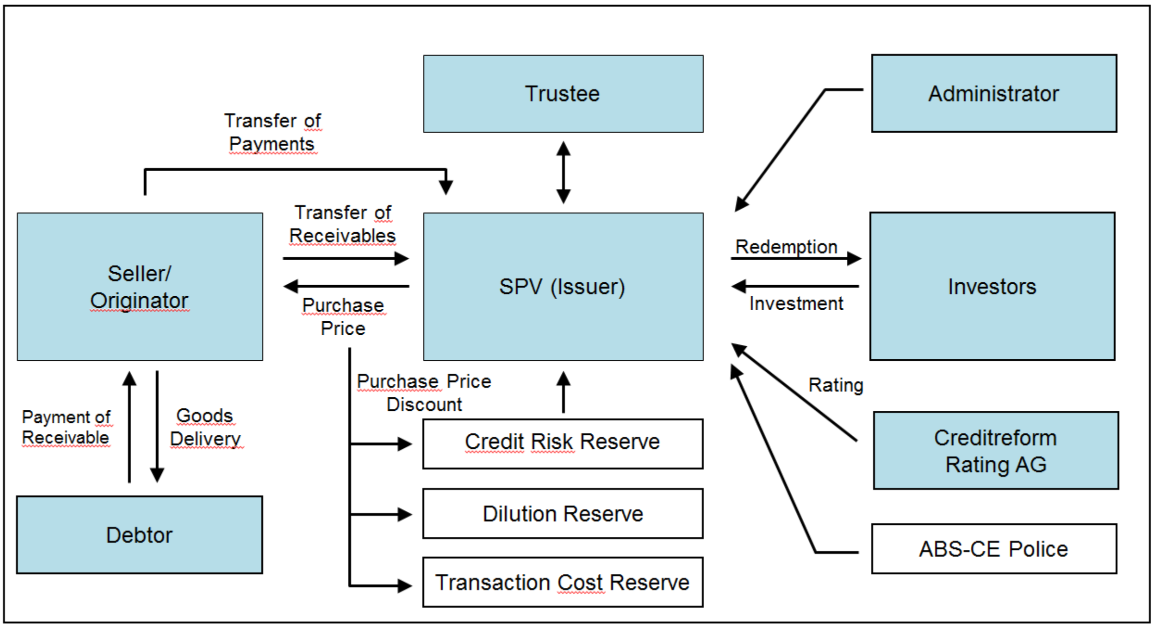
Ratings classify investments according to a certain range of selected criteria. CRA uses a self-developed master scale for its ratings which is based on the internationally standardized letter code (AAA, AA etc., together with – in this case – the "sf" index to identify a structured financing arrangement). The use of this standard serves to make the results transparent and to allow international comparisons. The central question posed by CRA ratings is always: to what extent can it be assured that the security in question will be fully serviced for the full period under review? The integrated analyses of Creditreform ratings are performed by taking into account all available and relevant information. CRA completes its assessments with a rating method that combines quantitative and qualitative approaches.

Trade receivables are securitized by packaging individual claims and transferring them to a special purpose vehicle, which then borrows money for refinancing purposes. This document describes the process of rating such securitizations of trade receivables. Since securitizations constitute a specific sub-type of structured financing, the "sf" index is attached to the rating.

Ratings for structured financing arrangements assess the risks of the security or refinancing instrument under review. They issue no recommendation of whether or not to purchase, sell or hold any such financial instruments. CRA ratings are no legal opinions.

2 The Structure of Trade Receivables Securitizations

The features of trade receivable securitizations are very much influenced by the individual nature of the underlying transactions and vary from industry to industry. Trade receivables have commonly a term of no more than 30 to 90 days. The following diagram illustrates the typical structure of a trade receivable securitization:



The receivables are usually purchased by a special purpose vehicle (SPV) that has been established as a legal entity with a narrowly defined and restricted business purpose. This SPV refinances the purchase of the receivables by borrowing funds. The SPV owns the trade receivables and all rights of their use or disposal. When acquiring the receivables, reserves are commonly established through purchase price reductions in order to collateralize the transaction ("over-collateralization"). Typical reserves for such a transaction include the credit risk reserve, the dilution reserve and the transaction cost reserve. These reserves and ABS-CE insurance agreements will be discussed in more detail in Chapter 4.

The receivables are purchased in a revolving transaction that generally covers several years. As a rule, the servicing of the receivables is still managed by the originator. Any payment that the originator receives will be held by him in trust and set off against the purchase price at the next date of purchase. The third party that acts as a trustee has mainly the responsibility of overseeing these exchanges and transactions. With reference to the insolvency laws, it is important that the original owner of the receivables has actually assigned their claims to the purchaser (the SPV). This serves to reduce the specific investment risk of a default of the originator. Commonly, this assignment is performed by a “True-Sale Agreement” under which the ownership of the receivables and the legal rights these receivables constitute are transferred to the special purpose vehicle.

3 Rating Result and Rating Process

3.1 Rating Result

It is the purpose of the rating process to deliver, in an efficient and consistent manner, risk assessments that are reliable and that correctly reflect the actual situation. The risk that must be assessed is the risk that is generated by the financial instrument which is used by the special purpose vehicle to refinance the purchase of the trade receivables. The risk assessment is performed to establish the extent to which it can be assured that the special purpose vehicle will in future be capable of meeting the payment obligations imposed on it by the financial instrument. The procedure reflects the objective of guaranteeing the quality and the integrity of the rating process, of avoiding conflicts of interest and of subjecting the decision-making processes to meaningful comparisons.

CRA rating reports are compiled by teams that comprise at least two analysts. Our clients can directly approach these teams during the entire rating process and the subsequent monitoring period. The ratings themselves are determined by the Rating Committee. CRA is using the following rating scale:

Rating category	Rating	Assessment
AAA sf	AAAsf	Highest level of credit quality, lowest investment risk
AA sf	AA+sf AAsf AA-sf	Very high level of credit quality, very low investment risk
Asf	A+sf A sf A- sf	High level of credit quality, low investment risk
BBBsf	BBB+sf BBB sf BBB-sf	Highly satisfactory level of credit quality, low to medium investment risk
BB sf	BB+ sf BB sf BB- sf	Satisfactory level of credit quality, medium investment risk
B sf	B+ sf B sf B-sf	Moderate level of credit quality, increased investment risk
C sf	CCC sf CC sf C sf	Low level of credit quality, high or very high investment risk
D sf	D sf	Insufficient level of credit quality, total loss of investment
NR	Not Rated	Rating temporarily suspended, liquidation in process (e.g.)

3.2 Data Request and Preliminary Analysis

CRA's assessments of the risks of structured financing arrangements are performed on a sound and comprehensive foundation of information. Facts about the legal and economic environments are complemented by evaluations of the conditions that are relevant for the transaction structure. This is why ratings of trade receivable securitizations and their construction are always preceded by a preliminary analysis that features evaluations of the files and documents which have been submitted by the initiator of the transaction.

For the purposes of such a preliminary analysis, we request the vendor of the trade receivables to provide us with the annual financial statements of the previous business years, information about the portfolio of receivables, detailed information about the structure of the transaction as well as the contractual backgrounds and other relevant files. An information memorandum should describe the structure of the transaction as well as planned mechanisms for controlling different types of risk and define trigger events as envisaged by the normal case scenario.

All data that have been submitted (including information about defaults, arrears in payment and dilutions) will be checked for their plausibility. Full plausibility checks – if required, together with reference data – will be performed for risk-relevant information. It is also possible to request additional documents if any such need has been revealed during the downstream stages of the rating process, for example if documents are required to illuminate the collateralization mechanisms and the dependencies of the receivables or the overall transaction.

3.3 Management Interview

The management interview – conducted with the initiator / manager of the transaction – is meant to underpin the information from the submitted documents and the preliminary analysis with context and added facts

The financial strength and economic development of the originator are of obvious importance here, as are his debt collection processes, instruments, key executives and capacities. Another important aspect of the management interview is the interpretation of historic information about write-offs and defaults in the portfolio of receivables.

3.4 Rating Committee

The analysts will then condense the results of the analyses from the rating process into a recommendation for a specific rating. They will submit this recommendation alongside their comprehensive Rating Report to the Rating Committee, the final arbiter and highest instance of the rating process. The Rating Committee alone is entitled to determine and change the actual ratings. It guarantees objective assessments of a (technically as well as formally) high quality and ensures the application of fair and even standards.

4 Rating Method

Ratings of trade receivable securitizations are based on an assessment of both qualitative and quantitative factors. CRA concentrates on four areas:

- Legal structures
- Financial structures
- Parties and counterparties
- Portfolio of receivables

It is also important for the purposes of the rating which collateralization instruments have been used and how effective they are. The relevant contracts are closely scrutinized. The assessment process furthermore includes a “due diligence“ inquiry, the exact examination of all processes and information about the originator that may affect the rating.

One special feature of CRA ratings is the availability of risk indicators on the level of the individual debtors that the Agency can use to inform its portfolio analyses and ratings, allowing it to identify and take into account individual risks. The analysis of the portfolio structure is performed through simulations and stress scenarios.

One basis for an informed risk assessment of securitization transactions is the analysis of those risk factors that are liable to trigger a default event in the transaction. Default events for the purposes of trade receivable securitizations are thought to have occurred when the capital service of the underlying financial instrument has not been fully performed. Underneath, we shall describe the risk factors of such a default event and the individually employed collateralization mechanisms in closer detail.

4.1 Analysis of the Transaction Structure

The qualitative analysis of the transaction structure is a key element of the rating, examining and assessing structural strengths and weaknesses as well as the opportunities and threats that are connected with the product. Securitization instruments such as reserves, credit insurance policies, certain contractual stipulations for trigger events and a solid financial foundation of the (receivables) vendor will generally have a positive effect. Weaknesses and threats may result from a lack of financial strength on the part of the vendor or other important parties (providers of collateral), from potential legal claims of third parties on the securitized receivables, from increased default risks or low levels of diversification / granularity in the portfolio of receivables and from country-specific or industry-specific risks. In order to assess these country-specific and industry-specific risks, experts will be consulted.

4.1.1 Eligibility Criteria

Upon entering the transaction, the parties involved define certain eligibility criteria and quality threshold values for the receivables which can therefore have a substantial impact on the risk profile of the purchase. It is also possible to impose certain conditions on the composition of the portfolio that must be continuously complied with for the entire term of the transaction. Generally, the vendor has the obligation of ensuring that any new receivables that are up for sale match these criteria. Under such a scenario, the vendor shall have to guarantee that the new receivables (which are about to be transferred to the SPV's portfolio) comply with the agreed conditions. The vendor will typically commit himself to repurchase any receivables that have violated these conditions or to compensate the purchaser accordingly. Non-compliance with these commitments (including, for example, any significant deterioration of certain parameters within the portfolio), can be a trigger event for a premature redemption of the financial instrument. From the point of view of the investor, any such quality criteria are designed to lower the investment risk. As part of its qualitative analysis, CRA assesses the extent to which these quality criteria and portfolio restrictions reduce the risks of the transaction structure.

Typical eligibility criteria of trade receivable securitizations may include the maturity of the receivables, their age, any presence or absence of objections and overdue debt, the place of jurisdiction and the legal foundations, the extent to which the claims can be accurately established and enforced, the presence or absence of credit insurance policies, restrictions on the size (amount) of individual debts or on geographic concentrations.

4.1.2 Trigger Events

Frequently, specific events will be defined that may terminate the revolving period and require the premature redemption of the financial instrument. Such “trigger events“ can decrease the requirements for other collateralization mechanisms and reduce the transaction's inherent risks. They serve to protect the investors against a deterioration in quality of the portfolio of receivables. Defined trigger events can, for example, include a deterioration of the originator's or servicer's financial strength, a violation of contractual commitments (covenants), a fall in quality of existing collateral (credit enhancement), a decrease of liquidity below defined thresholds and limitations for default and dilution ratios, arrears and average terms of payment. Based on these trigger events, worst case scenarios can be created that may inform the quantitative analyses.

4.1.3 Credit Enhancement

The transaction structure of a trade receivables securitization can feature various risk-reducing instruments (“credit enhancement“). The most common such mechanisms include the following:

- Credit risk (“fist loss”) reserves, static or dynamic
- Credit loss insurance (ABS-CE policy)
- Dilution reserve, static or dynamic
- Lockbox accounts / account pledges
- Interest rate and currency swaps
- Trigger events
- Letters of Credit / liquidity facilities
- Letters of Comfort

CRA examines which instruments have been used in the transaction under review and assesses in qualitative and quantitative analyses to what extent these instruments may reduce the investors‘ risk exposure.

4.1.4 Legal Aspects

Based on the analysis of the transaction structure, plausibility checks are performed for the securitization’s degrees of complexity and structuring in order to reveal any constructional deficiencies or risks. This assessment is based on an analysis of the underlying contracts and the term sheet. Contracts including any terms and conditions of the securitization and any legal opinions are usually drafted by specialized lawyers. These contractual documents and legal opinions are scrutinized by the CRA analysts. Inasmuch as the analysts discover constructional deficiencies and risks, they will assess the severity of these risks. The discussion of legal aspects does not constitute a legal opinion. Neither does CRA compile internal legal assessments that constitute second opinions. CRA analyses legal documents and may develop conclusions and views, but does not subject the documents in question to an examination in legal terms. Under the rating, plausibility checks are performed for regulatory risks as well as transaction-specific legal risks and consequently used to inform the analysis.

4.2 Operational Risks

As a precaution to control operating risks, the transaction must be structured in such a way that the relevant stakeholders have either no incentive or no opportunity for serious misconduct. The continuous risk monitoring operation must be enabled to ensure that these structural features remain in place.

4.2.1 The Financial Strength of the Originator

One key element of the assessment of the transaction is the evaluation of the originator's level of financial strength. For this purpose, CRA is using a shadow rating. An assessment of the party that is putting the receivables up for sale is also important for the establishment of the dilution risk, since it is common practice that dilution risks are initially assumed by the vendor of the receivables. Dilution risks only pose a risk on the level of the transaction if the vendor refuses to pay or is incapable of doing so (following an insolvency). The assessment of the vendor's financial strength is also relevant for the analysis of the commingling risk.

The assessment of the originator comprises a credit rating and also an analysis of the quality and performance capacity of his receivables management operation, as the obligation of collecting the debt is commonly assumed by the originator (in the capacity of a trustee). Important elements of the vendor's servicing package include the collection of outstanding payments and arrears management. Any assessment of the originator must therefore take into account the methods he intends to use to collect the outstanding payments and his cash management capacities (see 4.5.3 on the dilution risk) as well as an examination of the practice-relevant systems, processes, structures of decision-making and receivables management capacities.

4.2.2 Credit Insurance Providers and other Counterparty Risks

Credit ratings of the providers of collateral and other counterparties are also important. These other parties may include a credit insurance provider (ABS-CE policy) or the counterparty in a currency swap.

The rating of trade receivables securitizations must take into account additional risks that are connected with the various counterparties of the transaction such as the counterparties in derivative and swap deals or the providers of liquidity facilities and bank accounts. For this purpose, the transaction documents are scanned for the existence of any such specific risk sources, following which these risks, provided any have been revealed, are subjected to the usual rating assessments.

4.3 Commingling Risk

Commingling risks can emerge when incoming payments for the disposed receivables cannot be cleanly separated from the cash flow of the originator. Such risks are generally connected with operational disruptions of the originator, which essentially means that the receivables are at risk when the originator files for insolvency. The rated financial instrument may experience a delayed cash flow, and it cannot be ruled out that the receivables will be integrated into the insolvency assets. Since trade receivable securitizations are characterized by far higher regular payments between the vendor / servicer and the SPV than other ABS structures, the commingling risk is of a correspondingly higher relevance for a true assessment of the transaction risks.

Commingling risks are time-dependent. If an insolvency were to occur immediately after the receivables have been purchased, no or very few receivables would have been redeemed, which is why virtually no inflow of funds would have been registered. Therefore it must be noted that the longer the period that has elapsed since the purchase of the receivables, the higher the default and commingling risks will be. Cash flows from already redeemed claims can also enter the insolvency assets, if the funds have not been properly cleared or allocated. This demonstrates the need for taking into account the planned purchase and payment rhythms of the transaction as well as the foreseeable average terms of payment when assessing the commingling risks.

Commingling risks can be effectively reduced by the provision of so-called “lockbox accounts“ into which the debtors’ payments are channelled and over which the SPV – rather than the originator or servicer of the receivables – has full control. It is also possible to pledge the collection accounts of the servicer, which would give the SPV access to their funds in the event of an insolvency. Commingling risk exposure can also be diminished by defining certain purchase and payment rhythms and by ensuring that the servicer operates an effective receivables management.

4.4 Credit and Portfolio Risks

4.4.1 Analysis of the Portfolio Structure

The information that we request in the preliminary preparations for our ratings includes an appropriate amount of historical data about write-offs, arrears and dilutions inside the originator’s portfolio of receivables. As a first step of the empirical analysis, we then examine the structure of the securitization portfolio for any concentrations of debtors and establish the age structure (the distribution of arrears over time) as well as the historical default and dilution ratios.

4.4.2 Credit Risk

The credit risk or “bad debt risk“ is the risk that any of the purchased receivables may need to be written off. How severe this risk is depends on the underlying financial strength of the originator’s debtors. In our simulations of loss events, we assess the individual claims of the portfolio according to the default probabilities of the debtors. These probabilities are established according to the CRA rating method of identifying individual and specific credit risks. Following this, the default probabilities on the level of the claims are adjusted accordingly.

The distribution of losses across the portfolio under review is established by a Monte Carlo simulation which takes account of the size of the various claims, the default probabilities and the correlations between different default events. Based on the different portfolio losses in the individual rounds of simulation, it is then possible to determine the frequency distribution and the distribution function of the portfolio losses. The probability that the portfolio losses exceed a certain level can then be represented as a quantile of the frequency distribution which has been established in the simulation.

The analysis must continue to observe the securitization mechanisms in order to deliver an overall assessment of the risk that the claim may have to be written off. On the one hand, purchase price reductions frequently serve as ways of providing a loss reserve, which is designed to offset the portfolio losses that would result from a non-payment of receivables. If it has been agreed to withhold a certain percentage of the outstanding amount, this represents a static loss reserve, while dynamic loss reserves fluctuate depending on the performance of the receivables within a certain historical period and perhaps also on other features of the securitization portfolio. The quantitative simulation takes into account any such loss reserves and their respective volumes. On the other hand, the credit default risk may be additionally hedged by a credit insurance policy (ABS-CE policy). CRA will assess any such policy and analyze what risks it actually covers. Additionally, as mentioned in 4.2.2, we shall also check the financial strength of the insurance provider.

The probability of a default of the transaction is therefore established by linking the portfolio risk with a risk of failure of the credit insurance policy.

4.4.3 Dilution Risk

Trade receivables are subject to dilution risks. This means that various factors can decrease the original volume of the claim, including rebates, bonuses or objections raised by the customers of the originator. In most cases, any such reduction in value will be covered by a credit note that the originator needs to issue to the payee, which is why dilution risks mainly become relevant in the event that the vendor is no longer able to make such payments (following an insolvency). Dilution reserves generally address the resulting need of collateralizing dilution losses.

Most dilution risks are caused by future claims that are yet to emerge at the moment of purchase. Any impending reductions in value that are already known to the originator at the time of the purchase should be reflected by the purchase price. If any existing reductions in value are revealed after the purchase of the receivables, the vendor shall compensate the buyer for any resulting financial loss. The originator shall be liable for covering these reductions in value and for making up any shortfall that may result from an offsetting of counterclaims by the debtor.

Dilution risks are quantified on the basis of historical data that must be provided by the vendor in (usually) monthly intervals. Such historical data can, for example, take the form of open item lists that specify – for every given reference date – all unpaid trade receivables as well as all credit notes that have been issued in the same context. An adequate data history will need to be established to serve as a basis. Any changes in the corporate structure, business environment, business strategy etc. diminish the relevance of these historical data. This may need to be reflected by the addition of a qualitative risk premium.

Dilution risks are assessed by taking into account the financial strength of the vendor and the quality of the dilution reserve. An insolvency of the vendor in combination with an inadequate dilution reserve may provide a default scenario for the purposes of the rating. Such a scenario would be quantified by analyzing the historical dilution effects of the vendor. Judging from experience, an insolvency of the originator would increase the dilution losses. This is why the historical dilution losses that have been established through internal measurements will have a stress factor imposed on them. These stressed dilution losses are approximated by a theoretical probability distribution that allows the CRA analysts – under the assumptions of the model – to specify a probability of excessive strain on the dilution reserve. If an insolvency of the originator and such an occurrence of excessive strain on the dilution reserve (in reference to the outstanding amount of the portfolio of receivables at this moment in time) were to coincide, the transaction would most likely go into default. CRA establishes how probable it is that a default of the transaction will be caused by dilution losses by linking the probabilities of these two events.

5 Monitoring

The rating will be continuously monitored by the analysts in order to guarantee that it stays relevant and up-to-date at any time. The duration of this monitoring period can be specified by the client.

For this purpose, the analysts maintain close contact with the client and evaluate incoming information that is relevant for the development of the portfolio. This generally includes regular reports provided by the servicer and / or the SPV or the trustee about the performance of the portfolio and other parameters of the transaction. The analysts observe whether defined trigger events have occurred and whether the collateralization instruments and other key features of the transaction or of important counterparties have been changed in any way.