FitchRatings

Structured Finance
Global

New Asset SF Rating Criteria Addendum

Master Criteria Addendum

Scope

This report is an addendum to the master "Global Structured Finance Rating Criteria" and describes Fitch Ratings' generic framework for assigning and maintaining ratings on structured finance (SF) debt instruments in areas where Fitch does not already have dedicated sector-specific criteria. The ratings address these obligations' relative vulnerability to default.

This addendum covers new SF asset classes and SF asset classes that Fitch has not rated to date. When determining whether this addendum can be applied, Fitch considers its industry experience, alignment of incentives among the transaction parties, historical information, and the existence of suitable proxy data, volatility of securitized cash flow and specific legal risks.

Assets with construction- and project finance-related risks cannot be rated under this addendum. In addition, underlying assets should generate a stream of predictable cash flow and the rated debt is not expected to bear refinancing risk. See Appendix 1 for more details.

Key Rating Drivers

The importance of the rating drivers varies across the sectors and entities covered by this addendum. See Originator Linkage Determines Rating Driver Relative Importance section.

Operational Dependence Determines Originator Linkage, Achievable Rating: Transactions analyzed under these criteria vary by their degree of operational dependence on the originator, i.e. the extent to which the future cash flow is generated by the originator over the transaction's life. Historical data can be used to set performance expectations, but the risk of complete servicer disruption may render historical data unrepresentative of future performance.

Many ratings would, therefore, be linked to the originator. The link may be high, limited or absent (in the last case, the rating is considered unconstrained). This classification determines the degree of uplift from the originator rating and the maximum achievable rating. Where recourse to the originator exists, its credit quality acts as a rating floor.

'Asf' Rating Cap: Under this addendum, ratings of the senior notes will not likely exceed the 'Asf' rating category, and doing so would constitute a criteria variation (see Variations from Criteria section), except where the higher rating is driven by the rating of a single obligor. Common reasons for rating caps involve limited track records, exposure to event risks and the potential performance volatility of the underlying assets.

Asset Analysis: Fitch determines the base case asset cash flow by analyzing historical and proxy data, collateral characteristics and expert reports. The volatility of the asset cash flow may be due to: revenue risk, obligor concentration and default risk, operating costs and technology risk.

Cash Flow Analysis: Once the base case asset cash flow is determined, it is combined with the structural analysis to determine the net cash flow (base case, or unstressed). In most cases, this unstressed net cash flow will be compared against the debt service coverage ratio (DSCR) values in this report. It will then be stressed to obtain a break-even case at the point the rated notes are about to no longer be serviced.

Table of Contents

This report replaces the one of the same title published on July 1, 2021.

Related Criteria

Global Structured Finance Rating Criteria (March 2023)

Structured Finance and Covered Bonds Counterparty Rating Criteria (July 2022)

Structured Finance and Covered Bonds Counterparty Rating Criteria: Derivative Addendum (August 2022)

Structured Finance and Covered Bonds Interest Rate Stresses Rating Criteria (December 2022)

Structured Finance and Covered Bonds Country Risk Rating Criteria (February 2023)

Future Flow Securitization Rating Criteria (April 2022)

Analysts

Daniel J. Chambers
+1 212 908-0782
daniel.chambers@fitchratings.com

Hebbertt Soares
+1 312 606-2375
hebbertt.soares@fitchratings.com

Greg Kabance
+1 312 368 2052
greg.kabance@fitchratings.com

Rating Approach

Due to the generic nature of this framework and to ensure consistent analyses, Fitch will form asset-specific assumptions and rely on other existing Fitch criteria, provided any reliance is justified and disclosed within the transaction rating reports.

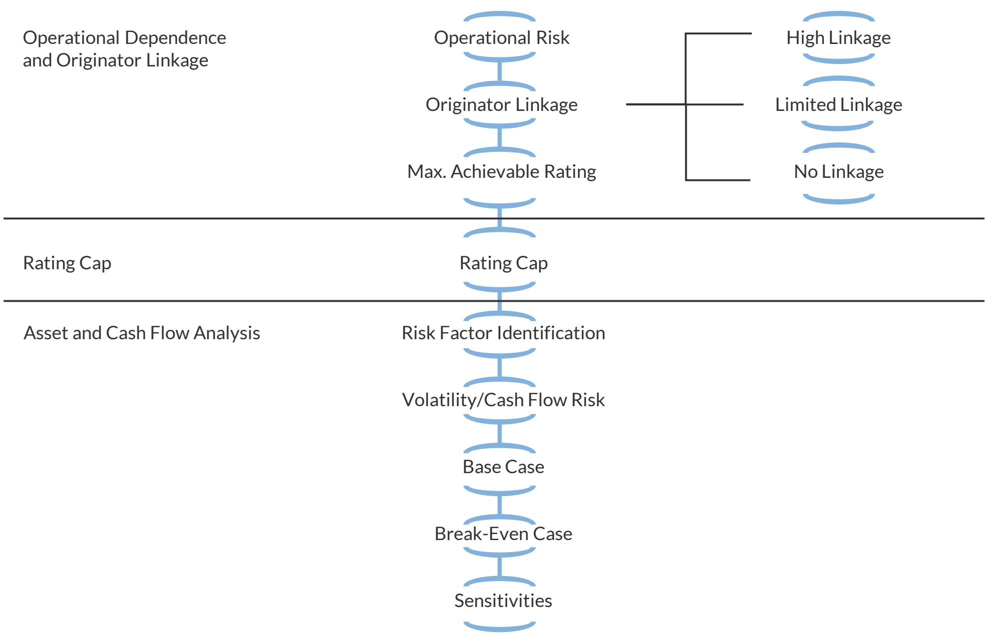
The key rating drivers outline the sequential steps the analysis follows. First, we establish the maximum rating that notes can achieve. This starts with determining the originator linkage on the basis of its operational dependence and then applies any other cap considerations. For high originator linkage transactions, the analysis continues with the assessment of the going concern, which can further temper the maximum rating achievable.

Once the maximum achievable rating is determined, our asset analysis will identify the other risk factors that drive credit risk. The combination of these risk factors results in a base case set of assumptions, which is informed by historical data and/or expert reports, and adjusted to embed our forward-looking expectations. At that point, we can classify the asset cash flow as low risk, midrange risk or high risk, according to its potential volatility.

The next step is to determine whether the notes can be repaid under their contractual terms. We do this by combining the asset analysis with the proposed liability structure, which results in a net cash flow analysis, initially through a base case analysis in an unstressed environment.

Finally, we develop the stress, or break-even, scenario on which the rating is based, to evaluate the degree to which the aggregate risk factors can be stressed before a shortfall in a time-sensitive payment of the rated debt occurs. Sufficient levels of severity in such stresses, as determined by the rating committee, will allow it to achieve the tested rating. Examples on how these steps are applied can be found in the Rating Assumption Sensitivity section.

New Asset SF Rating Approach



Source: Fitch Ratings

The weight of the steps described above, which typically depends on the originator linkage, is described in Originator Linkage Determines Rating Driver Relative Importance section.

These criteria are used where sector-specific criteria have not been developed; this would include initial ratings for a particular asset class, or asset classes with limited rating activity. Fitch generally issues sector-specific criteria when it believes the market would benefit from its published rating approach and assumptions. For asset classes initially rated under this addendum, Fitch expects to develop sector-specific criteria after it rates 5–10 transactions with a similar rating framework.

Operational Dependence and Originator Linkage

Fitch analyzes the operational dependence connected with the generation of future cash flow from the underlying assets to determine their ability to repay the securitized debt, and mitigants to the risk of the operator's discontinuity. The dependence refers to the originator having the knowledge and capability to generate, and, in some cases, service, the assets that produce the cash flow that will repay the rated debt without disruptions. See also Fitch's "Structured Finance and Covered Bonds Counterparty Rating Criteria" (Servicing Continuity Risk in SF appendix).

All SF transactions rely on the future cash flow generation of the underlying collateral, but the assets backing SF transactions under this report often are not self-liquidating or feature increased operational dependence associated with their performance. In particular, when assets need to be generated or actively managed by the originator in the course of its business, the increased dependence can manifest itself through future performance risk or increased servicing risk from the underlying originator. This is a primary consideration under these criteria. Fitch does not see these risks as purely binary, i.e. the originator's default may not mean the complete cessation of cash flow, so the agency allows certain uplifts, as described below.

Types of Originator Linkage

The degree of operational dependence is often greatly influenced by the nature of the assets, the reliance on the originator in generating the assets and availability of suitable replacements. Ratings under these criteria generally have some linkage to the originator and its credit quality (defined by the IDR in case 1 below: high originator linkage; and a monitored credit opinion in case 2: limited originator linkage). Fitch categorizes these assets on a continuum, but they generally fall into one of the three following broad categories.

1. **High Originator Linkage:** Transactions involving high linkage typically relate to assets that the originator will need to continue to generate to repay the full debt. The analysis applied to these transactions has a substantial element of corporate credit analysis to accompany the SF analysis looking at the asset isolation and creditworthiness following the originator default. These transactions can be rated up to two rating categories (i.e. six notches) above the originator IDR, depending on its going concern assessment (GCA).

   Examples of these transactions include most whole business securitizations, future flow transactions, some operating sale-and-leaseback securitizations, and certain licensing structures.

2. **Limited Originator Linkage:** As for the high linkage case, the analysis applied to these transactions combines both corporate considerations (i.e. the originator's creditworthiness) and SF considerations. Although the SF elements typically prevail, the operational dependence remains, so the rating uplift from the originator is limited. These transactions can be rated up to two, and, in certain cases, three, rating categories above the originator IDR or credit opinion (see Limited and No Originator Linkage: Cash Flow Analysis Drives Rating section).

   Transactions involving limited linkage relate to short-term revolving assets, certain moveable assets, and transactions with significant maintenance or ongoing service requirements.

3. **No Originator Linkage:** Transactions involving neither of the two types of linkage above are backed by royalty flows, some intellectual property rights or tax payments and other passive assets. The originator credit quality is less important to the generation of cash flow, or suitable third parties are available; therefore, the cash flow will be analyzed independently of the originator rating.

   The analysis applied to these transactions is a traditional SF analysis, whereby the operational and servicing continuity risk from the originator is not a paramount consideration for the ratings. Instead, the analysis of the portfolio of receivables –

including their characteristics, historical performance and cash flow modelling – drives the rating considerations.

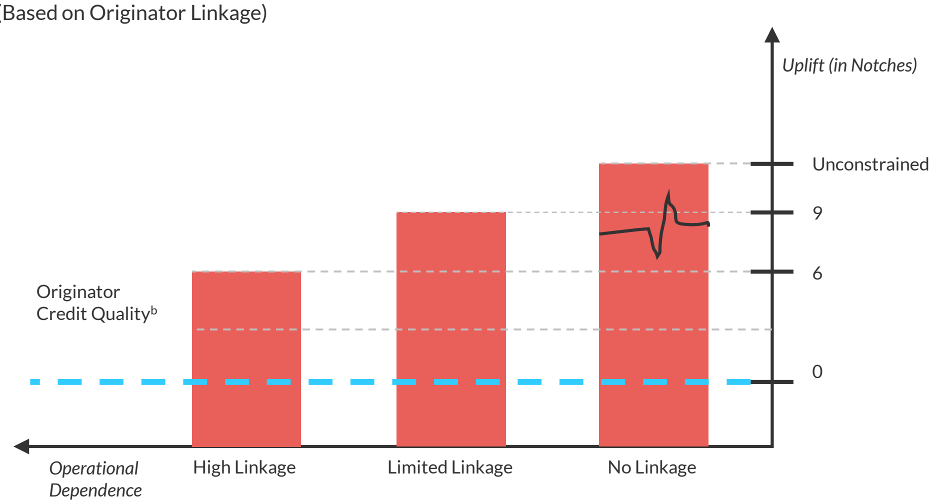
Maximum Achievable Rating

Uplifts from the originator rating described above represent maximum differentials. They can be further tempered, depending on the assessment of the other key rating drivers and by the rating limitation of 'Asf' or lower (see Rating Caps) under these criteria.

In addition, even for high originator linkage, the originator may not commit to supporting the transaction, for example through contractual loss indemnification, in which case, if the cash flow analysis does not yield at least the same rating as the originator, Fitch may rate the transaction below the originator's credit quality. The overall incentives remain paramount to our analysis, and Fitch may decline to rate if they appear to be misaligned. Where Fitch's transaction rating relies on originator support, the latter should have a credit rating from Fitch, rather than a credit opinion.

The following chart shows the spectrum of transactions under these criteria as operational risk increases.

Maximum Achievable Rating[a]
(Based on Originator Linkage)



[a]This chart does not show rating caps. [b]The originator's credit quality only constitutes a floor if the originator indemnifies the issuer for any losses.
Source: Fitch Ratings

When there are no events affecting the payments to the notes other than the performance of another party, Fitch will apply its "Single- and Multi-Name Credit-Linked Notes Rating Criteria" and link the rating to that of the relevant obligor.

For avoidance of doubt, the distinguishing feature of an SF transaction remains the legal isolation, or "de-linking", of an underlying pool of assets or stream of cash flow from the original owner (originator or asset manager) of those assets. All three linkage types listed above are based on this legal separation and, therefore, are consistent with this distinguishing feature. Fitch expects that legal analysis by the transaction counsel will be provided in the form of legal opinions and would decline to rate if this were not provided or satisfactory.

Considerations in this section refer to the role of the originator. In certain transactions, this role no longer affects the cash flow, in which case, the same considerations apply, instead, to the operator responsible for managing the assets and generating the cash flow. This is the case when the operator cannot be replaced, and, therefore, the rating dependence should be assessed.

Originator Linkage Determines Rating Driver Relative Importance

High-linkage transactions depend on the originator's ability to generate receivables measured by their GCA (see next section). In these cases, the originator rating is at the core of the credit analysis, and this analysis will focus on the maximum differential, or uplift, between the rating of the originator and the rating of the notes. The asset and cash flow analysis can constrain the rating only when the leverage is excessive or the debt service coverage is insufficient.

Despite the linkage, where explicit support from the originator is absent, the transaction rating could be lower than the originator's credit quality; in this case, the analysis will be akin to the case of no originator linkage, although still subject to the high-linkage cap.

The more a transaction is de-linked from the originator, the more important asset and cash flow analyses become to the rating of the transaction. Ratings caps, when explicitly applied, are generally more important as they would limit the rating of an instrument, even if leverage is not a constraining factor. The following table shows how the originator linkage affects the relevance of the other key rating drivers.

Typical Weighting of Key Rating Drivers

Key Rating drivers	High Originator Linkage	Limited Originator Linkage	No Originator Linkage
Operational Dependence and Originator Linkage	● (Higher)	● (Moderate)	● (Lower)
Asset Risk Analysis	● (Lower)	● (Moderate)	● (Higher)
Cash Flow Analysis	● (Lower)	● (Moderate)	● (Higher)
Rating Caps	● (Moderate)	● (Higher)	● (Higher)

● Higher, ● Moderate, ● Lower
Source: Fitch Ratings

Notwithstanding these considerations, this criteria addendum covers heterogeneous asset classes, and each key rating driver can take on high importance in certain scenarios and has minimal weighting in other scenarios. For example, if the asset analysis concludes that an offtaker is responsible for the entire rated debt service and all other risks are mitigated, the cash flow analysis may not be necessary. The relative importance depends on the specific market sector and, sometimes, the issuer. Generally, factors that are significantly weaker than others attract more weight in the analysis. Each specific Rating Action Commentary (RAC) and transaction report will discuss the factors most relevant to the individual rating.

High Originator Linkage: Going Concern Assessment

In case of high originator linkage, Fitch will assess the future performance risk of the originator, which is the ability to continue to operate the specific business line and generate the cash flow to service the debt. The GCA measures the likelihood that the business remains a going concern and the underlying cash flow continues to be generated after the company defaults on other liabilities.

The GCA ranges across four levels, from GC1 for monopoly companies to GC4 for private-sector companies for which liquidation appears a likely bankruptcy scenario. More details on the GCA can be found in Fitch's "Future Flow Securitization Rating Criteria." In the context of this criteria addendum, the GCA is only applied to transactions with a high originator linkage (therefore, with a maximum uplift of six notches), according to the following table.

Maximum Rating Uplift for High Linkage Transactions

Going Concern Assessment	Maximum Uplift over Originator IDR
GC1	6 Notches
GC2	4 Notches
GC3	2 Notches
GC4	No Uplift

Source: Fitch Ratings

The maximum notching uplift from the originator's LC IDR allowed by the GCA score will act as a cap for the transaction's rating. The final uplift depends on the asset and cash flow analysis outcome. The uplift may be tempered by the relative size of the future flow debt in relation to a company's overall liability profile. See "Future Flow Securitization Rating Criteria" for more details.

Finally, those transactions that are completely dependent on the originator's credit quality will be capped by its IDR. These are typically due to the potential for contract termination or other event risks that can be vital to the ongoing cash flow streams being securitized.

Limited and No Originator Linkage: Cash Flow Analysis Drives Rating

When the originator linkage is not classified as high, the maximum achievable rating depends on the asset and cash flow analysis outcome and the cap that Fitch applies to the sector (for example, in novel asset classes) or the specific transaction (for example, due to the originator's limited track record); see also Rating Caps section below.

In the limited originator linkage case, the originator credit quality further limits the maximum rating three rating categories above the originator's IDR. The rating cap considerations will often reduce this differential, but even when they do not, Fitch exceeds a six-notch uplift only when the operational dependence is sufficiently mitigated and we expect the cash flow generation from the assets to continue, as the servicer can be replaced and operating costs are covered (for example, maintenance and other operating costs in certain operating assets).

Rating Caps

This addendum potentially covers a broad set of sectors and transactions, and, therefore, the level of detail in the analytical considerations does not allow the achievement of the highest ratings. We, thus, cap the ratings assigned on the basis of this criteria report at 'A+sf'. In exceptional cases, we may apply a criteria variation (see Variations from Criteria section) and exceed this threshold, explaining the rationale in transaction reports.

The one exception for which no variation to exceed the cap is required is the highly rated obligor (or originator where we can use its IDR as floor due to explicit support provisions) and the rated debt constituting financial (i.e. not commercial) obligations.

Caps at lower rating levels can be applied due to data limitations, excessive concentration and market risk, asset legal risk, structural weaknesses and country risk (see Interaction with Country Risk Criteria section). See also "Global Structured Finance Rating Criteria" (Rating Caps and Limitations appendix).

Asset Analysis

The primary purpose of the asset analysis is the identification of the key risk factors, or analytical variables, that are relevant for the transaction considered.

The core of the analysis of the securitized assets is an assessment of their credit and other risks to determine the cash flow that will be generated during the life of the rated security, first in an expected scenario developed by Fitch (i.e. base case) and, subsequently, in a distressed environment (i.e. break-even case). An example on how the asset and cash flow analysis play out can be found in the Rating Assumption Sensitivity section.

Asset Analysis Base Case

To determine the Fitch base case view, we analyze historical asset performance information provided by the issuer and market analysis data (including expert reports).

Due to the generic nature of this framework and to ensure consistent analyses, Fitch will form asset-specific assumptions for each risk factor; these risk factors could include potential losses on the portfolio due to defaults, vacancy or uptime metrics, and any future expenses that may affect the net cash flow generated by the underlying assets. The level that Fitch sets for these assumptions is their base case level, which starts from the historical performance, potentially overlaid by forward-looking analytical judgement. The base case scenario consists in the set of these base case assumptions.

If the securitized assets consist of a portfolio or receivables, loans or leases, it is likely to be possible to derive credit-risk assumptions from historical data on gross or net defaults, prepayments, repossessions, dilutions and similar attributes. For example, the underlying assets could be generated from contractual payments (such as rental payments, leases and charter agreements) for the use of certain assets, and this analysis will focus on the base case cash flow generated after considering uptime, vacancies, defaults and delinquencies.

The nature of assets considered under these criteria means relevant proxy data may also be used to inform and develop a credit view related to the base case. For certain asset types, especially absent a granular portfolio of obligors such as drug royalties, analysis from market consultants or independent engineer's reports will help Fitch form its credit view. When the main source of information is, for example, an independent engineer's report based on stochastic estimation of production, we will typically consider the median production (P50) as a starting point to develop the base case cash flow from the assets.

Asset Analysis Break-Even Case

The break-even case increases the stress to each key risk factor up to the level at which the notes to be rated are on the verge of defaulting. The identification of this break-even requires the analysis of liabilities as well. The assumption-setting process is described below in this report (see Break-Even Case section).

The break-even case is the scenario used to assign the actual transaction ratings.

Asset Cash Flow Volatility

With the relevant risk factors identified and the base case levels defined, we consider the potential volatility of the cash flow from the assets based on the attributes listed in the *Cash Flow Volatility Attributes* table below.

The assessment of each attribute falls in a continuum, but we classify each as low, midrange and high risk. Once each attribute is assessed, we assign an overall level of cash flow risk. We will size the cash flow cushion needed to achieve a given rating based on this cash flow risk. As described below (see for example the different thresholds in the *Hurdle DSCR Coverage Levels* table), this cushion will be used to test the base case scenario.

Asset Cash Flow Volatility Attributes

Cash Flow Risk	Revenue Risk – Price	Revenue Risk – Volume	Concentration and Default Risk	Servicer or Operator Costs	Technology Risk/ Consumer Preferences
Low Risk	Fully contracted revenues; perfect hedges	Stable predictable volume	Highly rated offtaker or diversified demand	No exposure to increasing costs at the servicer or operator	Modern technology with long operating history; experenced originator
Midrange Risk	Contracted revenues with rollover risk; stable historical prices; partial hedges	Some potential volatility	Some diversification in offtaker base and generally high	Some exposure to changes in servicer and operating costs	Technology with limited history and or operator with limited experience
High Risk	No contracted revenues with stable historical price or rollover risk with high (e.g. cyclical) price volatility	Less predictable revenues	Concentrated obligors	Exposed to potential significant changes in servicer and operating costs	Exposure to technology with limited track record or obsolescence concerns
Relevant indicators	Share and term of contracted sales	Volatility of demand, reliability of supply	Historical or maximum contractual exposure to, e.g. single obligor, geographical area, industry	Historical charges; availability of replacement parties	Third-party information on analyzed and alternative technology

Source: Fitch Ratings

The industry of the originator, including to what extent it may be affected by secular changes, will affect the majority of these factors, so it remains an overarching consideration. Certain transactions securitize gross revenues, but more often transactions securitize the free cash flow after deducting certain cost components. Whether transactions securitize revenues or free cash flow, Fitch will consider the long-term operating costs or any maintenance capex in order for the SPV to be self-sufficient.

Fitch will consider both the historical cash flow and a projected cash flow adjusted for forecast or potential changes (for example, changes in expenses or overall cash flow due to depletion rates, contract amortization or other anticipated factors). If operating costs are extremely volatile and neither capped nor guaranteed by creditworthy parties, Fitch may not be able to develop a base case scenario and will decline to rate the transaction.

The importance of single attributes in the determination of the overall cash flow risk is asymmetrical, which means high-risk attributes will typically have more bearing than low-risk ones. Similarly, the relative importance of the individual attributes varies, depending on the industry and operating environment.

The table includes default and concentration risk together. Although they could be analyzed separately (in particular, concentration could exacerbate other risks in the table), for the types of assets more likely to be analyzed under these criteria, it is often useful to consider these risks together, as the transaction may be significantly affected by the default of large obligors. However, granular portfolios, even with large historical default rates, have lower volatility and concentration is typically not a key driver. If the obligors are rated, their quality will be taken into account, with less stress applied if the rating is higher than that of the notes. (If there is a single obligor rated at or above the notes, no stress will be applied.)

An essential feature the securitized assets must have is the capability to generate a stream of cash flows that do not completely depend on market valuation and asset sale realization proceeds. This stream can be more or less volatile (as described in the following sections), but it needs to be relatively continuous or based on specific offtake agreements.

Cash Flow Analysis

As previously mentioned, the cash flow from the assets needs to be combined with the transaction structure to assess whether the rated liabilities can be paid in accordance with the transaction documents. This section focuses on the resulting net cash flow and underpins the following analysis:

- first, to test the magnitude of a cash flow buffer under the base case scenario (i.e. the distance from a shortfall on time-sensitive payments); this indicates the rating that can be achieved within the maximum achievable rating (see Operational Dependence and Originator Linkage section above); and
- then, to test whether this indicative rating is commensurate with the stress level that the transaction can sustain.

Base Case

The base case scenario represents the net cash flow that results from long-term sustainable performance in a normal economic environment. The Fitch base case is also used as a starting point for the analysis described in the Sensitivity Analysis section.

Due to the amortizing nature of the debt rated under these criteria, we typically focus on the DSCR, which is the ratio between the cash flow available for debt service (CFADS) divided by the debt service (i.e. interest, principal and debt-related fees), period by period. Fitch may use different metrics such as LTV ratios, debt to EBITDA multiples or loan life coverage ratios to analyze the overall leverage. In these cases, Fitch may apply variations from its criteria to adjust the analytical tools to the relevant risks and structures (see Variations from Criteria section).

Fitch will compare the projected DSCR to the table below depending on the overall assessment of the cash flow volatility determined (see Asset Cash Flow Volatility). The more risk embedded in the cash flow, the more it will be volatile and, therefore, the higher the DSCR will need to be, relative to similarly rated transactions with more stable cash flow. In addition, the higher the achievable rating, the greater the resilience to downside stresses is expected, and, therefore, again, the higher the DSCRs will have to be.

Hurdle DSCR Coverage Levels

Rating Category	Low Risk Cash Flow	Medium Risk Cash Flow	High Risk Cash Flow
Asf	1.3–1.4	1.7–1.8	>2.0
BBBsf	1.2–1.3	1.5–1.7	1.8–2.0
BBsf	1.1–1.2	1.3–1.5	1.5–1.8
Bsf	1.05–1.1	1.1–1.3	1.3–1.5

These hurdle rates are provided at rating category level. To assign notch-level ratings (e.g. BB-, BB and BB+ within the BB category), Fitch considers the actual value of the base case DSCR within the ranges above, resilience to stress scenarios, other attributes that can differentiate the performance and, where available, peer transactions. The base case is generally aligned with 'CCCsf', which implies no buffer (i.e. 1.0) against an event of default under the documentation.
Source: Fitch Ratings

The longer the term of the transaction, the greater the uncertainty of future cash flow. The DSCRs in the table above are applicable to transactions that fully amortize over their useful lives, typically 10–15 years, and can be varied depending on this assumption.

Fitch may normalize the amortization levels if the amortization is uneven and, for transactions with an initial revolving period, Fitch will use the DSCR in the amortization phase. We consider both the minimum and average projected DSCR, although one-off instances where coverage may be below one are typically ignored (unless they would cause a default under the documentation). In the base case, we do not assume that liquidity reserves need to be drawn.

Break-Even Case

While the base case reflects the long-term performance expectation, Fitch also develops a break-even case where a combination of asset and liability stresses provides a break-even cash flow. The break-even stresses would reduce DSCR to just equal to 1.0x, just before a potential default on time-sensitive payments.

To determine the relative stresses to the individual risk factors identified in Asset Analysis, we consider our companywide experience on those risk factors and the attributes in the *Asset Cash Flow Volatility Attributes* table (page 7). The stresses are tailored to each transaction and typically include adverse events related to a recession; price volatility (including non-recessionary depressed commodity prices); and changes in production levels, default risk and servicer/operating expenses.

As this analysis is performed on the net cash flow, in addition to asset stresses, we will incorporate liability-side stresses on expenses and interest on the rated notes, when not hedged. This break-even net cash flow is set at the level just sufficient to meet debt service on the transaction.

In its break-even scenario, Fitch will determine if the aggregate stresses are commensurate with the tested rating. If they are not, the assigned rating would be lower, until in the rating committee's opinion, the rating and the underlying stresses are aligned.

In this determination, we may consider other rating criteria to inform quantitative metrics, provided the analogy is robust and justifiable, as well as external consultants' reports. In the case of contractual, structural or other forms of risk mitigation, whether full or partial, the stresses will be reduced, other things being equal. Peer transactions rated under this criteria addendum, or available in the market if they have experienced severe pressure, will also inform the relative stresses. Transaction reports will disclose the stresses applied in the break-even case.

Finally, where applicable, Fitch will test different timings at which the stresses above, or recessionary period, affect the cash flow. In particular, both short, severe disruptions as well as prolonged, but milder, stresses will be tested, although there will typically be only one break-even case. The importance of this time dimension also depends on the structural characteristics, in particular, the notes' amortization regime.

Should the transaction contemplate an anticipated repayment date or soft bullet maturity, we will look through it and consider repayment by the legal maturity, in line with the master criteria.

Non-Senior Debt

In case mezzanine or subordinated debt should also be rated, for each variable, Fitch will interpolate this break-even stress to the respective base case to determine intermediate stress levels, which are used to test subordinated debt tranches or solve for the best pass ratings. Fitch will distribute these intermediate stresses along the rating scale, from the break-even case at the maximum rating achievable down to the base case (typically corresponding to CCCsf).

DSCR-Based Analysis Inapplicable

Fitch can still determine a break-even case for transactions not based on DSCR metrics by applying to the base case risk factors of the considerations above, but will need a criteria variation to determine the relevant metrics to consider in the break-even case (see Variations from Criteria). This is typically relevant for granular portfolios. In this case, Fitch will use its proprietary cash flow model (see Models section below), where interest and/or principal shortfalls should not occur at the rating level to which the stresses correspond.

Sensitivity Analysis

To test the robustness of the ratings determined above, Fitch tests the sensitivity of ratings to changing assumptions (see Rating Assumption Sensitivity for examples of how ratings might move under these criteria in response to certain events). The key assumptions for a given transaction will be stressed beyond the level of the break-even case described in the previous section, again in a combined stress. Given that the stress case is designed on what a transaction can sustain, in the sensitivity runs shortfalls on the notes are likely, Fitch will look at the magnitude of these shortfalls and implied downgrade.

As part of the sensitivity analysis, Fitch may also employ single-variable break-even scenarios, whereby the agency starts from the base case and stresses one key variable at a time.

Fitch will run certain additional stresses in addition to the break-even case to determine how volatile the net cash flow and, therefore, the ratings, would be. If the ratings are very sensitive to relatively small changes in assumptions, lower ratings than those resulting from the previous steps can be assigned.

Models

The transactions analyzed under these criteria are likely to have different characteristics and the cash flow modeling choice depends on these characteristics, as described below. In either case, to apply intermediate stresses, Fitch will interpolate the key risk factors between the base and break-even case, in a linear manner, unless otherwise disclosed.

Multi-Asset Cash Flow Model

Transactions securitizing a portfolio of existing assets and where the key performance variables include losses, recoveries and prepayments are more likely to be analyzed through Fitch's proprietary Multi-Asset Cash Flow Model. The model relies on a flexible framework that can fit most granular portfolios, although it might need to be customized in certain cases.

The key asset assumptions used will be disclosed in the transaction reports. The model's key output is the best-passing ratings for the scenarios considered.

Third-Party Models

Alternatively, Fitch may employ third-party models tailored to the specifics of the transactions. Fitch uses third-party models in accordance with its criteria procedure manual and the third-party model management procedure (TPMMP) associated with this criteria report. These models' key output is the DSCR distribution based on the deterministic assumptions considered in the base and break-even case.

Other Criteria Assumptions

Structural Considerations

This criteria addendum focuses on the asset side of the issuing SPV, or more precisely, the cash flow available to the transaction at the top of the payment waterfall. The structural considerations described in the master "Global Structured Finance Rating Criteria" are fully applicable. In addition to those, the following paragraphs describe structural aspects that transactions under this addendum are more likely to feature.

As far as the debt structure is concerned, we will not rate debt with any significant refinancing risk (i.e. with debt scheduled to be outstanding on the legal maturity date) under this framework.

Subordinated Tranches

Transactions based on cash flow that need to be continuously generated and whose analysis hinges on DSCR typically have only a senior rated portion (or multiple pari passu tranches).

However, these criteria also apply to transactions with rated tranches at different levels of seniority. The cash flow analysis is the primary consideration in differentiating between tranches, as it can address to what extent subordinated notes will be repaid, but in absolute terms and in relation to the senior notes, considering diversion mechanisms, pro-rata amortization regimes and other payment waterfall characteristics.

In addition to the cash flow analysis, Fitch will consider the alignment of interests between senior and junior noteholders, most notably, in case the originator defaults and the trustee, or representative of the noteholders, is to negotiate with the defaulted company's administrators around the collateral prospects.

Note Amortization

When there are multiple tranches, notes may be amortized either sequentially or pro rata. Pro-rata structures are vulnerable to back-loaded cash flow stresses, which may increase the credit enhancement needed to support the ratings of the notes. Fitch will test the timing of its cash flow stresses, also on the basis of any triggers that lead to the transaction switching between the different phases.

Liquidity

Liquidity protections, where the cash flow from the assets is momentarily interrupted, are particularly important for high originator linkage transactions. These transactions typically rely on the continuous performance of the originator to generate the cash flow to service the debt. Therefore, it is essential that adequate liquidity coverage be in place to service the debt between the time the originator enters bankruptcy and the time when the cash flow resumes.

Given the broad application of these criteria, Fitch will determine the liquidity support for time-sensitive payments (which may include principal depending on the transaction documentation) case by case, depending on the collateral composition. For example, when single assets back the notes, the liquidity risk is high and coverage should be relatively greater. See also the description of payment interruption risk in Fitch's "Structured Finance and Covered Bonds Counterparty Rating Criteria."

Liquidity support can be provided either through cash reserves funded at closing and deposited on the issuer bank account or committed by a creditworthy counterparty. In both cases, the expectations from our "Structured Finance and Covered Bonds Counterparty Rating Criteria" apply.

Counterparty Risks

Fitch analyzes counterparty risk as part of its assessment of the transaction's credit quality. Key counterparty risks include bank accounts, providers of letters of credit and permitted investments. Fitch will examine the transaction's exposure to each of the counterparties as described in its "Structured Finance and Covered Bonds Counterparty Rating Criteria."

The credit quality of offtakers supporting the cash flow, where relevant, will be assessed according to the asset and cash flow analysis described above.

Legal Analysis

Despite the closer linkage to the originator that transactions under these criteria often have, Fitch expects that the notes would be issued by an SPV, and that SPV would be a bankruptcy-remote vehicle as described in the "Global Structured Finance Rating Criteria" (Special-Purpose Vehicles in SF Transactions appendix).

In particular, we expect that the transfer of the assets from the originator to the SPV would constitute a true sale (or equivalent), as corroborated by a legal opinion produced by the transaction counsel. In addition, depending on the ownership of the SPV (e.g. whether the SPV is an orphan or owned by an operating entity) and the conduct of the SPV's business relative to those of its parent, we would expect to receive a non-consolidation opinion. We would need to be sufficiently confident that the default of the originator does not create the risk that the issuer too would file for bankruptcy or be included in the originator's bankruptcy estate.

Interaction with Country Risk Criteria

Fitch's "Structured Finance and Covered Bonds Country Risk Rating Criteria" indicates that, in order to embed the agency's expectation of the impact of a sovereign default on asset performance, Fitch will cap the rating of the notes in certain jurisdictions and apply additional stresses to those asset assumptions that are key rating drivers. We will describe in the relevant transaction reports how these considerations affect the relevant risk factors.

Criteria Disclosure

Fitch expects to disclose the following items in its initial transaction reports and/or RACs:

- nature of the originator linkage;
- assumptions in the base case and break-even scenario;
- the model used, if any, and its significance to the rating;
- any additional loss (for example, due to counterparty risks such as set-off or commingling) that is applied to the cash flow analysis;
- any sector-specific or other Fitch criteria that have been considered in the analysis, specifying the part of the criteria that was considered and the rationale of the choice;
- variations to this criteria report (as described below); and
- any caps applied.

Fitch will use the same risk factors and analytical assumptions for assigning and maintaining ratings. Material changes will be disclosed in subsequent RACs or as part of the transaction surveillance information made available on Fitch's website.

Surveillance

This framework applies to new and existing ratings. In surveillance analysis, the relative relevance remains substantially the same, but the focus will be on the rating drivers that are more likely to change over the transaction's life — i.e. not originator linkage. Rating caps are similarly sticky, but they may be lifted or brought to higher levels if the factor causing them is no longer a risk or is mitigated in another way.

If the initial rating analysis was based on third-party reports, these may not be continuously updated. Fitch will assess the ongoing performance against the initial projections, evaluate if the initial assumptions have proved appropriate and to what extent the performance remains within the scenarios considered at closing.

Significant, sustained deviations from base case assumptions, and materially changed market conditions, will determine upgrades or downgrades in line with the analytical steps in this report and the master SF criteria. For ratings in the 'CCCsf' category and below, the main benchmark is the corresponding rating definition (e.g. at CCCsf "default is a real possibility").

If the initial rating analysis was based on third-party models, the external party may not update the model regularly. Fitch will apply the TPMMP associated with this addendum and may update the model itself, if necessary, in light of the consideration in the previous paragraph (such an update is, therefore, less likely for affirmations). If the analysis was based on a model that Fitch could not access, but of which it only had the outcome in accordance with the TPMMP, it will assess the appropriateness of the initial assumptions.

With regard to DSCR shortfalls, in our surveillance analysis, we will apply the considerations described for the break-even case, while the cushion (or implicit stress) expected for a given rating may be smaller due to more visibility on transaction performance and market conditions. For the base case analysis, we will continue to refer to the *Hurdle DSCR Coverage Levels* table, but the discrepancy should be sustained for us to change the rating.

Variations from Criteria

Fitch's criteria are designed to be used in conjunction with experienced analytical judgment exercised through a committee process. The combination of transparent criteria, analytical judgment applied transaction by transaction or issuer by issuer, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations will be disclosed in the respective RACs, including their impact on the rating where appropriate.

A variation can be approved by a ratings committee where the risk, feature, or other factor relevant to the assignment of a rating and the methodology applied to it are both included within the scope of the criteria, but where the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

Limitations

Ratings, including Rating Watches and Outlooks, assigned by Fitch are subject to the limitations specified in our Ratings Definitions available at https://www.fitchratings.com/site/definitions.

Rating Assumption Sensitivity

In its transaction reports, Fitch will describe the main factors and events that could lead to an upgrade or downgrade and, where it can be defined quantitatively, the rating movements should those events materialize.

In addition, rating criteria should describe the sensitivity of the ratings to the assumptions in the context of at least one typical sample asset pool. By definition, there is no typical asset under this addendum, so in Appendix 2, we present three worked-out cases and some sensitivity of the theoretical ratings assigned.

Data Sources

Criteria Development

This criteria report does not focus on a specific asset class but, instead, covers a range of unique or novel transactions. As a result, the information obtained during a specific transaction's rating process will generally have more weight in the methodological framework than the information used to derive these criteria.

With regard to the latter, we have benefited from Fitch's expertise in rating SF transactions in a wide variety of sectors and regions, and reviewed a number of existing criteria that could offer a comparable framework to the proposals we expect to rate under this report. These mostly include other SF methodologies, such as the "Future Flow Securitization Rating Criteria," as well as approaches used in other groups, such as Infrastructure and Corporates. We focused on the comparison of DSCR hurdles to avoid inconsistencies in rating similar underlying risks under different criteria reports.

Criteria Application

The following information is typically received and considered by Fitch in its rating analysis under these criteria:

- historical information on the performance of the asset, provided by the originator;
- proxy data from comparable markets or sectors, where available;
- reports from independent engineers and market consultants, where customary for the asset class and/or technical expertise is material to the rating;

- legal opinions supporting the enforceability of the transaction documents and the valid transfer of the assets;
- information on guarantees and insurance policies, where applicable; and
- originator financial statements and financial performance information.

The data focus on the derivation of the base and break-even case and, therefore, on the individual risk factors forming the securitized cash flow. Data on historical defaults, cures and recoveries, prepayments and termination are usually essential. Depending on the asset class, an operating asset's availability, performance and expenses may also be necessary. The observation horizon depends on the asset characteristics (namely the asset tenor) and ideally include a period of economic stress.

When available, Fitch also uses expert reports and certain assumptions (typically in the base case) can be directly derived from them. Market reports and other sources of background information will also be considered.

When Fitch uses certain assumptions from other sector criteria (to the extent possible and considering the relevance of such assumption in the new context), the data expectations from those sector criteria may also apply. Finally, Fitch may receive and use third-party models.

Appendix 1: Criteria Applicability Considerations and Limitations

The types of transactions covered by this report are varied. Examples include many kinds of whole business securitization, certain operating or intellectual property sale-and-leasebacks, or transactions that have lease rollover risk and involve significant re-marketing support (we classify these as high originator linkage). Other transactions involve ongoing maintenance support or are reliant on a minimum level of service provided by the sponsor, such as certain data centers (these cases have a limited originator linkage). Finally, transactions that can be fully detached from the originator's credit quality relate to more passive assets including certain royalty flows, some intellectual property rights and granular portfolios of existing receivables.

Therefore, these rating criteria contemplate a step-by-step analysis of the debt issued by SPVs that is suitable for a number of transactions that use SF concepts and arrangements. However, the criteria may not be suitable to rate certain transactions with specific attributes described in the following table, as they are not included and discussed here or inconsistent with SF analysis. Therefore, transactions featuring certain of these attributes may not be rated under these criteria. Structures outside the scope of these rating criteria may be evaluated by, or in conjunction with, other analytical groups within Fitch or otherwise not rated by Fitch.

The operational dependence is not typically a consideration that limits the application of this criteria report, as this consideration is explicitly discussed and addressed in terms of uplift over the originator's rating.

Criteria Applicability Considerations

Attribute	This Addendum Does Not Apply	This Addendum Can Apply
Legal		
The debt is issued by a corporate entity (i.e. not by an SPV)	X	
Fitch concludes that the true sale of the assets (or equivalent arrangement) is not achieved, based on legal analysis	X	
Debt		
Refinancing risk at legal maturity	X	
Debt does not amortize by the anticipated repayment date, but it does by the legal maturity		X
Asset		
The rating drivers of the master SF criteria apply (including the sufficient alignment of incentives between transaction parties)		X
Fitch already maintains specific sector criteria on the asset	X	
The analysis is quantitatively complex, an asset model should be developed or the third-party model Fitch receives does not fall under the scope of the associated model review procedure	X	
The assets do not generate a stream of cash flow (e.g. pure market value transactions)	X	
There is completion or other project finance risk	X	
The financed asset had a constructions phase, but it has ended and the asset is operational		X
The asset analysis relies on knowledge that Fitch has outside of the SF group		X
The asset analysis relies on knowledge that Fitch does not have internally	X	
The operating costs are extremely volatile (e.g. rapid growth in the originator's operations accompanied by changes in its business model, transactions exposed to disruptive technological changes and relying on short-term contracts) and neither capped nor guaranteed	X	
The operating costs are volatile, but Fitch can form a view based on the historical record, proxy data and consultant reports		X
The analytical assumptions that need to be applied due to the transaction characteristics are not described in this report and the committee decides to use different metrics, such as loan to value ratios, debt to EBITDA multiples or loan life coverage ratios to analyze the overall leverage		With criteria variation

Source: Fitch Ratings

Appendix 2: Criteria Application Examples and Rating Sensitivity

Case 1

The first scenario is based on a transaction securitizing the cash flow of a charter agreement related to a shipping vessel. The charter agreement defines a fixed cash flow payment from the charterer (an investment-grade entity), provided the operator ensures the vessel is available for use. The charterer credit quality forms a rating cap on the transaction.

The operator is rated 'B+' and also owns the vessel, which is pledged to a bankruptcy-remote issuer. There is a market for this type of vessel and the operator could be legally replaced with limited disruption (there are many alternative companies that could operate it). Therefore, there is some operational dependence and we determine that the originator linkage is limited, which would allow an uplift up to two to three rating categories (to BBB+sf to A+sf). As there is some uncertainty on the operating costs, we temper this to two categories and, therefore, 'BBB+sf'.

There is only one risk factor, which is availability of the asset. The historical availability is 95%, and the committee does not make adjustments and sets the base case at that level. The cash flow risk is determined as midrange, as there is no price risk, the volume risk is midrange, the charterer is rated investment grade, and there is some exposure to increasing opex and some obsolescence risk. The minimum DSCR resulting from a 95% availability is 1.4x. According to the *Asset Cash Flow Volatility Attributes* table, the transaction can achieve 'BBsf'.

In the break-even case, the DSCR drops to 1x when availability falls to 85%. The committee determines that the stress from 95% to 85% is commensurate with 'BBsf' (we ignore notches in this example) and assigns the notes a rating of 'BBsf'.

Sensitivity 1.1

The operator is downgraded to 'B'. This reduces the maximum achievable rating to 'BBBsf', which is still well above the assigned rating of 'BBsf', and, therefore, the transaction rating is not affected.

Sensitivity 1.2

The actual availability in the following year falls to 88% from 95%. Investigating the causes, we determine that long-term maintenance needs to increase due to the default of an important maintenance vendor, so we move the base case to 90%. The analysis on the base case will conclude that there is more volume risk, but the overall assessment remains midrange. The average DSCR drops to 1.2x from 1.4x, which suggests a downgrade to the 'Bsf' category. In addition, the analysis on the break-even scenario now has half the buffer it used to. Considering that the base case corresponds to CCCsf and, by definition, does not include any stress, the initial analysis implied a stress of 0 at 'CCCsf' and of 10pp (i.e. between 95% and 85%) at 'BBsf'. Interpolating the ratings, the halving of the buffer would imply a rating at the midpoint between 'CCCsf' and 'BBsf', so 'Bsf'.

The committee therefore decides to downgrade the rating to 'Bsf', as the risk has increased.

Sensitivity 1.3

The charterer runs into significant financial problems and its rating is downgraded to 'BB-'. As it is the only source of cash flow, the notes are capped at this level, and we downgrade the rating to 'BB-sf'.

Case 2

A bank originator, rated 'A', buys non-perishable raw materials on behalf of some of its clients, to whom it sells this inventory at cost plus a predefined mark-up when they need it for their production process (these operations may be referred to as reverse factoring); so the bank also acts as servicer. The buyers have a take-or-pay obligation in relation to this inventory, although failing to buy would not cause a default on their financial debt (and a downgrade of the IDR, where present). There are 50 buyers, about half of them rated, typically investment grade. Fitch reviews the type of inventory purchased and concludes that — in line with the bank's strategy — it consists of strategic supplies whereby the buyers' incentives to purchase are strong.

The originator securitizes these receivables in a revolving transaction. The transaction is structured with a backup servicer and a servicer termination event at or below 'BBB', which would also trigger an early amortization event, whereby further receivables can no longer be sold and the buyers' payments will amortize the notes under the relevant waterfall. Due to these structural characteristics and the standardized nature of the relevant supply chains, Fitch determined that there is no originator linkage.

The analysis relies on a projected DSCR from the portfolio, based on the buyers' historical purchases. The DSCR projections provided by the issuer already include moderate haircuts in the timing the inventory purchases will be carried out, so Fitch uses the issuer-provided scenario as its base case. The committee determines that the cash flow risk is midrange because there is no price risk, and volume risk is moderate and mitigated by the considerable number of buyers in the pool (which also mitigates the exposure to changing consumer preferences). The concentration risk is also moderate, as the buyers belong to different industries, as is the default risk, for the credit quality of the buyers is good. The resulting minimum and average DSCRs in the base case scenario are 2x and 2.2x, respectively. This would allow the notes to reach the 'Asf' cap under the criteria.

The break-even scenario stresses the exposure to the largest borrowers and the timing of payments. The transaction would have a minimum DSCR close to 1x, assuming the default of the three largest buyers, which historically account for 15% of the portfolio, and the deferral of payments from half of the remaining buyers by six months. The magnitude of these stresses appears severe in light of the historical performance of the portfolio.

As a final check, we realize that there is a justifiable similarity with a corporate CDO analysis, despite these obligations being commercial (rather than financial) and, therefore, not explicitly addressed by the IDR. We run the relevant model under the corporate portfolio with conservative assumptions for the unrated buyers and, considering the credit enhancement available in the structure, a rating in the 'Asf' category can be achieved; this further check makes the rating more robust and as two alternative approaches lead to similar results. Fitch assigns the senior notes a 'Asf' rating.

Sensitivity 2.1

The originating bank is downgraded multiple times over the following years and eventually reaches 'BBB', which constitutes a servicing termination event. The transaction enters the early amortization phase and the servicer is replaced successfully, which has no effect on the rating of the notes, which we affirm.

Sensitivity 2.2

The number of buyers progressively reduces to 35 as some find alternative working-capital funding. This worsens various attributes of the cash flow risk, which the rating committee moves to high from midrange. At the same time and for the same reason, the minimum and average DSCRs drop to 1.9x and 2x, respectively. The break-even scenario also allows the transaction to cover lower stresses before resulting in a payment shortfall. Fitch downgrades the notes to 'BBB+sf'.

Case 3

A 'BB' rated data service company issues debt secured by a licensing fee due from a 'A' rated entity. The licensing fee is 4% of the latter entity's revenue and this payment is top line, as it is deducted before any expense. After its legal review, Fitch determines that the fee can survive the bankruptcy and liquidation of the 'BB' entity and the rating committee determines there is no originator linkage.

As this is a fixed top line payment, our base case considers the expected cash flow. The cash flow risk is low, as there is no price risk and, while concentration is high, the expected transaction rating will be below the 'A' counterparty rating. There is some exposure to volatile consumer preferences and changes in technology, but this is not expected during the risk horizon of the transaction.

The only relevant risk factor is the revenue generated by the 'A' rated entity. The coverage will be affected by swings in revenue. The transaction is structured to have a projected DSCR of 1.3x during its lifetime. The buffer in the break-even case is also considerable, so Fitch assigns a 'BBBsf' rating.

Sensitivity 3.1

During surveillance, the revenue increases by 40%, and, therefore, DSCR increases to 1.6x from 1.3x. The transaction will be reviewed for potential upgrade to 'Asf'.

Sensitivity 3.2

During the surveillance review, the revenue declines by 30%, and, therefore, the DSCR drops from 1.3x to 1.15x. The transaction is downgraded to 'BBsf'.

Sensitivity 3.3

As part of our surveillance, we determine a change in the cash flow volatility assessment, which is changed to midrange. This re-assessment was caused by a revolutionary change and the medium-term revenue outlook has grown more uncertain. Current revenue, at 1.3x, has not changed. However, due to the increased risk in cash flow volatility, the transaction is downgraded to 'BBsf'.

DISCLAIMER & DISCLOSURES

All Fitch Ratings (Fitch) credit ratings are subject to certain limitations and disclaimers. Please read these limitations and disclaimers by following this link: https://www.fitchratings.com/understandingcreditratings. In addition, the following https://www.fitchratings.com/rating-definitions-document details Fitch's rating definitions for each rating scale and rating categories, including definitions relating to default. Published ratings, criteria, and methodologies are available from this site at all times. Fitch's code of conduct, confidentiality, conflicts of interest, affiliate firewall, compliance, and other relevant policies and procedures are also available from the Code of Conduct section of this site. Directors and shareholders' relevant interests are available at https://www.fitchratings.com/site/regulatory. Fitch may have provided another permissible or ancillary service to the rated entity or its related third parties. Details of permissible or ancillary service(s) for which the lead analyst is based in an ESMA- or FCA-registered Fitch Ratings company (or branch of such a company) can be found on the entity summary page for this issuer on the Fitch Ratings website.

In issuing and maintaining its ratings and in making other reports (including forecast information), Fitch relies on factual information it receives from issuers and underwriters and from other sources Fitch believes to be credible. Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or in a given jurisdiction. The manner of Fitch's factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in the jurisdiction in which the rated security is offered and sold and/or the issuer is located, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third- party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors. Users of Fitch's ratings and reports should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information Fitch relies on in connection with a rating or a report will be accurate and complete. Ultimately, the issuer and its advisers are responsible for the accuracy of the information they provide to Fitch and to the market in offering documents and other reports. In issuing its ratings and its reports, Fitch must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings and forecasts of financial and other information are inherently forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a result, despite any verification of current facts, ratings and forecasts can be affected by future events or conditions that were not anticipated at the time a rating or forecast was issued or affirmed.

The information in this report is provided "as is" without any representation or warranty of any kind, and Fitch does not represent or warrant that the report or any of its contents will meet any of the requirements of a recipient of the report. A Fitch rating is an opinion as to the creditworthiness of a security. This opinion and reports made by Fitch are based on established criteria and methodologies that Fitch is continuously evaluating and updating. Therefore, ratings and reports are the collective work product of Fitch and no individual, or group of individuals, is solely responsible for a rating or a report. The rating does not address the risk of loss due to risks other than credit risk, unless such risk is specifically mentioned. Fitch is not engaged in the offer or sale of any security. All Fitch reports have shared authorship. Individuals identified in a Fitch report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only. A report providing a Fitch rating is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of the securities. Ratings may be changed or withdrawn at any time for any reason in the sole discretion of Fitch. Fitch does not provide investment advice of any sort. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from US$1,000 to US$750,000 (or the applicable currency equivalent) per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from US$10,000 to US$1,500,000 (or the applicable currency equivalent). The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any registration statement filed under the United States securities laws, the Financial Services and Markets Act of 2000 of the United Kingdom, or the securities laws of any particular jurisdiction. Due to the relative efficiency of electronic publishing and distribution, Fitch research may be available to electronic subscribers up to three days earlier than to print subscribers.

For Australia, New Zealand, Taiwan and South Korea only: Fitch Australia Pty Ltd holds an Australian financial services license (AFS license no. 337123) which authorizes it to provide credit ratings to wholesale clients only. Credit ratings information published by Fitch is not intended to be used by persons who are retail clients within the meaning of the Corporations Act 2001.

Fitch Ratings, Inc. is registered with the U.S. Securities and Exchange Commission as a Nationally Recognized Statistical Rating Organization (the "NRSRO"). While certain of the NRSRO's credit rating subsidiaries are listed on Item 3 of Form NRSRO and as such are authorized to issue credit ratings on behalf of the NRSRO (see https://www.fitchratings.com/site/regulatory), other credit rating subsidiaries are not listed on Form NRSRO (the "non-NRSROs") and therefore credit ratings issued by those subsidiaries are not issued on behalf of the NRSRO. However, non-NRSRO personnel may participate in determining credit ratings issued by or on behalf of the NRSRO.