Aircraft Enhanced Equipment Trust Certificates Rating Criteria

Sector-Specific Criteria

This report replaces the Aircraft Enhanced Equipment Trust Certificates Rating Criteria report dated Aug. 31, 2021.

Scope

This report specifies Fitch Ratings' methodology for assigning new and monitoring existing international ratings to aircraft enhanced equipment trust certificates (EETCs) globally. EETCs are hybrid corporate-structured debt securities air carriers commonly use to finance aircraft equipment. The criteria is applicable only to EETCs sponsored by the user of the aircraft.

Due to the bonds' hybrid characteristics, Fitch's approach incorporates elements of the Corporates and Structured Finance rating methodologies. The methodology focuses on U.S. EETCs but it can be applied in foreign jurisdictions where the insolvency regime is supportive of creditors' ability to repossess aircraft in a timely fashion.

The primary rationale for a separate EETC ratings criteria relates to the special treatment reserved for aviation assets under Section 1110 of the U.S. Bankruptcy Code and structural enhancements, including liquidity facilities and tranching, that reduce default risk for EETCs. Default probabilities and recovery expectations for EETC securities are not described completely by Fitch's general Corporates or Structured Finance methodologies.

Key Rating Drivers

The Key Rating Drivers below are listed in order of importance to the analysis. The importance of individual and aggregate quantitative and qualitative rating drivers can vary among transactions and over time.

Legal Protection for Creditors: Fitch regards the legal protection offered by Section 1110, and certain international regimes, as critical in supporting the reduction of EETC default risk, relative to other secured corporate obligations. Default, as defined in EETC documents, differs in some key respects from the default definition for typical corporate debt securities.

Senior Tranche Ratings: Fitch employs a "top-down" approach that focuses primarily on structure, collateral and legal protection with a secondary dependence on the airline Issuer Default Rating (IDR), which will likely lead to ratings that are less volatile than subordinated tranche ratings. This methodology allows for a significant differential between senior tranche ratings and the airline's general corporate obligations.

Importance of Collateral Analysis: A thorough understanding of aircraft collateral pool characteristics, the level of overcollateralization (OC) in various stress scenarios, and the likelihood of an affirmation of aircraft obligations in an airline bankruptcy are essential parts of the Fitch EETC ratings process.

Strong Performance in Bankruptcies: Early-generation EETCs were tested in multiple U.S. airline debt restructurings. Observed default rates were low and realized recoveries were strong, particularly for senior EETC classes. Structural enhancements in newer transactions should support EETC performance in future bankruptcies.

Subordinated Class Ratings: Subordinated tranches benefit from Section 1110 but most ratings are more closely linked to airline IDRs through a "bottom-up" approach that factors in the likelihood of the airline's affirmation of aircraft obligations after a bankruptcy filing, structural features and recovery. Subordinated tranches with sufficiently low loan-to-value (LTV) ratios can be rated with a top-down approach in some cases.

Related Criteria

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

Country-Specific Treatment of Recovery Ratings (March 2023)

Global Structured Finance Rating Criteria (March 2023)

Structured Finance and Covered Bonds Counterparty Rating Criteria (March 2023)

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

Aircraft Operating Lease ABS Rating Criteria (August 2021)

Corporates Recovery Ratings and Instrument Ratings Criteria (April 2021)

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EETC Background

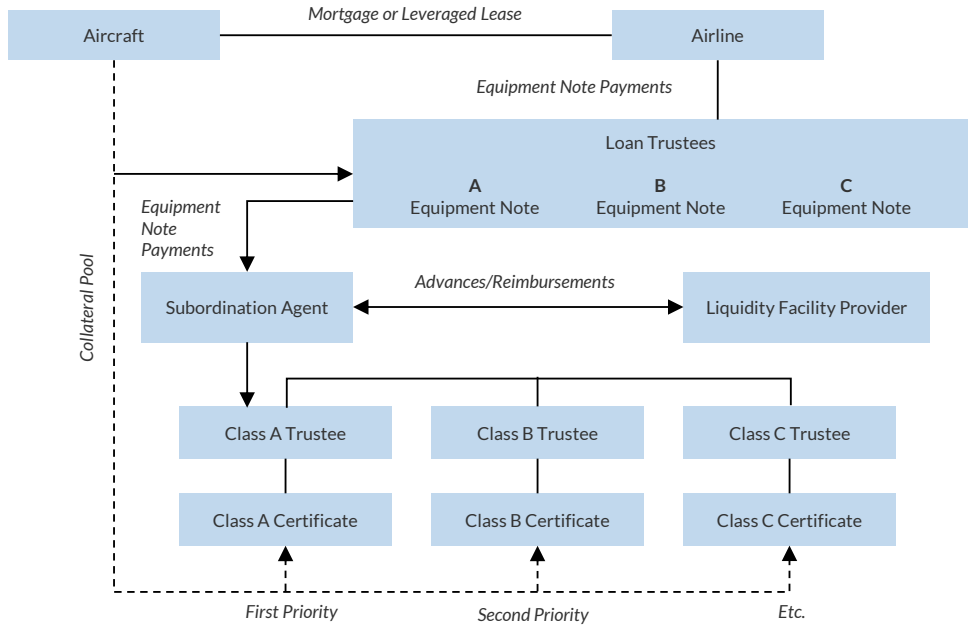
EETCs are one of the most common forms of secured debt securities issued by airlines. They offer airlines a source of secured financing through structured securities that provide investors with strong credit protection. The pass-through trust structure commonly employed in EETC transactions (see the chart below) reduces default risk and improves recovery prospects, as creditors can gain quick access to aircraft collateral via Section 1110 in the event of an airline bankruptcy and the failure of the airline to make timely interest and principal payments after a Chapter 11 filing.

Debt service on EETCs are made via loan or lease payments from a single supporting airline by way of bankruptcy-remote pass-through trusts. Separate classes of EETCs are issued to bondholders, representing tiered secured claims on multiple underlying aircraft in accordance with inter-creditor arrangements in transaction documents. This effectively underpins credit quality for senior tranche holders, pushing first-loss risk down to subordinated classes.

Creditor Protection

Section 1110's well-established legal framework and structural enhancements typically included in these transactions, notably a liquidity facility that usually covers 18 months of interest payments to bondholders and OC, provide creditors with greater protection via access to liquid and marketable collateral and reduced linkage with the airline credit, relative to traditional corporate financing.

Typical EETC Transaction Structure



Source: Fitch Ratings.

Default Considerations

In contrast to corporate debt securities, a bankruptcy filing by the underlying obligor does not equal a default for EETCs. Pass-through certificate documents define default as occurring when an interest payment is missed, after the expiration of the liquidity facility, or in the event that full principal is not repaid at legal final maturity, typically 18 months after the final scheduled payment. Failure to pay periodic principal amortization is not an event of default.

The EETC structure was designed specifically to survive an airline bankruptcy, mitigating the risk of a payment default and ensuring the prompt pursuit of remedies by holders after a Chapter 11 filing. In addition, the usual inclusion of the liquidity facility in EETC transactions ensures that 18 months' worth of interest payments will be made before debt service stops altogether.

From the standpoint of conventional corporate debt security analysis, a Chapter 11 filing by the obligor represents an event of default, explicitly linking the rating of any secured issue to the borrower's IDR. In contrast, the EETC does not incur an event of default when the airline enters bankruptcy, underscoring the need for a different approach to default risk evaluation.

Ratings Methodology Overview

Our ratings approach for EETCs incorporates elements of Corporates and Structured Finance methodologies. Fitch emphasizes EETC default terms and bondholder remedies differ significantly from those in typical corporate debt obligations. Senior tranche EETC holders are in a stronger position than other corporate secured creditors, with respect to default risk and recovery potential.

EETC subordinated class holders face higher risk of recovery shortfalls than senior tranche holders in a default scenario but may remain in a comparable position to holders of other corporate secured debt depending on the structure of the EETC and levels of OC, as subordinated tranche holders benefit from the same probability of default benefits as the senior tranche holders.

Fitch's approach to EETC risk assessment and ratings focuses on several factors related to the legal framework, structural enhancement and collateral coverage that provide material default risk mitigation and recovery benefits to bondholders. Especially important in this regard is the power of Section 1110 to exempt creditors from the automatic stay, under Section 362 of the Bankruptcy Code, in an airline bankruptcy proceeding, the role of the liquidity facility in deferring a payment default, and the strong likelihood that senior tranche holders can recover principal in the event that the airline rejects its aircraft obligations in Chapter 11.

The EETC ratings process begins with a review of transaction documents focusing on the key structural provisions Fitch expects to see in any rated transaction. Key elements are the liquidity facility, cross-default and cross-collateralization provisions, and tiered classes of debt with subordination in the payment waterfall.

Fitch's analysis includes an evaluation of the underlying airline credit, and, just as important, a review of the airline's fleet composition and strategy. The fleet composition and strategy are the key drivers of our determination of the likelihood of an airline's affirmation of the EETC aircraft in the case where an airline files for Chapter 11. An affirmation of the aircraft in bankruptcy implies that the airline continues to pay for the aircraft on time and in full. The details of this analysis are discussed below.

Senior Tranche Ratings

For the EETC senior tranche, we employ a top-down approach that primarily focuses on structure, collateral and legal protection with a secondary dependence on the airline IDR. The approach borrows some elements of our aircraft ABS ratings approach. The aircraft portfolio valuation is stressed for various levels of price declines to determine the instrument's rating category.

Repossession costs, remarketing costs and a full draw of the liquidity facility are included in the stress cases. We then analyze several other factors to notch the ratings within the category. Fitch will rate senior tranches 'AA+' and below. Our rating methodology does not consider issuing 'AAA' ratings for EETC transactions. A downside case, reflecting a severe global aviation downturn, drives the senior tranche methodology.

Throughout this report, Fitch will refer to its top-down approach as it applies to senior tranches. However, certain subordinated tranches may be structured with sufficiently low LTVs to pass our 'A' level stress tests. In such instances, we may choose to apply a top-down approach rather than the bottom-up approach typically used for subordinated tranches. The risk profile of such a heavily OC subordinated tranche can be similar to a typical senior tranche, with one major difference being that the subordinated tranche holders do not act as the controlling party. Fitch will generally maintain at least a one-notch rating differential between EETC tranches.

For surveillance purposes, we will generally continue to rate a given sub-tranche by whichever method the initial ratings were assigned (i.e. a sub-tranche initially rated via bottom-up approach will be surveilled via the same approach). There may be exceptions to this approach, as in the case of a subordinated tranche that benefits from a rapid amortization schedule, leading to improving collateral coverage over time. In such a case the certificates may initially be rated via Fitch's bottom-up approach and then, as collateral coverage improves, via the top-down approach.

Senior Tranche Default Risk

Fitch believes investors in senior tranches benefit from particularly strong risk-mitigating features in the EETC structure. Senior tranches of EETCs benefit not only from the typical legal and structural features but also from the shock-absorbing characteristics of subordinated classes beneath them in the payment waterfall. Thus, default probabilities are substantially lower than those of the associated airline and the subordinated classes in the EETC structure.

The critical driver of this credit quality strength, relative to subordinated classes, is the high degree of collateral coverage (i.e. low LTV levels) and outstanding recovery expectations even in a scenario in which pool aircraft values are severely stressed and aircraft are rejected early in the airline bankruptcy.

Above all, the quality and value of the pool aircraft, the importance to the airline in its post-restructuring fleet plan, and the assessment of the likelihood of aircraft affirmation in bankruptcy determine the default risk for the EETC senior tranche. Absent a major decline in pool asset coverage or a reassessment of the likelihood of rejection, the airline IDR itself is a tertiary factor in driving senior tranche ratings.

Fitch views senior tranche default and recovery characteristics as significantly better than those of other corporate secured obligations and subordinated EETC classes. Accordingly, our methodology allows for a significant ratings differential between the IDR of the airline obligor and the senior tranche issue rating.

Steps in the Senior Tranche Ratings Process

The top-down collateral analysis process looks first to asset coverage under differing rating stress scenarios. LTVs for each class are compared across all defined rating stress scenarios to determine the appropriate rating category level. Fitch's senior tranche rating process consists of three major steps.

Step 1

Determine collateral coverage at each rating category stress level by applying appropriate tier adjustments, see the *Value Decline Stresses by Rating Category* table on page seven, to individual aircraft base or market values. The outstanding debt balance throughout the life of the deal will be combined with a full liquidity facility draw and assumed repossession and remarketing costs to calculate LTV ratios over time. Value stresses will be assessed throughout the life of the transaction.

Step 2

Identify the highest rating category where the senior tranche LTV does not exceed 100%. This indicates the general rating level, with the ultimate rating one notch lower or higher than the central category rating (e.g. 'BBB', 'A' or 'AA') based on a qualitative comparison of aircraft pool strength, the likelihood of affirmation, the airline IDR, and any other factors the analysts consider relevant to the specific aircraft pool.

Given the near-term probability of default for a particular airline is reflected in its IDR, Fitch considers the credit quality of the obligor airline in determining when in the life of the transaction to apply its stress scenarios. We will assume an immediate default and will apply our LTV stresses from day one for transactions sponsored by airlines rated in the 'CCC' rating category. In contrast, for an airline rated in the 'B' category, Fitch will assume an airline's default and will apply its LTV stresses one year in the future. Similarly, the airline's default will be assumed two years in the future for an airline rated in the 'BB' category.

For example, for an EETC transaction sponsored by an airline rated in the 'B' category, we may rate a senior tranche in the 'A' category even if the initial 'A' level stressed LTVs are higher than 100% but are expected to fall below 100% within the one-year timeframe. A similar transaction sponsored by an airline rated in the 'CCC' category would be rated lower, depending on the passed stress levels.

As discussed in the following section, some of the applied stresses are severe, and for the highest rating categories the stresses reach levels more negative than the levels experienced in prior aviation downturns. The rationale is senior tranches must be able to withstand harsh stresses to earn the highest ratings that Fitch considers appropriate for this debt class. There is a tradeoff between stress levels and subsequent ratings volatility, with the expectation senior tranche ratings' volatility will be lower than IDR volatility as a result of the severe stresses applied in this methodology.

Theoretically, the most liquid aircraft types coupled with favorable LTVs, from the creditor's perspective, should be able to support the highest ratings, indicating a high likelihood of avoiding default in a scenario where an airline rejects the aircraft during a severe global aviation downturn. Fitch notes there is a relationship between the probability of surviving a downturn and the likelihood of affirmation in Chapter 11, as the most liquid aircraft types with favorable LTVs should have a high likelihood of affirmation.

Step 3

In cases where senior tranches do not pass Fitch's 'BBB' category stress tests, the rating achieved through the application of our subordinated tranche bottom-up approach will act as a rating floor.

Aircraft Values

Determining the value of the aircraft pool supporting the EETC is a key element of Fitch's analysis. Generally, we will use adjusted base values but, in some cases, we will use market values. For some transactions, Fitch could use a mix of base and market values. We will typically use the values supplied by our own sources rather than the values provided in transaction documents. One goal for the senior tranches is to "rate through the cycle," so base values will likely be used for continuing analysis for EETCs that have not repossessed aircraft. In situations where aircraft were rejected and repossessed, we will focus on current market values. Aircraft values are discussed in more detail below.

Tier 1 aircraft values typically declined 10%–20% during the 2001–2005 and the 2008–2014 industry downturns. This reflected relatively resilient demand, even in a period of historically weak air travel demand, and substantial airline capacity reduction. In the Fitch methodology, stresses of this magnitude would correspond with 'BB' rating category tests.

In other words, aircraft pools lacking the capacity to withstand a 9/11-type shock (i.e. maintaining peak LTVs below 100% through the life of the transaction) would be unlikely to achieve investment-grade ratings (above the 'BB' category). A floor for the transaction rating would be set at a level closer to the airline IDR, with an adjustment for the likelihood of affirmation in bankruptcy, as detailed in the discussion of subordinated tranche ratings below.

Portfolios with outstanding value and liquidity characteristics could withstand significantly more severe shocks, or up to 50% for Tier 1 aircraft in the 'AA' category and up to 30% for Tier 1 aircraft in the 'A' category stress level. Fitch generally assumes aircraft values do not recover significantly from stressed levels seen after aviation downturns similar to those seen in 2001–2003 and 2007–2009. In the case of newer generation models with more resilient demand profiles, some degree of value recovery may be assumed.

Value Stress Scenarios and Senior Tranche Risk

The issue rating level for the senior tranche security is determined by the pool's ability to withstand assumed stresses for each rating category from high investment grade to speculative grade. By applying stress levels similar to those used in the analysis of structured securities, such as aircraft operating lease securitizations, Fitch assesses the pool's quality and default risk through the determination of peak stressed LTVs over time.

The table on the following page includes 'AA' category stress whereas Fitch's *Aircraft Operating Lease ABS Rating Criteria* does not. In addition, the applicable stress ranges shown in the table are wider compared with the ranges included in our ABS criteria. For example, the Tier 1 'A' level stress range is 20%–30% for EETCs and 25%–30% in ABS transactions. These differences are due to the various structural distinctions between EETCs and ABS transactions.

Fitch notes the use of price guides and appraisals is necessitated by the limited amount of public information available regarding pricing and trading activity for commercial aviation equipment. As such, our stress levels may vary from the disclosed ranges, and the ranges remain subject to change as additional information becomes available. For instance, during a period of depressed asset values, we may decide that applying further and immediate stresses to current values may not be warranted.

To determine an aircraft portfolio's vulnerability to severe value stresses, similar to those witnessed in recent aviation market downturns, Fitch conducts an analysis of LTVs for each certificate class under a number of scenarios where the values of individual aircraft in the pool are stressed. In addition to normal base case depreciation, aircraft values are typically exposed to numerous cyclical and event-driven value declines throughout their useful lives. The sources of these declines are usually cyclical commercial aircraft market downturns but other stresses related to technological change and regulation could have an outsized effect on the values of particular aircraft models.

As a result, our cash flow analysis of collateral coverage incorporates value decline stresses that help measure a collateral pool's ability to withstand extraordinary pressure similar to — or in the case of our 'AA' and 'A' level stresses, significantly worse than — the stresses seen during the 2001–2005 and 2008–2014 downturns. Fitch will assess the effect of value stresses throughout the transaction's life.

A summary of our aircraft value decline stresses in recession scenarios of varying severity is provided in the table *Value Decline Stresses by Rating Category*. These value stresses are consistent with the 2001–2003 and 2008–2010 aviation market downturns as a reference for the base case decline rates, or the 'BB' rating scenario in the table. These declines are stressed incrementally for each rating level, as detailed in the table.

Fitch's application of value stresses may not always be symmetrical across rating categories. A 30% stress (high end of the stress range) may be applied in an 'A' level stress, while a 45% stress (midpoint of the stress range) may be used in the 'AA' level stress scenario. Such adjustments will be based on analytical judgment and informed by historical asset value performances through downturns.

Rating levels are associated with each shock scenario, reflecting likely rating outcomes for senior tranche certificates given their ability to maintain Fitch-calculated LTVs below 100% after base values are stressed. This approach mirrors the framework applied in the analysis of many ABS instruments by Fitch's Structured Finance group.

Rating Sensitivity to Appraisal Values

Due to the subjective nature of the aircraft appraisal process, the appraised base values that we use in our analysis can fluctuate from year to year. With appraisal values serving as a key input into our analysis, larger than expected fluctuations in value can affect ratings. When assigning initial ratings to tranches rated with a top-down approach, we consider potential fluctuations in those values by analyzing a transaction's ability to withstand unexpected minor fluctuations in the valuations.

Fitch conducts sensitivity analyses by applying various stresses (4%–7% depending on diversification and the composition of the underlying pool of aircraft) to the initial appraised values to identify tranches that may breach our stress tests as a result of these additional stresses. Tranches that are highly sensitive to appraisal values may be assigned a rating one category lower than is implied by the model results. For instance, if a tranche passes 'A' level stresses but fails the test as a result of the sensitivity analyses, Fitch may consider a 'BBB' category rating.

Repossession and Remarketing Risks

In addition to the price declines discussed in the previous section, Fitch's senior tranche approach includes reducing the value of the aircraft pool for potential repossession and remarketing costs. These costs include storage, legal fees, basic maintenance, insurance and broker commissions.

Investors in EETCs face potentially significant risks related to cash flow continuity in a bankruptcy scenario, even after considering reduced default risk arising from legal protection and structure. Repossession and remarketing costs can be large, at 5%–10% of the market value of an aircraft. Uncertainties surrounding the condition and maintenance status of pool aircraft also represent risks. For its analysis, Fitch will generally assume costs equal to 5% of the pool but this number will be adjusted to account for specific features of the pool. Adjustments to the basic 5% assumption will likely be based on qualitative feedback received from the appraisers that Fitch uses in its analysis.

In situations where weak secondary market conditions make it difficult to monetize rejected aircraft, certificate holders could be forced to divert interest payments or aircraft sale proceeds to cover unanticipated costs of a lengthy remarketing period. In a worst-case scenario, investors could be requested to put more cash into trusts to cover cash shortfalls, although this is rare. Ratings could be affected if Fitch believes that a post-rejection marketing process will be long and difficult, perhaps as a result of a distressed market for aviation assets.

Should repossession and remarketing of aircraft occur, it is safe to assume that secondary market conditions for aircraft will be very weak. Certificate holders are largely at the mercy of the secondary aircraft market with respect to the timing of any final disposition. If the remarketing period lengthens and the risks of a missed interest payment grow, we may downgrade the ratings as detailed in the *Rating Assumption Sensitivity* section on page 26.

Asset Concentration Risk

Fitch considers asset concentration risk as a limiting factor for EETC tranche ratings. Collateral pools containing a small number of total assets face increased risk that outsized events to the value of a small number of aircraft in the pool, for instance due to physical damage, could adversely affect collateral coverage for the transaction as a whole. We account for this additional risk through minimum aircraft count requirements that increase by rating category, or in cases where asset count minimums are not met, by increased asset value stress rates and enhanced reporting requirements. We quantify concentration risk with an "Effective Count" of aircraft, which captures the count and number of assets and the distribution of aircraft values.

Value Decline Stresses by Rating Category

(%)	AA	A	BBB	BB
Aircraft Tier 1	40–50	20–30	15–25	10–20
Aircraft Tier 2	50–60	30–40	25–35	20–30
Aircraft Tier 3	N.E.	40–50	35–45	30–40

N.E. – Not eligible
Source: Fitch Ratings

The effective count is calculated as the reciprocal of the Herfindahl–Hirschman index for the pool of planes, using market values as the weight. In cases where minimum effective aircraft counts are not met Fitch will increase the asset value stresses in its models per the table below to account for the concentration risk. Within the ranges below, we will generally increase value stresses as the effective plane count gets further away from the specified minimum threshold.

For instance, a transaction with an effective count of seven aircraft will generally receive a higher value stress than a similar transaction with an effective count of nine aircraft. Analytical judgment will play a role in assigning ratings to transactions that do not meet minimum count requirements, particularly as asset pools become more concentrated.

Fitch will also adjust its value stresses based on qualitative factors, such as the attractiveness of the underlying aircraft and the transactions' affirmation factor. These provisions are applicable for transactions we consider to have at least a medium affirmation factor. For transactions with a low affirmation factor, the minimum effective aircraft counts will act as a rating cap.

Minimum Effective Aircraft Count

Rating Category	10+	<10	<5	<3
AA	—	Value stresses +0-15%	N.E.	N.E.
A	—	—	Value stresses +0-15%	N.E.
BBB	—	—	—	N.E.

N.E. – Not eligible
Source: Fitch Ratings

For concentrated portfolios, Fitch will also request the issuer to provide semi-annual, manufacturer serial number (MSN) specific maintenance-adjusted appraisals for the collateral and an attestation all aircraft are free from material damage and in good working order. These requirements allow Fitch to more closely monitor the condition of the assets relative to a standard desktop appraisal and to take appropriate rating action if needed. Receipt of satisfactory enhanced reporting requirements may contribute to lower asset value stresses, all else equal.

Liquidity Facility Draw

Fitch assumes a full draw of the liquidity facility in its stress analysis to determine senior tranche ratings. Liquidity facilities are discussed in more detail below.

Notching Within the Rating Category

Once the general category for the senior tranche rating is determined through the process outlined above, Fitch may adjust transaction ratings within the specified rating category (i.e. one-notch adjustments within the 'AA', 'A', 'BBB' or 'BB' rating categories). The factors that could lead to single-notch adjustments include the credit quality of the airline obligor and the core nature of the aircraft in the pool to the airline's long-term fleet strategy, which is the Affirmation Factor.

We consider an underlying airline rating of 'B' or below to be a negative influencing factor on the senior tranche ratings. All else being equal, Fitch is more likely to adjust issue ratings down a notch, relative to the central category rating in these cases. The underlying IDR will be considered in concert with Fitch's going concern assessment, which is discussed in more detail in the Subordinated Tranche Ratings section below.

Conversely, issues of highly rated carriers, particularly if the IDR is investment grade, could be rated a notch higher than the central category level. In cases where pool aircraft are regarded as essential to the airline's long-term strategic viability, and if the aircraft are solidly in Fitch's Tier 1 classification, senior tranche ratings could be raised by one notch from the central point of the rating category.

Ratings Range

Fitch will assign 'AA+' and below ratings to various tranches of EETC transactions. Our rating methodology does not consider issuing 'AAA' ratings for EETC transactions.

Ratings in the 'AA' Category

Ratings in the 'AA' category denote Fitch's expectations for very low default risk, and indicate very strong capacity for payment of financial commitments even during the cyclical downturns and exogenous shocks exhibited by the industry. As such, we will only consider ratings in the 'AA' category for EETC senior tranches exhibiting the lowest levels of risk.

Such transactions are expected not only to withstand the stress rates listed above but also to exhibit the qualitative characteristics shown in the table below. Characteristics listed in the table are not exhaustive and other factors may be considered as they arise on a case-by-case basis.

Qualitative Characteristics for 'AA' Category Consideration

Characteristic	Comments
Pool Comprises Tier 1 Aircraft	Fitch expects collateral pools to consist solely of Tier 1 aircraft at inception.
Minimum Number of Aircraft	Fitch expects collateral pools to have an effective count of 10 aircraft.
New Delivery/Recent Vintage Aircraft	All aircraft expected to remain under 15 years of age throughout the life of the transaction.
High Affirmation Factor	Aircraft are expected to be core to the airline's long-term fleet plan. Collateral pools with a low or moderate affirmation factor may limit ratings to the 'A' category.
Going Concern Assessment	Fitch's view of an airline's inability to survive insolvency proceedings as a going concern, the longevity and viability of an airline's business model, its footprint and competitive landscape may limit ratings to the 'A' category.
Airline Issuer Default Rating	Senior tranche ratings are unlikely to reach the 'AA' category if the underlying airline is rated 'B–' or lower.

Source: Fitch Ratings

Subordinated Tranche Ratings

Ratings of most subordinated tranches are determined through a bottom-up approach. Unlike the bondholders of the tranches rated with the top-down approach, investors holding junior subordinated classes of EETCs are not likely to benefit from high levels of OC in an airline bankruptcy scenario where aircraft values are severely stressed. Therefore, Fitch sees the default risk for these holders as being more closely linked with the airline IDR, reflecting that these classes are more likely to experience some impairment in a bankruptcy.

Similar to our general Corporates rating approach, most subordinated tranche ratings are notched up from the airline's IDR. As subordinated tranche holders benefit from the tendency of airlines to affirm obligations under Section 1110(a), Fitch captures the reduced default risk by factoring in the likelihood of the airline's affirmation of aircraft obligations after a bankruptcy filing, structural features such as the availability of a liquidity facility and recovery prospects.

Correspondingly, Fitch applies notching adjustments for the Affirmation Factor, the benefit of a liquidity facility and recovery prospects. The junior tranches rated with the bottom-up approach will be much more volatile than the senior and the subordinated tranches rated with the top-down approach as these tranches can be expected to move in line with the airline IDR. In addition, the notching for the subordinated tranche rating may change as Fitch revises its expectations regarding the likelihood of affirmation and likely recovery.

Considerations of Subordinated Position (Controlling Party Considerations)

Lower recovery prospects, combined with subordinated tranches not being a controlling party in the EETC after an airline bankruptcy, are key credit considerations. Subordinated classes lack the power to negotiate with the airline in Chapter 11 and are subject to forces largely beyond their control in the event the aircraft are rejected. While there are some limits on the actions of the controlling party, initially the 'A' tranche, and in some cases the liquidity facility provider, subordinated tranches could suffer substantial impairment in some cases, depending on subordination and OC levels, quality of collateral, etc., unless they exercise their rights to buy out the senior tranches.

Subordinated tranche holders have the right to buy out senior tranche investors after aircraft are rejected in bankruptcy, potentially improving recovery prospects prior to the expiration of the liquidity facility. Still, exercising this right could require substantial financial resources, which might not be available in times of financial crisis. Additionally, low expected recovery prospects may make it difficult to obtain the external financing required to buy out senior tranches.

For highly OC subordinated tranches that Fitch rates using its top-down approach, we believe the risk of not acting as the controlling party is adequately mitigated by the collateral coverage included in the transaction. In cases where a subordinated tranche is capable of passing our 'A' category stress scenario, the subordinated tranche holders would have significant incentive to exercise their buy-out rights in a situation where they were facing impairment due to actions of the controlling party.

Subordinated tranche holders would be more likely to have access to funding due to a high likelihood of ultimate principal recovery. The same is not necessarily true for more deeply subordinated tranches. Fitch may consider a one-notch rating differential between senior and subordinated tranches rated by its top-down approach to account for the absence in controlling party rights.

Other risk mitigants to not being the controlling party include Section 1110, discussed elsewhere in this report, which in most respects benefits all of the EETC tranches equally. Cross-default terms in the standard EETC template, which provide for cross-default across all tranches in a given transaction, should support an affirmation of the aircraft pool in the event of an airline bankruptcy. Finally, the waterfall of payments in most modern EETCs pays interest on all tranches before principal payments, benefitting subordinate tranche holders in the event of a renegotiation or releasing of the aircraft.

Subordinated Methodology and Adjustments for Bottom-Up Approach

All in, the subordinated tranches rated through Fitch's bottom-up approach can be rated as much as five notches above the airline IDR. For transactions featuring airlines with low ratings, and heavily OC sub-tranches that we elect to rate through our top-down approach, the notching differential between the corporate IDR and the EETC rating may be greater. The rating achieved via the bottom-up approach will be capped at 'BBB+' for non-investment-grade issuers and at 'A–' for issuers rated in the 'BBB' category. Fitch's bottom-up rating process consists of five steps as outlined below.

Step 1 – Assessment of Affirmation Factor

Fitch will assign ratings to subordinated EETC tranches by notching up from the airline IDR based on an assessment of the likelihood of aircraft affirmation by the associated airline in a bankruptcy scenario (the Affirmation Factor), which Fitch considers to be the main driver of the subordinated tranche credit profiles in addition to the airline IDR. In assessing the likelihood of affirmation of a particular pool of aircraft, we consider several key factors, as outlined in the table in the *Appendix*.

The strategic importance of the pool is a qualitative assessment of the importance of the aircraft models in an EETC portfolio to the carrier's long-term fleet strategy. Pools of aircraft that are core to the airline's strategy are more likely to be affirmed quickly during a bankruptcy reorganization. Collateral pools containing more marginal fleet types that the airline may seek to reject in bankruptcy may have a negative effect on the pool quality assessment.

Factors that Fitch considers in assessing the core characteristics of pool aircraft include the cost per seat mile and trip cost profiles of aircraft, and their range and route service capabilities in the context of the carrier's network. In addition to a model's general unit operating cost profile, Fitch will consider carefully its fuel burn characteristics and the potential for less fuel-efficient aircraft to be discarded from the carrier's fleet in a restructuring scenario.

There is some interdependence between the qualitative (fleet strategy assessment) and quantitative (LTV stresses) parts of the collateral analysis process. Portfolios consisting primarily of high-quality, young aircraft are seen as having a high likelihood of affirmation given the importance of those aircraft to the carrier. The importance of these aircraft in the long-term fleet plan provides further justification for a large rating differential between senior tranches and airline IDRs.

Additional factors supporting the strategic importance of the fleet include aircraft tier, diversification and the composition of the airline's order book. The composition of the collateral pool by aircraft tier is a key indicator of the pool's importance to the airline as high-quality Tier 1 aircraft are less likely to be rejected than Tier 2 or Tier 3 aircraft.

Collateral pools containing more than one aircraft type are generally seen as having a higher Affirmation Factor than pools with a single asset type. This is particularly true if multiple aircraft types are seen as being core to the airline's fleet. Fitch considers the airline's order book to assess the likelihood a particular pool of aircraft will remain core to the fleet through the life of a given transaction.

The age of the collateral pool, as it relates to the rest of the airline's fleet, is also a key consideration. New delivery and modern vintage aircraft, which are more likely to feature greater fuel efficiency, better operating economics, upgraded interiors, etc., are considered less likely to be rejected in bankruptcy than older, less efficient planes. The collateral age as it contributes to the Affirmation Factor must be viewed in the context of the airline's existing fleet and its order book.

The inclusion of young aircraft may be considered especially important to the likelihood of affirmation if the airline's existing fleet is heavily weighted toward older models. In contrast, the inclusion of young aircraft may play a less significant role in the Affirmation Factor if the airline's order book contains many more aircraft of the same type scheduled for delivery within the lifetime of the transaction.

The size of the aircraft pool as a percentage of the airline's fleet, as a whole, and the size of the pool as it relates to a particular sub-fleet (i.e. percentage of wide/narrow bodies or a particular aircraft type) can influence the likelihood of affirmation. As the relative size of the pool increases, the likelihood of rejection in a reorganization scenario decreases, since the rejection of a large pool of aircraft may impede the airline's ability to operate. This is particularly true for newer/high quality aircraft, which are likely to have superior operating economics compared with the fleet as a whole.

A relatively small pool of aircraft, as a percentage of an airline's total fleet, may have a high Affirmation Factor if the collateral aircraft compose a significant portion of a particular sub-fleet. For instance, a pool may contain less than 2% of an airline's total fleet but may make up a large portion of its widebody fleet, making the pool key to an airline's high-density routes. We assess the percentage of an airlines' fleet owned by operating lessors that may have outsized bargaining power in a distress scenario.

The Affirmation Factor incorporates the EETC's expected cost of funding. As a bankrupt airline looks to reduce its cost structure, its motivation will be to restructure the most expensive sources of funding. If an EETC is issued in a favorable interest rate environment and is expected to achieve a low total cost of funding, relative to an airline's other funding sources, the likelihood of affirmation will increase.

Central to the concept of the affirmation factor is Fitch's assessment of the airline's likelihood of surviving an insolvency proceeding as a going concern. Affirmation Factor is of little importance if the underlying airline ultimately chooses or is forced into liquidation. In assessing an airline's likelihood of surviving as a going concern Fitch will consider things such as the entity's size and geographic footprint, whether it could be considered systemically important to a particular market, and whether a particular pool of aircraft has a high likelihood of receiving government support.

We consider the likelihood of liquidation to be lower for large carriers where failure could lead to serious disruptions in air travel. Conversely, liquidation may be more likely for small regional carriers where potential travel disruptions would be more manageable. Fitch will consider the airline's likely reasons for entering a bankruptcy proceeding. For example, an airline that simply has a high debt burden may have a higher likelihood of continuing as a going concern than one with a fundamentally flawed business model. All of the above factors, along with various other qualitative issues that may arise on a transaction-by-transaction basis, are evaluated in determining the overall Affirmation Factor.

Fitch notes the decision of a bankrupt airline to affirm a pool of aircraft is not necessarily permanent. In other words, Section 1110 does not prevent a bankrupt airline from initially affirming the aircraft underlying a particular EETC and then subsequently choosing to reject the aircraft. In such a situation, subordinated tranche ratings could experience multi-notch downgrades. We believe this situation is rare in recent bankruptcies but the risk should be evaluated in rating the subordinated tranches.

Step 2 — Notching Based on the Assessment of the Affirmation Factor

The ratings adjustment driven by the Affirmation Factor reflects Fitch's assessment of the effect that a higher likelihood of aircraft affirmation will have on the default probabilities of subordinated tranches. The range of rating adjustments associated with the Affirmation Factor is shown in the table below and various factors considered in determining the Affirmation Factor are discussed below and in the *Appendix*. The Affirmation Factor can change over the life of a transaction.

Probability of Default Uplift from Air Carrier IDR — Affirmation Potential

	Notch Adjustment Based on Affirmation Factor		
Rating Range	**Low**	**Med**	**High**
B+ and Lower	0–1	1–2	2–3
BB Category	0–1	1–2	2
BBB– and Higher	0	0-1	1

IDR – Issuer Default Rating
Source: Fitch Ratings

When we believe the likelihood of affirmation is high, up to three notches of ratings uplift can be provided in the strongest deals. The number of notches will vary based on the airline IDR. This reflects the diminishing marginal effect of default risk mitigation at higher rating levels of IDRs of 'BB' and above. In some cases, ratings derived from the bottom-up approach will serve as a floor on the senior tranche rating, and the subordinated tranche rating may be capped at one notch below the senior tranche rating, reflecting the subordinated tranches' lower level of OC and lack of power as a controlling party.

When affirmation of a pool of aircraft is considered less likely, the notching adjustment from the airline IDR is more limited. Still, the probability of default for junior tranches in this scenario remains lower than that of the airline, justifying a modest uplift, as shown in the table above.

Step 3 — Benefit of a Liquidity Facility

After determining the Affirmation Factor, Fitch will notch up an additional rating level for the benefit of a liquidity facility that covers at least 18 months of interest payments. Fitch may not assign the related one-notch uplift, due to a liquidity facility, to a senior subordinated tranche if the Affirmation Factor of the airline is low and the recovery prospects for the tranche is below 50%. In such a case, the likelihood of low recovery nullifies the benefits provided by the liquidity facility.

Step 4 — Recovery Analysis for Senior Subordinated Tranches

After notching the subordinated tranche ratings based on the Affirmation Factor and the benefit or lack of a liquidity facility, Fitch's analysis then incorporates a recovery component. The recovery analysis generally assumes all aircraft in the collateral pool are rejected by the airline and are repossessed and resold by the creditors. As is the case in the senior tranche methodology, the recovery analysis assumes a full draw on the liquidity facility and an estimated repossession or remarketing cost of 5%–10% of the collateral pool value.

Our recovery analysis for the subordinated tranches generally incorporates 'BB' level value stresses, which are commensurate with the value declines experienced in the 2001–2005 and 2008–2014 downturns. The application of a standard recovery stress across all rating levels is commensurate with the application of our corporate recovery methodology. Fitch will assign an additional one-notch uplift in cases where the expected recovery is 91% or higher on a sustainable basis after applying the 'BB' stresses, deducting the value of a full draw on the liquidity facility and an estimated repossession or remarketing cost of 5%–10% of the collateral pool value.

The 91% threshold is commensurate with Recovery Ratings of 'RR1' in Fitch's corporate recovery methodology. Expected recovery for subordinated tranches can vary greatly among transactions, depending on a number of factors, including the quality of the underlying collateral, the relative sizing of the various tranches in the transaction, the scheduled rate of principal amortization, in relation to expected depreciation, among other factors discussed in this criteria report.

Senior Subordinated B – Tranche Example (Issuer Rated BB)

Variable	Evaluation	Notching	Airline IDR	Affirmation Factor	Liquidity Facility	Recovery	Final Subordinated Tranche Rating
Affirmation Factor	High	+2	Notching	+2	+1	+1	+4
Liquidity Facility	18 Months	+1					
Recovery	Above 91%	+1		BBB+	BBB+	BBB+	BBB+
Final Notching from IDR		+4		BBB	BBB	BBB	BBB
				BBB–	BBB–	BBB–	BBB–
				BB+	BB+	BB+	BB+
			BB	BB	BB	BB	BB
				BB–	BB–	BB–	BB–

IDR – Issuer Default Rating.
Source: Fitch Ratings

Senior Subordinated B – Tranche Example (Issuer Rated B)

Variable	Evaluation	Notching	Airline IDR	Affirmation Factor	Liquidity Facility	Recovery	Final Subordinated Tranche Rating
Affirmation Factor	High	+3	Notching	+3	+1	+0	+4
Liquidity Facility	18 Months	+1					
Recovery	Below 91%	+0		BB+	BB+	BB+	BB+
Final Notching from IDR		+4		BB	BB	BB	BB
				BB–	BB–	BB–	BB–
				B+	B+	B+	B+
			B	B	B	B	B
				B–	B–	B–	B–

IDR – Issuer Default Rating.
Source: Fitch Ratings

The expected recovery for many recent EETC senior subordinated tranches (B tranches) featuring high-quality collateral tended to be 'RR1' to 'RR2' (71%–100%), with certain transactions exhibiting expected recovery rates at or above 100%. We believe this additional one-notch uplift for recovery is contingent upon other qualitative factors, such as the size and quality of the collateral pool, the amortization profile of the transaction, and the creditworthiness and size of an underlying airline. Even in cases where the expected subordinated tranche recovery is expected to be above 91% on a sustainable basis, Fitch may choose not to assign an additional one-notch uplift if the benefits of the expected recovery are offset by other qualitative weaknesses.

Step 5 — Recovery Analysis of Junior Subordinated Tranches

Although they are uncommon, some transactions may include a deeply subordinated tranche, or a D tranche in some existing transactions. Recovery prospects from the disposition of aircraft collateral for deeply subordinated tranches may be minimal due to a subordinated position behind several tranches. Fitch expects most junior subordinated tranches to be below 30%, which is commensurate with our 'RR5'/'RR6' recovery levels.

We will apply a one-notch downward adjustment to such junior subordinated tranches after taking into account the notching uplift provided by the affirmation factor. In certain cases where the expected junior subordinated tranche recovery reaches 'RR4' or 'RR3' (31%–50% or 51%–90%), Fitch will not apply a one-notch downward adjustment. Similar to senior subordinated tranches, if the recovery prospects of the junior subordinated tranches are above 91% on sustainable basis, we may apply a one-notch uplift for outstanding recovery prospects.

In the case of an airline's bankruptcy, subsequent rejection of the pool and disposition of the aircraft pool, the holders of EETC securities with less than 100% recovery will be treated as senior unsecured claim holders in the proceedings. Fitch expects junior subordinated tranche investors with the 'RR6' recovery prospects will receive recovery commensurate with those of other unsecured creditors.

Therefore, the underlying airlines' unsecured issue ratings will act as a floor for deeply subordinated tranches. Typically, Fitch will maintain a one-notch differential among various junior subordinated tranches to reflect the subordinated position in the waterfall. However, we may rate several deeply subordinated tranches at the same level if the floor conditions are met.

Junior Subordinated C – Tranche Example (Issuer Rated B)

Variable	Evaluation	Notching	Airline IDR	Affirmation Factor	Liquidity Facility	Recovery	Final Subordinated Tranche Rating
Affirmation Factor	High	+3	Notching	+3	+0	-1	+2
Liquidity Facility	None	+0					
Recovery	15%	-1		BB+	BB+	BB+	BB+
Final Notching from IDR		+2		BB	BB	BB	BB
				BB–	BB–	BB–	BB–
				B+	B+	B+	B+
			B	B	B	B	B
				B–	B–	B–	B–

IDR – Issuer Default Rating
Source: Fitch Ratings

Legal Protection for Creditors

While an airline bankruptcy filing does represent an indenture event of default, with respect to equipment notes held by the trust, the bankruptcy does not itself trigger a default for the trust certificates. Via Section 1110, the associated airline has 60 days to affirm its aircraft obligations and cure all past defaults or reject the aircraft and relinquish them to the trustee for disposition.

The airline may also attempt to negotiate an extension, although this scenario is typically not contemplated in the transaction documentation. In instances where the airline attempts to negotiate an extension, the controlling party of the EETC retains the right to repossess the aircraft after the 60-day period if the creditors are not agreeable to the airline's proposed terms. In all scenarios, creditors retain considerable leverage in the bankruptcy process and can pursue alternative recovery strategies prior to the expiration of the liquidity facility and the occurrence of a payment default on the EETC.

In the event the airline does not cure all defaults and elects to affirm its aircraft by continuing debt service in bankruptcy (Section 1110[a] election), bondholders retain the right to repossess and remarket the aircraft in the EETC pool. If restructuring airlines value the aircraft in the collateral pool as core elements of the fleet strategy, the carrier risks losing control of the aircraft if a Section 1110(a) election is not made within 60 days of the bankruptcy filing.

This accelerated timeline provides EETC holders, in particular, the senior tranche investors, with considerable flexibility to address the need to remarket and monetize aircraft with sufficient time to avoid default (i.e. the cessation of interest payments funded through the liquidity facility). The right of EETC holders to act where others would be subject to the automatic stay is a key credit advantage compared with typical corporate debt securities.

In practice, the leverage exercised by lenders on the bankrupt airline, supported by substantial case law and precedents in numerous U.S. airline bankruptcies, generally results in timely resolution of claims — either through quick affirmation of aircraft obligations and a cure of all defaults or through repossession and remarketing of aircraft collateral.

This example of affirmation highlights the lower probability of default for EETCs compared with most other creditors, from whom the air carrier remains protected during the restructuring. See the International Legal Considerations Applicability to Non-U.S. Structures section below for a discussion of potential legal frameworks for EETCs issued by airlines outside the U.S.

Transaction Document and Legal Opinion Review

EETC transaction documents specify key protections for creditors that may affect rating outcomes. Fitch analysts will review transaction documents and legal opinions when assigning new ratings to determine whether they reflect the transaction and its structure as represented to Fitch. To the extent that transaction documents are deemed inadequate or below industry standards, we may elect not to rate a transaction. Examples of protections to be covered include cross collateralization and cross default features, aircraft substitution rights, pre-payment provisions and rating agency communication requirements, among others.

Structural Enhancements and Default Risk Reduction

In addition to the legal framework, EETC holders benefit significantly from structural features of the securities that serve to reinforce the provisions of Section 1110 by reducing default risk and improving recovery prospects, especially for senior tranche holders. Specifically, EETCs include liquidity facilities, OC and cross-default provisions that usually allow the senior tranches of transactions to survive airline bankruptcies without incurring a payment default, as defined in EETC transaction documents.

Role of the Liquidity Facility

The inclusion of the liquidity facility, typically covering up to three consecutive semi-annual interest payments to EETC holders following an airline's failure to make timely interest or lease payments on aircraft, represents an additional source of default risk protection. Separate liquidity facilities are typically provided for the senior and senior subordinated tranches in EETCs.

In a case where the airline rejects its EETC aircraft obligations and the assets are remarketed, the liquidity facility term would generally be considered sufficient time for an orderly disposition of the assets. Creditors could benefit from some recovery in aircraft values from trough levels that might be seen at the time of the airline bankruptcy. A payment default on the EETC would not occur until a scheduled interest payment was missed. The existence of the liquidity facility provides a valuable extension of payments to holders that materially reduces the risk of default, relative to other corporate obligations.

Facility sizes may vary by transaction. In the U.S., liquidity facilities typically are sized to 18 months of interest coverage, a significant cushion over the 60-day collateral access period provided by Section 1110. In most cases, this additional liquidity coverage would provide creditors time to remarket and monetize aircraft following the 60-day affirmation or rejection period.

For transactions in other jurisdictions, facilities were significantly larger to account for potentially long reorganization processes. In certain non-U.S. jurisdictions where creditor rights regimes were not tested extensively, Fitch may regard the inclusion of a longer-term liquidity facility as a significant risk-mitigating factor with positive implications for transaction ratings. Typically, the liquidity facility can be drawn upon for several reasons, including insufficient funds to pay interest, a non-extension of a liquidity facility, or a downgrade of the liquidity provider's rating below the liquidity threshold rating.

If the liquidity facility is drawn, the provider generally has first priority on cash flows from the disposition of aircraft, until repaid. This right effectively subordinates even senior debt in an EETC, increasing the LTV ratio. This risk is considered in the quantitative evaluation of collateral coverage through the life of the transaction. In determining the liquidity provider's potential effect on EETC ratings, Fitch refers to its *Structured Finance and Covered Bonds Counterparty Rating Criteria*. Our counterparty criteria represent expectations for our rating analysis and are not requirements.

Fitch's EETC criteria incorporate one aspect that differs from the counterparty criteria in instances where the senior tranche is to be rated in the 'AA' category. The structured finance criteria report stipulates in cases where the senior most tranche is rated in the 'AA' category, the liquidity provider should maintain an IDR of at least 'A–'. For EETCs, the minimum liquidity provider rating is 'BBB', which is equivalent to the minimum counterparty rating required to support a rating in the 'A' category.

The only time during the life of the EETC that the liquidity facility provider would actually have to act (i.e. pay the interest on the notes) is in an instance when the airline was failing, in which case its corporate rating would be quite low, likely 'CCC' or lower. Fitch stipulates an airline should maintain a credit rating of at least 'B' to support an EETC rating in the 'AA' category. The airline's corporate credit rating will have driven the senior tranche ratings to be downgraded to below the 'AA' category prior to the time any missed payments would need to be covered by the liquidity facility. The 'AA' category counterparty threshold detailed in the counterparty criteria is not directly applicable for EETCs.

The documents of a typical EETC transaction contain a "threshold rating" for the liquidity provider, specifying a rating level at which a provider would need to be replaced or the subordination agent would make a "downgrade drawing" on the facility. Fitch may not necessarily take a rating action when a liquidity provider breaches the threshold ratings listed in transaction documents. If a liquidity provider is downgraded below the threshold rating, our corresponding rating action will depend on analysis of concurrent ratings of the outstanding notes supported by the liquidity facility, remaining maturity of the certificates and the ratings of underlying airline.

Payment In Kind Interest Feature

Fitch rated several private EETC transactions that incorporated a payment in kind (PIK) feature in which missed interest payments are converted to principal (PIK interest) in place of a standard liquidity facility. Even though PIK interest defers delinquent interest payments until the underlying aircraft are remarketed and monetized, Fitch views it as roughly equivalent to the credit protection provided by a typical liquidity facility for the senior tranche. We note the PIK feature is less favorable to creditors due to the cash flow implications during the deferred payment period. The inclusion of a PIK feature, in conjunction with other qualitative considerations, may negatively weigh on the senior tranche ratings outcome.

The PIK interest feature may slightly reduce recovery prospects for subordinated tranches in an EETC transaction. A typical EETC waterfall contemplates a priority of interest payments ahead of principal payments. The PIK feature shifts the priority of payments by converting interest payments to principal in the deferral period, resulting in potentially lower recovery prospects for the subordinated tranches.

We view PIK interest as slightly credit negative for the subordinated tranches and will analyze recovery prospects for these tranches accordingly. We generally consider a PIK feature to be qualitatively less favorable than cash servicing instruments. This qualitative perspective can result in lower ratings than would be achieved with more traditional structures that use liquidity facilities. In determining the PIK interest's potential effect on EETC ratings, we refer to our *Global Structured Finance Rating Criteria*. According to the criteria, we assign an 'A' rating cap to transactions in which payments may be deferred.

Excess Collateral Coverage

In the context of an EETC, OC can be measured as the value of the portfolio of aircraft above that of the outstanding debt. In Fitch's EETC analytical framework, the relevant aircraft values are the estimated current market value (CMV) and projected base values for aircraft of a particular model and build year. We evaluate the level of available OC on an ongoing basis to determine the level of protection provided over the life of the transaction. Significant unexpected changes in the value of an EETC aircraft portfolio at any time could have implications for Fitch's assessment of the portfolio's ability to withstand stresses and, in turn, on EETC issue ratings.

The basis for determining the level of OC on a transaction is the lowest expected OC level (i.e. highest LTV) over the life of an EETC. LTV calculations factor in a full drawing of the 18-month liquidity facility and estimated costs of aircraft repossession and remarketing in a scenario where aircraft are rejected by the bankrupt airline. These additional funding requirements result in higher LTVs than would otherwise be calculated on the basis of forecast pool values and amortization schedules alone.

Through scheduled amortization that occurs faster than the rate of portfolio depreciation, the level of OC tends to improve over time in most deals. This provides additional coverage for creditors at points when values of aging aircraft may be declining faster. EETC transactions are structured to provide significant OC to safeguard against declines in aircraft values through the life of the deal. Aircraft values are cyclical, reflecting swings in demand for assets in response to changes in economic growth rates, global air travel demand and the financial health of the world's airlines.

In the case of newer generation, fuel-efficient aircraft, value volatility is less of an issue for secured creditors and manufacturers. In most recent EETC transactions, aircraft pools are comprised of relatively new aircraft types with broad operator bases and good global demand fundamentals. The Tier Classification section below gives a more detailed rationale of Fitch's evaluation of aircraft models and value expectations through the cycle.

Cross-Default and Cross-Collateralization Provisions

In addition to the liquidity facility and OC, recently issued EETCs typically include cross-default provisions that should limit a bankrupt airline's ability to choose which aircraft financings and leases to retain or reject in Chapter 11. Since EETCs are structured as a collection of equipment notes issued by the airline to the trust, the cross-default mechanism creates a situation where an event of default on one aircraft mortgage obligation (the equipment note) triggers a cross-default on all underlying aircraft financings in a given pool, although not across other EETCs.

In early vintage EETCs, the absence of cross-default provisions made it easier for carriers to select which aircraft financings and leases to retain or reject in a reorganization. Certificate holders were subject to increased risk of an equipment note default and a potential shortfall post-rejection for a particular aircraft. Fitch views the cross-default provisions as a key source of support for EETC ratings, lowering the risk of a default on the security by incentivizing airlines to treat each such pool aircraft financing as a single transaction when deciding which transactions to honor under Section 1110(a). If most aircraft in a pool financing are considered essential to an airline's post-reorganization plan, the likelihood of the entire pool being rejected is lowered.

In cases where a large number of aircraft in a pool financing are not core to the airline's post-reorganization plan, the cross-default provisions may actually increase the likelihood the financing for the entire pool will be rejected, forcing holders to remarket a large block of aircraft. Fitch would only regard this as a significant negative rating factor in cases where the airline appears willing to discard some fleet types altogether in a reorganization. The cross-default feature is much less material in cases involving small or homogenous collateral pools in which all aircraft are similar.

Most recent EETC transactions include cross-collateralization provisions that provide further recovery support for certificate holders in a bankruptcy scenario. Should an airline default on an underlying equipment note or lease obligation, any excess proceeds from the disposition of the associated aircraft would be held for the benefit of holders of that particular EETC in support of recovery. In older deals, absent cross-collateralization, excess proceeds could be retained by the airline post-disposition.

Cross-collateralization is beneficial when a pool contains a diverse set of assets by providing extra protection to the certificate holders in a scenario of unexpected and significant value declines for one type of aircraft. In such an instance, the creditors will benefit from high OC of the rest of the pool, which will cover potential losses from the under-collateralized aircraft. The cross-collateralization feature is much less material for homogenous pools in which all assets would experience the same possible deterioration in a case of an unexpected adverse development.

We factor prospective cross-default and cross-collateralization effects into its analysis of collateral pool quality and the likelihood of retention of aircraft financings and leases in bankruptcy. However, Fitch notes the scarcity of relevant case law precedent on the enforceability of cross-default and cross-collateralization provisions, particularly in the airline bankruptcy context, and enforceability of such provisions in bankruptcy may be highly fact-specific.

We understand cross-default and cross-collateralization provisions are more likely to be upheld by a bankruptcy court if certain factors, taken together, support the position the financing of an aircraft pool was intended to be a single integrated transaction.

Fitch will consider the presence of the following factors in assessing the likelihood of cross-default and cross-collateralization provisions being enforced:

- The extent of integration between the underlying transaction documents. Explicit statements of intent to achieve a single, integrated financing, including cross-references and common recitals, between the operative documents for the equipment note financings and the EETC transaction documents would support enforceability of such provisions.
- The proximity of issuance of the EETCs to the underlying equipment note issuances. EETCs issued prior to or immediately in conjunction with the airline's financing of the various aircraft equipment, and references to specific aircraft as necessary security for the EETCs, support the position cross-default and cross-collateralization provisions were essential to the economics of the transactions.
- The proportion of aircraft subject to cross-collateralization and cross-defaults and the economic risk. To the extent the number of aircraft subject to cross-default and cross-collateralization provisions and the loan-to-aircraft value ratios are proportional to the expected economic risks of the transactions, such that there is no gross excess OC of aircraft assets, relative to the loans, such factors would support enforcement.
- The proportion of the airline's fleet subject to cross-default and cross-collateralization provisions. Where provisions subject a large portion of the fleet to cross-defaults or cross-collateralizations, a debtor may be more likely to challenge the cross-default or cross-collateralization provisions as infringing on its ability to reorganize.

We regard effective cross-default and cross-collateralization mechanisms as important components of the strongest pools and highest-rated transactions.

Other Legal and Structural Considerations

The pre-eminent position of senior tranche holders is supported further by the designation of the majority holder of senior tranche certificates as the controlling party in the event a Section 1110(a) election to affirm aircraft is not made. As the controlling party in such a scenario, the senior holders have the power to direct the trustee to pursue various remedies, some of which may come at a cost to investors in the subordinated debt classes.

For example, the controlling party could direct the sale of aircraft for well below current appraised values. This is taken into account in limiting the uplift of the 'B' tranches in the recovery analysis. There are some limits on the controlling party's ability to sell the aircraft for below appraised value. For example, in many transactions for the first nine months after a bankruptcy, the controlling party is not permitted to sell the aircraft for less than 75% of the most recent appraised current market value. As discussed elsewhere, the subordinated tranches generally have the right to buy out the senior tranches to become the controlling party.

Periodic Ratings Reviews and Ongoing Performance Analytics

Performance analysis of EETC transactions forms an essential part of Fitch's ongoing rating process. The subsequent ratings of existing EETC transactions can be affected by unexpected changes in the underlying aircraft valuations and IDRs of the underlying airline. Similarly, a downgrade of a liquidity facility provider below threshold rating, as specified in the transaction documents, may lead to a possible negative action by Fitch.

We perform a rating review in situations including but not limited to the following:

- A change in rating, excluding a change in the Rating Outlook, of the underlying airline;
- A significant and unexpected change in the values of the underlying aircraft that may change Fitch's view of the recovery prospects of the various tranches of a transaction;
- An amendment of transaction documents deemed to have a material effect on a transaction;
- A periodic review conducted at least every 12 months;
- A downgrade of a liquidity facility provider below threshold ratings as specified in Fitch's *Structured Finance and Covered Bonds Counterparty Rating Criteria*.

A rating committee review shall result in a rating action (i.e. an upgrade, downgrade or affirmation). Rating reviews for EETC transactions are consistent with the criteria described in this report. We will use up-to-date base aircraft values obtained from independent appraisers and will project expected performance of a transaction based on an amortization schedule specified at initiation of a transaction.

Aircraft Collateral Analysis

Key to the ratings process is a detailed analysis of the aircraft collateral and the level of expected OC for each EETC debt class through the life of the transaction. Collateral quality is the main differentiating factor in Fitch's evaluation of EETCs across numerous airlines and aircraft models. In general, we view aircraft as strong collateral given they are highly mobile and, in some respects, standardized. The well-established global aviation market further enhances aircraft collateral value. Even in the case of default, Fitch would expect higher than average recoveries compared with other asset classes, which is consistent with the EETC market's historical performance.

We view the value and liquidity of aircraft assets in the EETC pool, and the long-term importance in the airline obligor's fleet plan, as critical factors in evaluating the likelihood of affirmation and the eventual resale prospects of aircraft. Fitch applies a framework in which aircraft fleet types are grouped into three categories based on their operating characteristics and demand profiles through the economic cycle. Individual aircraft in the pool will be evaluated based on the specific profiles and features, including age, engine type and technical specifications.

A number of factors influence market demand and liquidity for aircraft models and, in turn, the values over the asset's life cycle. These factors include, but are not limited to, an aircraft's fuel efficiency, versatility, position within its life cycle, number of operators and aircraft in service, and the sustainability of future demand for the aircraft (i.e. order backlog and risk of obsolescence). The manufacturer's medium- to long-term outlook could also be a factor. Fitch reviews these and other demand drivers when evaluating each individual aircraft and groups the assets into one of three tiers, as described below.

Grouping aircraft into these categories gives us the ability to make meaningful assumptions as to how aircraft values will migrate over the life of the transaction. As the market for aircraft evolves, so do the tier classifications to accurately reflect market conditions. During ongoing reviews of EETCs, aircraft may migrate between tiers, which could affect OC calculations and ratings. Fitch regularly reviews and updates aircraft tier classifications and will publish them on our website at www.fitchratings.com.

Tier Classifications

The tier classifications represent general guidelines as to how Fitch would likely view projected value trends for specific aircraft in a pool. Based on characteristics of individual aircraft, we may apply different value stress and depreciation assumptions than those suggested by the general aircraft tier guidelines. Fitch will update its aircraft tier assumptions periodically. This information will be posted on www.fitchratings.com.

Tier 1: Most Liquid and Downturn-Resistant Aircraft

Tier 1 assets are those considered by Fitch to be the most marketable over the term of the transaction. Tier 1 aircraft are widely used and often considered the workhorse aircraft for many operators, as they are typically in production. Recently out-of-production, best-in-class aircraft with large fleets and operator bases may, however, remain Tier 1 aircraft until sufficient numbers of replacement technology aircraft enter the global fleet. Tier 1 aircraft are generally more technologically advanced, fuel-efficient aircraft, as fuel efficiency is paramount to most operators. In production, Tier 1 aircraft have little risk of major near-term value and lease rate weakness tied to a replacement program from its respective manufacturer.

Tier 2: Moderately Liquid and Marketable Aircraft

Tier 2 captures a large component of aircraft models on the current market. Assets grouped into this category typically have a significant existing fleet and a well-developed market. These aircraft may or may not currently be in production. However, if out of production, the end of the production cycle must be recent and replacement parts must still be manufactured and readily available. While these models may be at or toward the end of the production run, the existing asset and operator base is such that current demand could be maintained in the absence of new deliveries.

Tier 3: Least Liquid Aircraft

Tier 3 aircraft are generally out of production and have already-poor or weakening demand profiles. While some Tier 3 aircraft still have significant operator bases, the existing fleets are older and likely to face retirement in the near term. While opportunities exist in less developed markets for these aircraft, Fitch takes a negative view of the value retention of Tier 3 assets over the long term.

Tier Migration

In our analysis, we assume aircraft migrate into lower tier classifications as they age. For instance, an aircraft, such as the 737-800, considered a Tier 1 aircraft at delivery, will be considered a Tier 2 when it reaches 15 years of age. Tier migration assumptions are summarized in the table to the right.

For modeling purposes, Fitch does not assume aircraft tiers change overnight. Rather, when an aircraft reaches a certain age and moves from one tier to the next, we will gradually increase the corresponding value haircut in our stress analysis. The increase in stress rate generally occurs over two years, although Fitch may adjust the time period in certain circumstances, depending on the particular aircraft or the state of the market. This approach attempts to smooth out potentially large changes in LTVs observed in our stress analysis as aircraft migrate between tiers, and to more accurately reflect the value deterioration of older aircraft.

Fitch Tier Migration

Age (Years)	Tier 1	Tier 2	Tier 3
0 – <15	1	2	3
≥15 – <20	2	3	3
≥20	3	3	3

Source: Fitch Ratings

Quantitative Evaluation of Collateral Strength

In our ongoing surveillance of EETCs, we continually evaluate the level of OC available to each tranche. The level of protection Fitch assumes to be available over the life of a transaction depends on two primary factors: the expected market value of the portfolio and the amortization profile of the notes. Due to the cyclical nature of the airline industry, aircraft values can fluctuate significantly over time. This factor makes it imperative to continually assess the value of the portfolio of aircraft supporting an EETC. In its evaluation of EETC portfolios, Fitch seeks to obtain updated valuations for each aircraft in the portfolio. Available sources of valuations include the following:

Appraisals

Appraisals are aircraft-specific and may vary in the form they are provided and generally include the current market and base value of each aircraft, assuming the aircraft is in a certain condition. For most EETCs, full appraisals are generally only provided for the portfolio at closing.

Desktop Valuations

Generally provided in periodic publications by appraisal firms, desktop valuations are not aircraft specific. Instead, they provide the current market or base value for an aircraft model and model year (e.g. 2002 vintage A320-200). During periods of aviation market stress, Fitch may use additional sources of market value data to supplement desktop valuations. When using desktop valuations from more than one independent appraisal firm, we will generally use an average of valuations provided.

Fitch uses the valuations above, data from aircraft industry publications and internal forecasts to calculate the approximate value of each aircraft in a portfolio. For aircraft scheduled to be delivered at a future date, we will adjust the current base value of the aircraft to account for price escalations; i.e. the purchase price of an aircraft is not a fixed dollar amount but is generally based on a price at a reference date and then escalated for various factors through the date of delivery.

Actual pricing terms are kept confidential between the airline and the manufacturer but Fitch uses a conservative assumption of 2% annual price escalation. Aircraft values are then depreciated over the remaining life of the transaction. Depreciation assumptions are scaled based on each aircraft's age, characteristics, and assumed marketability (measured by tier) and liquidity. The assumed depreciated aggregate portfolio value for each period over the remaining life of the transaction is finally compared to the debt level outstanding at the same period to determine the level of protection provided by OC, measured by the LTV ratio.

A full drawing of the liquidity facility, which must be covered first to meet post-bankruptcy interest payments, and assumed costs of repossession and remarketing of assets must be added to the outstanding debt balance to calculate the true LTV in a rejection scenario. Repossession and remarketing costs include storage, maintenance, insurance and brokerage costs incurred after the airline rejects pool aircraft. Fitch generally assumes these costs will total between 5% and 10% of aircraft market values but this factor may vary according to fleet type and the assumed length of the remarketing period.

Depreciation Assumptions

Depreciation rates for pool aircraft are critical in determining future asset values. Fitch employs tier-specific depreciation curves with annual percentage value declines that increase gradually over the expected life of the aircraft. We generally assume a 25-year useful life for aircraft in EETC pools.

As seen in the table at the right, depreciation rates vary by aircraft value tier. For newer generation Tier 1 models with solid demand fundamentals, value declines in the early years of the aircraft's life are lower than those seen in Tier 2 and Tier 3 aircraft. In later years, depreciation rates across tiers tend to converge. Depreciation assumptions employed by Fitch will vary according to the age and operating characteristics of specific aircraft. Should an EETC transaction be secured by assets that exhibit historical depreciation trends outside of those captured in the table at the right, Fitch may apply different depreciation assumptions.

Yoy Base Aircraft Depreciation Rate Assumptions

(%)	Tier 1	Tier 2	Tier 3
0 – <10	6	7	8
≥10 – <15	7	8	9
≥15 – <20	—	9	10
≥20	—	—	11

Note: Values in the table refer to an aircraft's current tier. Fitch considers aircraft over 15 years of age to be at best Tier 2 assets. Aircraft over 20 years of age are considered Tier 3.
Source: Fitch Ratings

Amortization Schedule

EETC debt amortization profiles are dictated by schedules set at the time of issuance and can vary significantly depending on the cash flow profile and financing requirements of the affiliated airline. Certain EETC tranches may amortize nominally with large bullet payments upon maturity, while others may amortize more steadily. Since the pool of aircraft supporting payments is continually depreciating over the life of a transaction, the amortization profile of EETC tranches is important to Fitch's determination of the ultimate rating. If collateral values deteriorate faster than debt pays down, the amount of available OC will decline. Significant declines in OC make losses more likely in an asset liquidation scenario. As such, Fitch reviews the anticipated levels of available OC over the remaining life of the transaction that will be available in the event of liquidation.

Enhanced Equipment Trust Certificates Model

Our EETC model uses appraised values for collateral aircraft models and our depreciation assumptions to calculate base scenario LTV ratios and break-even points over the life of the transaction. The model then calculates stressed LTVs using various value stresses described elsewhere in this criteria report. Stress scenario LTVs are a primary consideration in assigning ratings to EETC transactions. Stress scenario LTV ratios are used primarily to rate the senior tranches but also represent a secondary input into the ratings of subordinated tranches.

Rating Change Scenarios and Bankruptcy Filings

Given EETC cash flows are directly linked to a single airline's ability to make loan or lease payments on financed aircraft, some degree of ratings linkage with the carrier's corporate IDR is essential, primarily on subordinated tranches, although a bankruptcy filing itself does not represent an event of default for the EETC. As seen in the senior tranche ratings process, the airline IDR has a less direct effect on the default ratings of senior classes. The true default risk of senior classes depends much more on collateral and the likelihood of affirmation in the bankruptcy restructuring.

A bankruptcy filing would not necessarily trigger a downgrade of the senior tranche rating if Fitch continues to believe the likelihood of affirmation is high and collateral coverage for senior tranche debt is strong. We could put the ratings on Rating Watch Negative (RWN) for the 60-day period ahead of the Section 1110 election.

Senior tranche ratings for well collateralized and well-structured transactions could retain the pre-filing ratings through an airline's reorganization. Fitch will likely place the ratings on RWN and will likely affirm the ratings once aircraft are affirmed under Section 1110(a). Rejection of the aircraft could lead to downgrades but the actual ratings actions will depend on aircraft market values and our assessment of selling the aircraft prior to a missed interest payment or final legal maturity. Fitch expects senior tranches with Tier 1 aircraft and low LTVs will have less volatile ratings than those of the associated airline.

Subordinated Tranches

Subordinated tranche ratings, which are explicitly linked with the airline default rating, would change in lockstep with the carrier's IDR. If the airline entered bankruptcy/administration and the IDR changed to 'D', the EETC 'B' tranches would most likely be rated in the 'CCC' category, the EETC 'C' tranches would be in the 'CC' or 'C' categories. If the aircraft are rejected, in most cases, notching based on affirmation will no longer be applied and Fitch will rate the subordinate tranches in accordance with our *Corporates Recovery Ratings and Instrument Ratings Criteria*, effectively capping the ratings at 'CCC'.

In cases where we believe the likelihood of the subordinated tranches avoiding default is sufficiently high, the tranches could be rated similar to affirmed tranches, as discussed below. The recovery analysis will be driven mainly by the worst-case scenario of aircraft repossession. This is somewhat consistent with the approach taken for the 'A' tranches, with recovery estimates based on estimated proceeds to the subordinate tranches from a sale of the aircraft collateral after drawing the liquidity facilities and accounting for other costs. Cash flows from potential renegotiations of the financing contracts will be analyzed. Buyout rights and the preferred interest waterfall will be considered.

Forecasting renegotiated cash flows could be difficult and uncertain if the renegotiated terms are short term, which Fitch believes will be the case in many renegotiations, while the airline is in bankruptcy. If the aircraft in the EETCs are affirmed, we will analyze the likelihood of the affirmation staying in effect and the possibility of the bankruptcy moving into liquidation. If Fitch concludes the affirmation will likely stay in effect and the possibility of liquidation is low, we will upgrade the affirmed EETC 'B' tranche into the 'B' rating category and the affirmed EETC 'C' tranche into the 'CCC' category.

The ratings would reflect full payment of scheduled interest and principal amortization post affirmation, offset by the inherent uncertainty of the bankruptcy process and a continued chance the airline could subsequently reject the aircraft. If the airline does subsequently reject the aircraft, the subordinated ratings would likely be downgraded and rated as described above. Upon emergence from bankruptcy and the establishment of new ratings for the airline, the EETC will be rerated in accordance with Fitch's EETC criteria.

International Legal Considerations — Applicability to Non-U.S. Structures

While EETCs are an established funding source for U.S. airlines, reflecting extensive legal protection offered by Section 1110, the structure is now being used more widely in international markets. High numbers of future aircraft deliveries to non-U.S. carriers likely will lead non-U.S. borrowers to continue pursuing EETC financing. Fitch evaluates EETC issuance outside the U.S. on a case-by-case basis, focusing on the relative strength of the legal framework of relevant foreign jurisdictions.

The framework for rating EETCs outlined in this document may be applied in foreign jurisdictions that have an insolvency regime pursuant to which creditors are able to repossess aircraft in a timely fashion. The Cape Town Convention on International Interests in Mobile Equipment and the related Aircraft Equipment Protocol (the treaty), discussed below, are highly relevant to this inquiry. Our EETC rating approach rests largely on creditors' ability to quickly repossess and deregister aircraft, and the influence this has on airlines' incentive to affirm aircraft in bankruptcy. In the absence of this ability, Fitch will adjust its methodology on a case-by-case basis. In the extreme we could decide the firm's standard corporate rating and recovery methodologies apply instead of the EETC approach.

Fitch's approach to rating potential non-U.S. EETCs can be divided into several steps: 1) evaluation of the legal framework of the relevant foreign jurisdiction(s) to determine whether the EETC criteria can be applied; 2) analysis of jurisdictional risk to determine if a ratings adjustment from the core EETC criteria is needed; 3) analysis of structural features that might mitigate certain jurisdictional risks; and 4) consideration of any other aspects of the transaction, such as the applicability of a Country Ceiling.

Legal Framework

Before beginning the analysis of a proposed EETC transaction, Fitch's credit analysts and legal staff will evaluate the proposed legal framework to determine whether our EETC criteria can be applied. The focus of this evaluation will be whether or not the collateral is registered in a jurisdiction with an insolvency regime similar to Section 1110. Specifically, what is the likelihood creditors will be able to repossess aircraft, deregistering and flying the aircraft out of the country in a timely fashion.

Our determination of the reliability of the relevant insolvency regime in protecting creditors' rights will be based on our review of the legal framework, legal opinions received from transaction counsel, and other third-party views such as the World Bank; the Organization for Economic Co-Operation and Development (OECD), which has a list of countries eligible for export credit discounts based on the treaty, and the Aviation Working Group. When looking at a potential EETC in a country for the first time, Fitch will consider engaging outside counsel to aid in the legal analysis. We note the legal analysis for initial transactions in new jurisdictions can be more time-consuming than for repeat transactions and market participants should take this into account when planning for potential EETC issuances.

We generally consider aircraft-specific insolvency legislation, such as the treaty, to be more supportive of EETCs than general insolvency regimes, assuming well-established respect for rule of law as a constant. Common law jurisdictions, with ability to incorporate self-help into contracts, are generally preferred by Fitch over civil code countries, where the lack of self-help has the potential to lengthen the repossession process. A track record of experience by courts and jurists of a country is a consideration.

Legal precedents, or the lack thereof, may affect our ability to rate a transaction or to assign a particular rating level. In cases where we view a country's aircraft-specific legislation to be more supportive than the local general insolvency regime, Fitch's *Country-Specific Treatment of Recovery Ratings Criteria* will not be directly applicable to EETC ratings. If we determine the legal framework does not support the application of our EETC criteria, we will either not rate the transaction or will rate it using our standard rating and recovery methodologies.

Cape Town Convention

The Cape Town Convention went into effect on March 1, 2006. It establishes an international legal framework to facilitate financing of mobile equipment, including aircraft, and it established an international registry for international interests in aircraft. The convention is similar in many respects to Section 1110, although it is broader in scope in some respects, and narrower in others. The treaty was ratified by more than 50 countries, including the U.S., China, India, Russia and EU members, and affected the aircraft finance industry, with export credit agencies granting a fee discount to borrowers in countries that ratified the treaty and made certain declarations.

While similar to Section 1110, several issues related to the treaty may need to be analyzed before Fitch will have comfort applying its full EETC methodology to transactions relying on the treaty. There are optional declarations in the ratification process, so the treaty can vary by country. We will focus on which declarations were made, including Alternative A, in evaluating our applicability in the rating process. While most countries ratified the treaty in the recommended manner, some have not, which could cause delays for creditors in airline bankruptcies.

While the treaty was tested in court in certain jurisdictions, its application was not tested in all ratifying countries. The OECD list, which includes treaty signatories that ratified the treaty in the most favorable manner and are, therefore, eligible for the maximum export credit fee discount, is one outside source Fitch looks to for supportive guidance in evaluating the strength of treaty ratification.

Non-Cape Town Convention Legal Frameworks

Some other legal frameworks may support the EETC structure in the absence of Section 1110 or the treaty if the legal framework has the same practical effect as Section 1110 or the treaty. Under these frameworks, bankruptcy or administration would not necessarily result in a default on the certificates, and if the airline rejected the aircraft or did not pay the required debt or lease payments, the certificate holders would be able to repossess and deregister the aircraft in a timely manner. Such legal regimes are likely to be very supportive of creditor rights and considered highly reliable by the credit markets.

Structural features, such as using leases rather than standard equipment notes, might be a material aspect of transactions under these legal frameworks. Fitch will analyze other legal frameworks on a case-by-case basis, and, in general, we expect EETCs using other legal frameworks will require more extensive legal analysis than more standard Section 1110 and treaty transactions.

Legal Jurisdiction Analysis

Analysis of the issuer's legal jurisdiction will be another key factor in our ratings process for EETCs. Jurisdictional risk considerations include reliability of the legal system, confidence in the country's bureaucracy to enforce the legal framework, existence of legal precedent, and political factors. Any of these factors could affect the degree of our confidence in the ability of lenders to repossess the aircraft, deregister the aircraft, and fly the aircraft out of the country if the airline rejects the aircraft after entering administration.

In evaluating jurisdictional risks Fitch will review legal opinions submitted by transaction parties, discuss risks with outside counsel, rely on the firm's experience in the relevant jurisdiction from other transactions, review the rationale behind our relevant sovereign rating and look to outside sources of information such as the World Bank's governance indicators. In some cases, EETC ratings could be capped or notched down due to enforceability or reliability concerns. It is also possible that perceived weaknesses could disqualify a transaction from treatment under Fitch's EETC criteria.

We believe jurisdictional risk will often be the main differentiator between emerging market and developed market EETC transactions. Most other aspects of a transaction would be similar (aircraft, LTVs, liquidity provider, structure, documentation, etc.), and even the legal framework, as opposed to the legal jurisdiction, will be the same or similar.

Mitigating Structural Features

If Fitch determines the EETC ratings need to be notched for jurisdictional risk, especially for the senior tranche, there could be mitigants to reduce or eliminate the notching. A longer liquidity facility could provide creditors more time to repossess and remarket the aircraft. Third-party guarantees are another possibility. Basing the transaction on leases rather than mortgages could serve as a slight mitigant since the certificate holders have an ownership stake in the collateral, so they will likely have better access to the assets in most jurisdictions. Lower LTVs could also serve as a risk mitigant.

Country Ceiling

An additional rating consideration Fitch will address in rating some EETCs is the Country Ceiling. This reflects our judgment regarding the risk of capital and exchange controls being imposed by sovereign authorities that would prevent or materially impede the private sector's ability to convert local currency into foreign currency and transfer to nonresident creditors, also known as transfer and convertibility (T&C) risk. As such, they are not ratings, but expressions of a maximum limit for the foreign currency issuer ratings of most, but not all, issuers in a given country.

Based on Fitch's existing criteria in Structured Finance and Corporate Finance, and the nature of the EETC structure and its collateral, it would be possible for the senior tranche rating to pierce the Country Ceiling if there were a structure in place to mitigate T&C risk, such as an offshore liquidity facility from a highly rated international bank or an offshore reserve account. There would likely be a cap on the number of notches Fitch could rate above the ceiling. The tranche ratings would also be determined by other credit issues in addition to T&C risk, such as the application of the treaty and legal jurisdiction, and these and the other credit issues evaluated in rating EETCs could conceivably bring the tranche rating back below the Country Ceiling.

Credit Enhancements Other than EETC Treatment

If Fitch determines the legal framework or jurisdiction does not support the application of its EETC criteria, we could rate the transaction using our standard rating and recovery methodologies, with some possible credit enhancements based on a transaction's structural features. In such cases the level of ratings uplift from the underlying corporate rating would not be as great as under the EETC criteria. Possible credit enhancements could include structural features, such as a liquidity facility, lease features, collateral type and documentation features such as events of default.

Non-U.S. Dollar-Denominated Transactions

Non-U.S. dollar-denominated EETC transactions present a challenge in applying our criteria due to significant FX risk introduced by a mismatch between the liabilities, the non-U.S. dollar-denominated certificates, and the underlying assets, the U.S. dollar-denominated aircraft secondary market. FX risk will arise only in the case of an airline's insolvency and its consequent rejection of the aircraft supporting the EETC transaction.

Under this scenario, the non-U.S. dollar-denominated certificates will rely on the market value of the aircraft that will be disposed of in the U.S. dollar-denominated secondary aircraft market, creating a potentially large exposure to the exchange rate predominant at the time. The FX exposure would have a negative effect on a transaction only if FX rates move against the certificates, e.g. the U.S. dollar weakens compared with the spot rate of the currency of the certificates at inception of the transaction.

Even though the probability of all the above events occurring simultaneously is low, Fitch will only be able to apply its EETC methodology to non-U.S. dollar-denominated transactions without any modifications if FX risk is fully hedged or if an export credit agency or other qualified guarantor provides an exchange rate guarantee.

We will analyze derivative instruments used to provide a full hedge and will address the counterparty exposure by relying on our *Structured Finance and Covered Bonds Counterparty Rating Criteria*. Similarly, ratings of a transaction backed by a guarantee of an export credit agency will be capped by, and linked to, Fitch's ongoing view of the guarantor's creditworthiness. If the structure of an EETC transaction does not address FX risk, we will either not rate the transaction or will rate it using our standard corporate rating and recovery methodologies.

Criteria Limitations

Ratings assigned by Fitch are subject to the limitations specified in our *Ratings Definitions*.

Data Sources

The following data were used in the development of the criteria assumptions:

- Historical aircraft value data provided by various aircraft appraisers;
- Analytical discussions with external parties such as issuers, institutional owners and underwriters;
- Historical behavior of aircraft fleets through downturns derived from data from the Ascend database;
- Repossession history provided by various ABS transaction servicers.

Criteria Application

Fitch bases its rating analysis on a review of all relevant information from the sources mentioned above and from information made available to us by the originator. Fitch expects to receive transaction documents, appraisals and legal opinions from the originator. We also obtain third-party aircraft appraisals from one or more independent appraisal firms and may also request more detailed information as necessary to conduct the rating analysis.

Rating Assumption Sensitivity

Fitch's new issue rating analysis also provides various rating sensitivities to demonstrate how the ratings would react to stress scenarios other than those assumed at issuance. The implied rating sensitivities are only indicative of some of the potential outcomes and do not consider other risk factors to which the transaction is exposed or that are considered during the surveillance process.

Senior tranche ratings are based on the value of the collateral. An unexpected significant change in collateral values will result in changes in stressed LTV values, which could, in turn, lead to a positive rating action if a senior tranche passes higher stresses compared with the outstanding ratings or negative rating actions if a senior tranche fails to pass stresses associated with the outstanding rating.

Ratings of subordinated tranches are influenced by Fitch's view of the issuer's corporate credit profile. We will consider either a negative or a positive rating action if the sponsoring airline's credit profile changes, in our view. Additionally, the ratings of the subordinated tranche may be changed if the recovery prospects change significantly due to an unexpected change in collateral values. The ratings of senior and subordinated tranches supported by a liquidity facility may be downgraded if Fitch believes there is a high likelihood the remarketing period will be longer than initially anticipated, which is usually 18 months.

Variations from Criteria

Our 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 to transactions 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 additional possible risks. Such adjustments are called variations. All variations will be disclosed in the respective rating action commentaries, including their effect 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 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.

Criteria Disclosures

In the initial rating report or rating agency commentary, Fitch expects to disclose the following items:

- Application of a rating cap other than 'AA+' and rationale.
- Application of either our top-down or bottom-up methodology for individual tranches of debt.
- Aircraft value stress rates.
- Summary of primary rating scenario and results.
- Fitch's assessment of the affirmation factor for the underlying collateral pool.
- Rating sensitivities.

Any variations to criteria will be detailed in Fitch's transaction rating reports, as mentioned previously in the Variations from Criteria section. In many cases, we use the assumptions derived in our initial rating analysis in our surveillance reviews. To focus Fitch's Rating Action Commentaries on the most important changes to the rating, we will not disclose these assumptions in subsequent rating action commentaries unless there is a material change to the assumption.

Appendix A: Affirmation Factor

Affirmation Factor

	Sub-Tranche Notching from Airline IDR										
	BBB– or Above	BB Category	B+ or Lower	Relevance to Fleet Strategy	Aircraft Tier	Relative Age of Collateral	Relative Pool Size	Cost of Funding	Div.	Availability of Substitutes	Cross-Default Provisions
High	+1	+2	+2–3	• Core to the airline's fleet. • Order book contains more aircraft of the same type as the collateral (i.e. indication of the airline's preference for a certain aircraft. • Lack of available substitute aircraft within the fleet. • Ideally suited for use on key profitable routes.	• Predominantly Tier 1 aircraft. • Highly innovative/ fuel efficient aircraft. • Exceptional liquidity. • Strong demand, low supply.	• Significantly younger than the airline's fleet as a whole. • New delivery.	• More than about 5% of the total fleet. • Number of aircraft greater than around 20. • Pool comprises a significant portion of a specific aircraft type within the fleet.	• Below average compared with the airline's other aircraft debt. • Below market rates.	• Multiple aircraft types.	• Pool includes aircraft which offer unique features (docs, and number of seats or range). • No substitute aircraft expected to come to market in the near term.	• Cross-default provisions from day one, fully integrated transaction. • EETCs issued in close proximity with notes.
Med	0–1	+1–2	+1–2	• Strategically important to the fleet. • Order book may or may not include substitute aircraft types in the intermediate to long term. • Some availability of substitute aircraft.	• Combination of Tier 1 and Tier 2 aircraft. • Average fuel efficiency compared with alternatives. • Average liquidity.	• Comparable to the airline's fleet as a whole. • Midlife aircraft.	• Around 2%–5% of the total fleet. • Number of aircraft greater than around 10. • Pool comprises a moderate portion of a specific aircraft type within the fleet.	• In line with the airline's other aircraft debt. • At market rates.	• Two aircraft types.	• Substitute aircraft expected but available docs in a majority of the life.	• Cross-default provisions from integration and/or proximity of issuance less favorable than some transactions.
Low to Med	0	+0–1	+0–1	• Misaligned with airline's fleet plan. • Order book includes substitute aircraft types in the near term. • Not well suited for key routes.	• Predominantly Tier 2 and/or Tier 3 aircraft. • Relatively fuel inefficient/ obsolete aircraft. • Large aircraft type.	• Older than number of parked aircraft.	• Less than the airline's fleet as a whole. • Older life aircraft.	• More than 2% of the total fleet. • Number of aircraft less than about 10.	• Single comprise a portion of specific aircraft types, easily replaced.	• Average aircraft type within the fleet.	• Cross-default more costly than the airline's other aircraft debt. • Above-market rates.

IDR – Issuer Default Rating. Div. – Diversification. EETC – Enhanced equipment trust certificates.
Source: Fitch Ratings

Affirmation Factor

Other Considerations Include:
• Whether the aircraft are leased or owned.
• The state of aircraft market values.
• Drivers of the airline's bankruptcy.
• The maturity schedule of the enhanced equipment trust certificates.
• The size of the airline.

Source: Fitch Ratings

Appendix B: Aircraft Engines and Spare Parts

Transactions backed by engines are covered under this criteria report. While engines share many similarities to the aircraft they support, there are different considerations for projecting periodic and terminal cash flow and certain adjustments must be made to take these differences into account. This section discusses some primary differences between engines and aircraft and how Fitch adjusts the operating lease aircraft methodology to compensate for those differences.

Value Retention

Commercial aircraft engines have historically proven their ability to retain and even gain value over long periods. Driving this ability are maintenance procedures and the components of the engines. Replaceable parts, particularly life-limited parts (LLPs), make up much of the value in an engine. As these parts wear down from use, the engine's value declines. When LLPs are replaced through maintenance procedures, the engine value increases.

Thus, the maintenance status of the engine becomes more important than the age of the engine in determining the engine's value. In the majority of operating leases, maintenance expense is the obligation of the lessee. In addition to the maintenance status, the value of an engine is driven primarily by demand for the aircraft that engine propels, which in turn depends on the former's position in its production run. We call this concept 'phases'. For cash flow modeling purposes, engine phases are the equivalent of tiers for aircraft.

Annualized Base Depreciation Rate Assumptions — Engine

(%)	Phase 1	Phase 2	Phase 3
	0.0	5.0	10.0

Source: Fitch Ratings

Longer Useful Life

As a result of an engine's ability to regenerate through maintenance procedures, usable life can be considerably longer than its aircraft counterpart. In fact, the most significant limit to an engine's life is obsolescence. This limit comes in the form of newer technology which occurs in the course of development of more advanced replacement engines and, usually concurrently, aircraft models. Asset life is thus predicated on the remaining time in the supported aircraft's production run. Due to the engine's extended life, it often accounts for the majority of aircraft value at the end of an airframe's life.

To determine asset values in stress scenarios for engines, Fitch employs the same model used for evaluating pools of aircraft. Similar to the methodology for aircraft, Fitch will incorporate different depreciation and market value decline assumptions for each engine type in the portfolio. The initial assumed engine values are depreciated monthly, depending on where the engine is in the production cycle and, consequently, how many years remain in the engine's leasable life.

Engine Phases

Fitch divides value assumptions into three phases of an engine's production cycle, as per the tables aside. Engines are assumed to be in Phase 1 until the aircraft on which the engine is being used reaches the end of its production cycle. During Phase 1, Fitch generally assumes no base depreciation on the engine but the engines are still exposed to market value declines.

Market Value Decline Target Assumptions — Engine

(%)	Phase 1	Phase 2	Phase 3
Asf	10.0	15.0	25.0
BBBsf	7.5	12.5	22.5
BBsf	5.0	10.0	20.0

Note: Notch-specific stresses are interpolated between the assumptions applicable to adjacent rating categories. At 'CCCsf' there is no stress.
Source: Fitch Ratings

Phase 2 is characterized by the fragmentation of the operator base for the supported aircraft. During this phase, spare engines may or may not continue to be produced to support demand from the increase in operators. The length of Phase 2 can vary from a few years to 10 years depending on characteristics of the market for the supported aircraft. In such cases, Fitch's assumptions regarding the depreciation and length of this phase will vary.

Phase 3 marks the rapid deterioration in engine value as the aircraft supported by the engines begin to be retired in large numbers, and market demand for the engine deteriorates. During Phase 3, Fitch assumes significant value deterioration, consistent with assumptions for aircraft in the final years of the assumed useful life. The length of this phase can vary and for some engines may last up to 15 years. We will disclose the phase migration for the securitized portfolio in our transaction reporting.

Interchangeability and Mobility

Another difference between aircraft and engines is the relatively better mobility of engines and the multiple-airframe applicability. Since engines can often be used on multiple aircraft frames, certain engines' susceptibility to problems with specific aircraft can be limited. If the primary airframe supported by an engine is no longer manufactured, it may still be used on an in-production aircraft model, which could extend the engine's useful life.

Aircraft Spare Parts

Much like aircraft and engines, spare parts benefit from special bankruptcy treatment afforded under Section 1110, and have been used in EETC transactions in the past. Unlike aircraft, spare parts will not necessarily experience steady depreciation as the underlying value largely rests on the production status of the underlying aircraft. Value may be continually restored as the airline refreshes and maintains its inventory of spare parts. Affirmation Factor for transactions secured by an airline's spare parts inventory are likely to benefit from a high Affirmation Factor, as the loss of access to spare parts would effectively ground the airline due to strict maintenance requirements in place from regulators.

Unlike aircraft and engines, Fitch does not have a robust dataset of historical market value declines or depreciation rates of aircraft spare parts. The absence of a historical dataset necessitates that, treatment of such assets in Fitch's analysis will rely on information from third-party appraisers, and specific assumptions will be included in public press releases when the transactions are rated.

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