

MOODY'S

INVESTORS SERVICE

RATING METHODOLOGY

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Rating Methodology Passenger Airlines

This rating methodology replaces the *Passenger Airline Industry* methodology published in April 2018. We have reordered and have made editorial updates to various sections of the methodology, and we have changed the presentation of the scorecard. We have removed outdated information. These updates do not change our methodological approach.

Scope

This methodology applies to companies globally that are primarily* engaged in providing air transportation services for passengers.

Companies that are primarily engaged in freight transportation are covered under our methodology for surface transportation and logistics companies.¹

*The determination of a company's primary business is generally based on the preponderance of the company's business risks, which are usually proportionate to the company's revenues, earnings and cash flows.

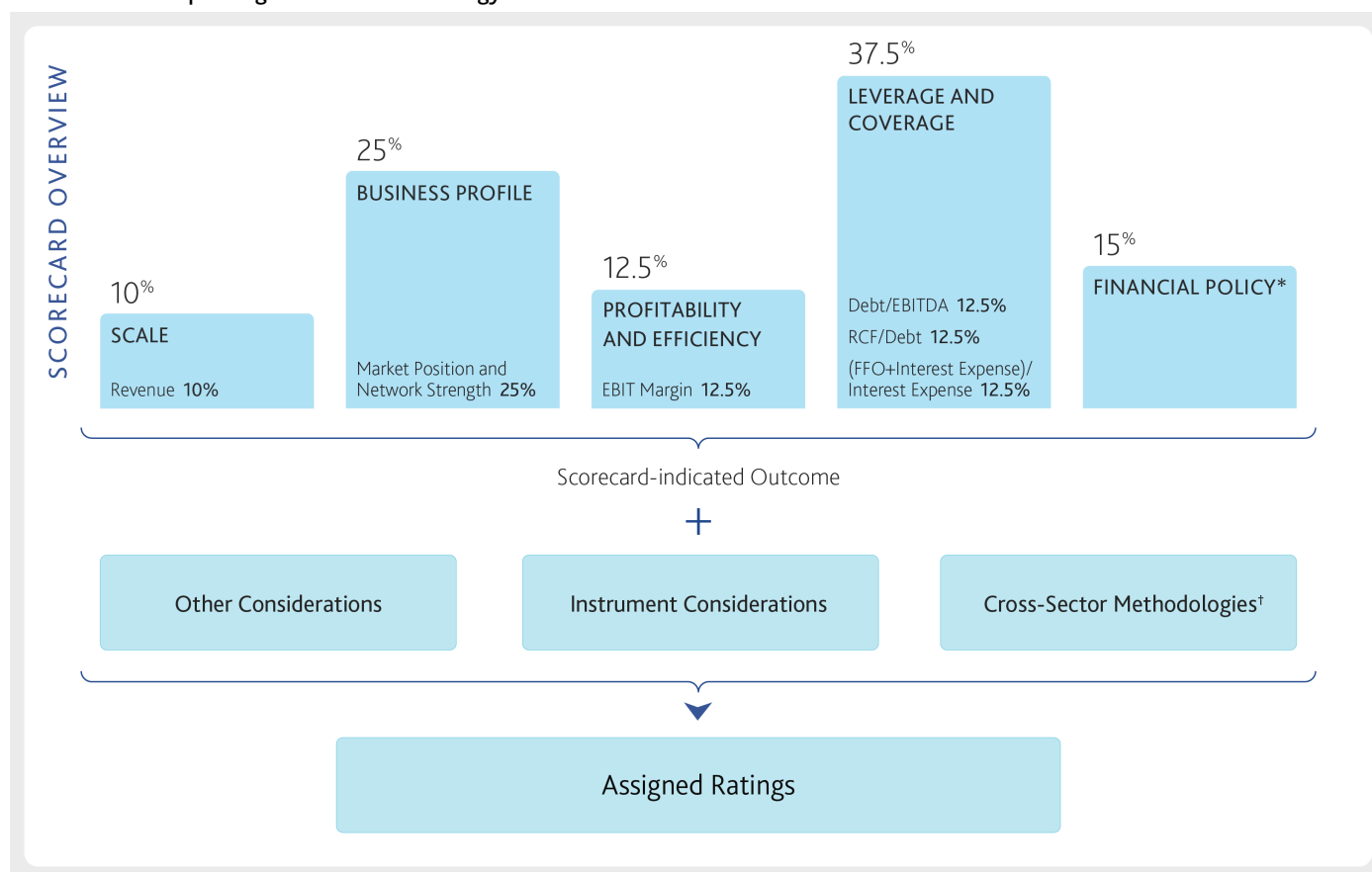
Rating approach

In this rating methodology, we explain our general approach to assessing credit risk of issuers in the passenger airline industry globally, including the qualitative and quantitative factors that are likely to affect rating outcomes in this sector. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

The following schematic illustrates our general framework for the analysis of passenger airline companies, which includes the use of a scorecard.² The scorecard-indicated outcome is not expected to match the actual rating for each company. For more information, see the "Other considerations" and "Limitations" sections.

Exhibit 1

Illustration of the passenger airlines methodology framework



* This factor has no sub-factors.

† Some of the methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

Source: Moody's Investors Service

Passenger airlines scorecard

For general information about how we use the scorecard and for a discussion of scorecard mechanics, please see the "Using the scorecard to arrive at a scorecard-indicated outcome" section. The scorecard does not include or address every factor that a rating committee may consider in assigning ratings in this sector. Please see the "Other considerations" and "Limitations" sections.

Exhibit 2

Passenger airlines scorecard

SCALE (10%)		BUSINESS PROFILE (25%)	PROFITABILITY and EFFICIENCY (12.5%)	LEVERAGE and COVERAGE (37.5%)		FINANCIAL POLICY (15%)	
Revenue (USD Billion) ^[1] (10%)	Market Position and Network Strength (25%)		EBIT Margin (EBIT / Revenue) ^[2] (12.5%)	Debt / EBITDA ^[3] (12.5%)	RCF / Debt ^[4] (12.5%)	(FFO + Interest Expense) / Interest Expense ^[5] (12.5%)	Financial Policy (15%)
Aaa	≥ \$75	Unparalleled and sustainable market position supported by an extremely large and well-diversified network, with revenue spread across an extremely large number of countries or regions and no concentration in any one country or region; and extremely strong ability to sustain revenue and earnings through the economic cycle.	≥ 40%	≤ 0.5x	≥ 60%	≥ 20x	Expected to have extremely conservative financial policies (including risk and liquidity management); very stable metrics; essentially no event risk that would cause a rating transition; and public commitment to a very strong credit profile over the long term.
Aa	\$55 - \$75	Extremely strong and sustainable market position supported by a very large and well-diversified network, with revenue spread across a very large number of countries or regions and a very low degree of concentration in any one country or region; and very strong ability to sustain revenue and earnings during global and regional economic downturns.	30% - 40%	0.5x - 1x	45% - 60%	15x - 20x	Expected to have very conservative financial policies (including risk and liquidity management); stable metrics; minimal event risk that would cause a rating transition; and public commitment to a strong credit profile over the long term.
A	\$35 - \$55	Very strong and sustainable market position supported by a large and well-diversified network, with revenue spread across a large number of countries or regions and a low degree of concentration in any one country or region; strong ability to sustain revenue and earnings during global and regional economic downturns.	20% - 30%	1x - 2x	35% - 45%	10x - 15x	Expected to have predictable financial policies (including risk and liquidity management) that preserve creditor interests; although modest event risk exists, the effect on leverage is likely to be small and temporary; strong commitment to a solid credit profile.
Baa	\$20 - \$35	Strong and sustainable market position supported by a well-diversified network, with revenue spread across a moderately large number of countries or regions; moderately strong ability to sustain revenue and earnings during regional economic downturns but somewhat limited ability during global or pan-regional economic downturns.	15% - 20%	2x - 3x	25% - 35%	7.5x - 10x	Expected to have financial policies (including risk and liquidity management) that balance the interests of creditors and shareholders; some risk that debt-funded acquisitions or shareholder distributions could lead to a weaker credit profile.

SCALE (10%)		BUSINESS PROFILE (25%)	PROFITABILITY and EFFICIENCY (12.5%)	LEVERAGE and COVERAGE (37.5%)		FINANCIAL POLICY (15%)	
Revenue (USD Billion) ^[1] (10%)	Market Position and Network Strength (25%)		EBIT Margin (EBIT / Revenue) ^[2] (12.5%)	Debt / EBITDA ^[3] (12.5%)	RCF / Debt ^[4] (12.5%)	(FFO + Interest Expense) / Interest Expense ^[5] (12.5%)	Financial Policy (15%)
Ba	\$7.5 - \$20	Moderately strong and sustainable market position supported by a fairly diversified network, with revenue spread among several countries or regions; or moderate concentration in one country or region that reduces diversification benefits and increases exposure to idiosyncratic shocks; or limited ability to sustain revenue and earnings during global or regional economic downturns, resulting in moderate earnings volatility.	10% - 15%	3x - 5x	12.5% - 25%	4x - 7.5x	Expected to have financial policies (including risk and liquidity management) that tend to favor shareholders over creditors; above-average financial risk resulting from shareholder distributions, acquisitions, or other significant capital structure changes.
B	\$5 - \$7.5	Sustainable market position but a fairly concentrated network with revenue spread across a very small number of countries or regions; or a significant reliance on one country or region reduces diversification benefits and increases exposure to idiosyncratic shocks; or the network is exposed to increasing competition from new entrants; or very limited ability to sustain revenue and earnings during global or regional economic downturns, resulting in elevated earnings volatility.	5% - 10%	5x - 7x	5% - 12.5%	2x - 4x	Expected to have financial policies (including risk and liquidity management) that favor shareholders over creditors; high financial risk resulting from shareholder distributions, acquisitions, or other significant capital structure changes.
Caa	\$2 - \$5	Operates in a small market or has a history of weak network profitability; or a highly significant reliance on one country or region reduces diversification benefits and increases exposure to idiosyncratic shocks; or the network is exposed to increasing competition from new entrants; or severely limited ability to sustain revenue and earnings during economic downturns, resulting in significant earnings volatility.	2.5% - 5%	7x - 10x	0% - 5%	1x - 2x	Expected to have financial policies (including risk and liquidity management) that create elevated risk of debt restructuring in varied economic environments.
Ca	< \$2	Operates in a single country or region, with a very weak market position or has a history of loss-making operations; or an extremely significant reliance on one country or region; or has a limited ability to sustain market share when faced with new entrants, idiosyncratic shocks or increasing competition; or small network constrains ability to sustain revenue and earnings through the economic cycle, resulting in extremely volatile earnings.	< 2.5%	> 10x	< 0%	< 1x	Expected to have financial policies (including risk and liquidity management) that create elevated risk of debt restructuring even in healthy economic environments.

[1] For the linear scoring scale, the Aaa endpoint value is \$100 billion. A value of \$100 billion or better equates to a numeric score of 0.5. The Ca endpoint value is \$0.5 billion. A value of \$0.5 billion or worse equates to a numeric score of 20.5.

[2] For the linear scoring scale, the Aaa endpoint value is 50%. A value of 50% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

[3] For the linear scoring scale, the Aaa endpoint value is 0.1x. A value of 0.1x or better equates to a numeric score of 0.5. The Ca endpoint value is 20x. A value of 20x or worse equates to a numeric score of 20.5, as does a negative Debt/EBITDA value.

[4] For the linear scoring scale, the Aaa endpoint value is 130%. A value of 130% or better equates to a numeric score of 0.5. The Ca endpoint value is -5%. A value of -5% or worse equates to a numeric score of 20.5.

[5] For the linear scoring scale, the Aaa endpoint value is 25x. A value of 25x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

Sector overview

The global passenger airline industry plays a critical role in the global economy. It also supports related sectors, such as airports, tourism, business services and the aerospace industry, among others. The fundamentals of the airline business are largely influenced by global and regional economic conditions, making it a highly cyclical industry. Additionally, the industry remains vulnerable to natural disasters, geopolitics and other operational event risks, including the threats of terrorism. Although these challenges are common across the industry, a carrier's market position, route network, scale, liquidity and cost-competitiveness are distinguishing factors that can drive resiliency.

Airlines can also be subject to heightened competition, with new entrants such as low-cost carriers, competing against longstanding operators. Business models vary, ranging from largely concentrated networks, such as regional point-to-point carriers or carriers that predominately serve leisure destinations, to hub-and-spoke airlines with global footprints.

The industry is also highly capital-intensive. Investing in new aircraft allows a company to run efficiently. Operating leases have become a more prevalent form of financing, as opposed to purchasing aircraft.

With a large part of the cost structure consisting of costs for jet fuel and labor, controlling costs and running efficient operations are important challenges. Maintenance costs also can be an important part of a carrier's cost base, with strict safety standards requiring costly and time-consuming procedures for engine and airframe checks and parts replacements as well as for overhauls of engines, auxiliary power units and landing gear.

Discussion of the scorecard factors

In this section, we explain our general approach for scoring each scorecard factor or sub-factor, and we describe why they are meaningful as credit indicators.

Factor: Scale (10% weight)

Why it matters

Scale is an important indicator of a company's revenue-generating capability and its resilience to shocks, such as sudden shifts in demand or rapid cost increases.

Large companies within the industry generally have more flexibility to manage their businesses under different demand and cost scenarios, an important consideration in an industry that is highly cyclical. A large revenue base also can lead to economies of scale, for example, in terms of aircraft purchases and to improvements in the value and reliability of services. Larger carriers also tend to generate higher cash flow for capital reinvestment and debt reduction. They also generally have greater access to the capital markets, which can reduce the cost of capital.

How we assess it for the scorecard

REVENUE:

Scale is measured (or estimated in the case of forward-looking expectations) using total reported revenue in billions of US dollars.

Factor: Business Profile (25% weight)

Why it matters

The business profile of a passenger airline is important because it greatly influences its ability to generate sustainable earnings and operating cash flows. Core aspects of an airline company's business profile are its market position and network strength, which can reduce volatility through economic cycles.

The sustainability and strength of an airline's market position provide important indications of a company's ability to attract and keep customers. The markets in which an airline operates, its operating model, the frequency of its flights, and its pricing and loyalty programs have a large degree of influence on a company's market position.

A diverse mix of services and routes is also important because it reduces a company's exposure to new competitors or other adverse market developments that could cause earnings to erode. Concentration in a limited type of service offering can expose a company to losses related to changes in passenger behavior. Operating within a large and diverse network spread over many countries or regions lessens the impact of labor strikes, geopolitical events (including terrorism and civil war), natural disasters, competitors' actions and other operational event risks that could significantly curtail operations.

How we assess it for the scorecard**MARKET POSITION AND NETWORK STRENGTH:**

Scoring for this factor is based on our assessment of an airline's market position and network strength, including its capacity to sustain revenue and earnings through economic cycles.

Our assessment of a company's market position is typically based on its share of the markets in the regions in which it operates as well as on its ability to sustain this position. We also may consider the airline's cost base. Because airlines generally have limited capacity to unilaterally increase their fares, a low cost base can provide a significant competitive advantage.

Carriers also can differentiate themselves with a diverse mix of routes, schedules and flight frequency as well as with on-time arrival and departure performance. The quality of the airline's services, such as transfers, luggage handling or in-flight amenities, may also be important determinants of its ability to attract and retain customers.

We also may consider potential changes in the competitive landscape as a result of market consolidation, new entrants or changes in customer demands. An inability to adapt to consumer trends, owing to low competitive advantages or to a limited capacity to adjust the business model, for example, will typically weigh negatively in our assessment of a company's market position.

Our assessment of network strength considers the diversity of the airline's operating locations. Companies with a balanced revenue contribution from a number of regions or countries typically score higher for this factor, because having diverse operating locations can offset a disruption in a specific market. Limited market diversity can constrain scoring for this sub-factor, particularly if the company relies heavily on one or two operating locations, which can be the case for some domestic or holiday operators. However, broad diversification by itself would likely not be viewed as a strength if the network does not have competitive advantages, such as highly desired and frequented routes, or airport slots at constricted airports.

We may also consider the locations of one or more hubs for a company operating under a hub-and-spoke system or the selected routes for a point-to-point carrier. Airline alliances can also support a carrier's network strength in cases where they bring synergies, for example, by offering more destinations to customers via flights on the partner's aircraft (i.e., code-sharing). Alliances that also offer single-itinerary bookings, access to airport lounges and redemption of frequent flyer miles or points may further enhance an airline's business profile.

In assessing a company's capacity to sustain revenue and earnings through cycles, we typically consider the extent to which a company can adjust its service offering or curtail its costs to withstand adverse market developments. Because fuel and labor typically constitute the majority of an airline's operating expenses and airlines have little flexibility on each of these cost items,³ capacity discipline, fare increases and cutting other costs are typically the primary levers that airlines can pull to contain pressure on revenue and earnings. We typically assess the airline's ability to adjust these parameters without endangering the continuity of its operations and the sustainability of its business model. Additionally, carriers with other operations, such as aircraft maintenance or aircraft catering segments, could also demonstrate lower earnings volatility because of related diversification benefits.

Generally, we do not expect a given company's business profile to exactly match each of the attributes listed for a given scoring category. We typically assign the factor score based on the alpha category for which the issuer has the greatest number of characteristics. However, there may be cases in which one characteristic is sufficiently important to a particular issuer that it is determinative of the sub-factor score. For example, exposure to increasing competition from new entrants or a reliance on a small number of countries or regions for operations is likely to limit the score to the B or Caa rating category, because the business risk in these cases is typically high. Companies whose service offering has limited competitive advantages may also have a lower score for this factor.

Factor: Profitability and Efficiency (12.5% weight)**Why it matters**

Profits matter because they are needed to generate sustainable cash flow and maintain a competitive position, which includes making investments in service offerings to attract customers and in the fleet to meet capacity plans by adding or reconfiguring aircraft. The ability to sustain high profitability is generally a strong indicator of operating efficiency and of substantial competitive advantages.

Improving operating efficiency is a challenge for the industry due to constrained airport infrastructure and air traffic control systems, weather and labor disruptions and limited operating leverage.

This factor comprises one quantitative sub-factor:

EBIT Margin

The ratio of earnings before interest and taxes to revenue (EBIT Margin) provides insight into the profitability of a passenger airline company's operations.

How we assess it for the scorecard

EBIT MARGIN:

We use EBIT Margin, which is the ratio of EBIT to revenue.

Factor: Leverage and Coverage (37.5% weight)

Why it matters

Leverage and cash flow coverage measures provide an important indication of how much financial risk an airline company is willing to undertake. These metrics are also important indicators of the company's ability to sustain its competitive position, invest in growth opportunities and service debt.

This factor comprises three quantitative sub-factors:

Debt / EBITDA

The ratio of total debt to earnings before interest, taxes, depreciation and amortization (Debt/EBITDA) is an indicator of debt serviceability and financial leverage. The ratio is commonly used in this sector as a proxy for comparative financial strength.

RCF / Debt

The ratio of retained cash flow to total debt (RCF/Debt) is an indicator of a company's cash generation (before working capital movements and capital expenditures, and after dividend payments) relative to its debt burden.

(FFO + Interest Expense) / Interest Expense

The ratio of funds from operations plus interest expense to interest expense ((FFO + Interest Expense)/Interest Expense) is an indicator of a company's ability to meet its interest obligations before investments in working capital, dividends and capital expenditures.

How we assess it for the scorecard

Scoring is based on three sub-factors: Debt/EBITDA; RCF/Debt; and (FFO + Interest Expense)/Interest Expense.

DEBT / EBITDA:

The numerator is total debt, and the denominator is EBITDA.

RCF / DEBT:

The numerator is retained cash flow, and the denominator is total debt.

(FFO + INTEREST EXPENSE) / INTEREST EXPENSE:

The numerator is FFO plus interest expense, and the denominator is interest expense.

Factor: Financial Policy (15% weight)

Why it matters

Financial policy encompasses management and board tolerance for financial risk and commitment to a strong credit profile. It is an important rating determinant, because it directly affects debt levels, credit quality, the future direction for the company and the risk of adverse changes in financing and capital structure.

Financial risk tolerance serves as a guidepost to investment and capital allocation. An expectation that management will be committed to sustaining an improved credit profile is often necessary to support an upgrade. For example, we may not upgrade the ratings of a company that has built flexibility within its rating category if we believe the company will use that flexibility to fund a strategic acquisition, cash distribution to shareholders, spin-off or other leveraging transaction. Conversely, a company's credit rating may be better able to withstand a moderate leveraging event if management places a high priority on returning credit metrics to pre-transaction levels and has consistently demonstrated the commitment to do so through prior actions. Liquidity management⁴ is an important aspect of overall risk management and can provide insight into risk tolerance.

How we assess it for the scorecard

We assess the issuer's desired capital structure or targeted credit profile, its history of prior actions, including its track record of risk and liquidity management, and its adherence to its commitments. Attention is paid to management's operating performance and use of cash flow through different phases of economic and industry cycles. Also of interest is the way in which management responds to key events, such as changes in the credit markets and liquidity environment, legal actions, competitive challenges or regulatory pressures. Considerations include a company's public commitments in this area, its track record for adhering to commitments and our views on the ability of the company to achieve its targets.

When considering event risks in the context of scoring financial policy, we assess the likelihood and potential negative impact of M&A or other types of balance-sheet-transforming events. Management's appetite for M&A activity is assessed, with a focus on the type of transactions (i.e., core competency or new business) and funding decisions. Frequency and materiality of acquisitions and previous financing choices are evaluated. A history of debt-financed or credit-transforming acquisitions will generally result in a lower score for this factor. We may also consider negative repercussions caused by shareholders' willingness to sell the company.

We also consider a company's and its owners' past record of balancing shareholder returns and debtholders' interests. A track record of favoring shareholder returns at the expense of debtholders is likely to be viewed negatively in scoring this factor.

Other considerations

Ratings may reflect consideration of additional factors that are not in the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. Such factors include financial controls and the quality of financial reporting; corporate legal structure; the quality and experience of management; assessments of corporate governance as well as environmental and social considerations; exposure to uncertain licensing regimes and possible government interference in some countries. Regulatory, litigation, liquidity, technology and reputational risk as well as changes to consumer and business spending patterns, competitor strategies and macroeconomic trends also affect ratings.

Following are some examples of additional considerations that may be reflected in our ratings and that may cause ratings to be different from scorecard-indicated outcomes.

Hedging Strategies

Hedging fuel costs can be a form of insurance against large, fast-moving price increases; however, hedging generally does not provide a competitive cost advantage when fuel prices stagnate, decline or remain within a relatively tight range. Airlines based outside the US are typically more likely to hedge fuel costs, e.g., because of currency risk. For the industry, aircraft purchases, lease payments, jet fuel costs and maintenance costs are typically settled in US dollars, as opposed to ticket revenue and other expenses, which are typically denominated in local currency.

In assessing the impact that hedging can have on an airline's financial prospects, we typically consider the type of hedging instruments used, the extent of the hedge for the next 12 months of fuel consumption, the underlying commodity or currency, and the risk of margin calls, among other considerations.

While we generally consider the hedging of fuel and currency risks to be credit neutral, we typically assess a company's hedging strategy against those of its main competitors. Having a substantially different strategy from most competing airlines may expose a company to heightened risk, because yields are largely determined by the after-hedging cost of fuel in a given market. We generally also consider large exposure to potential margin calls to be a credit weakness, because it carries liquidity risks that can in some cases outweigh the benefits of hedging.

Availability of Unencumbered Assets

An airline's financial flexibility can also be affected by the availability of unencumbered assets available for sale or as security to raise additional funds (i.e., financeable assets not pledged to lenders as collateral). These assets can include aircraft, terminals, hangars, office buildings, airport equipment, route authorities, landing or takeoff rights, or slots and gates, spare parts, loyalty programs and other intangible assets including the company's brand intellectual property. We generally consider that the less secured debt an airline has, the more financial flexibility it has to access additional financing.

Fleet Condition

The character and condition of the aircraft fleet can be an important consideration in our assessment of a company's credit profile. For example, a company that has an old fleet or a fleet in poor condition may have incrementally higher maintenance costs or a less-efficient fleet relative to competitors. Conversely, younger fleets typically have lower maintenance costs, and higher fuel efficiency. However, investments in new or younger aircraft as replacements for old models are more capital-intensive, which can outweigh the cost benefits of their fuel efficiency when oil prices are low.

The optimal fleet structure depends on the business profile of an airline. For example, for most low-cost carriers that operate short- and medium-haul flights, having a fleet that consists of a single type of aircraft can be advantageous, whereas hub airlines need multiple types of aircraft to serve their networks. In general, even for hub airlines, it has typically been more cost-efficient to operate a fleet with a low number of different aircraft types.

In assessing an airline's future financial performance, we typically consider whether the condition of the existing fleet may lead to increased operating costs or to large capital expenditures for its replacement or overhaul. The age of the fleet, in itself, is not always indicative of an upcoming need to renew the fleet. Some companies can run efficient fleets that are materially older than those of their competitors because of the efficiency of their process chains, such as their maintenance operations.

Also, choosing to lease aircraft when renewing a fleet can limit future investment. Airline companies may finance a large share of their aircraft deliveries through operating lease contracts, which can lessen the need to secure additional external financing. Cases where we consider the condition of the fleet to be negative for future operating performance and efficiency, or where the plan to renew the fleet may lead to higher financial leverage, may weigh negatively on an issuer's credit profile.

Investments in Equity of Other Airlines

In assessing airlines that buy equity in other airlines, we typically consider the benefits to reported cash flows from potential dividends as well as the potential for calls on the investor airline's cash in the event the target airline requires additional capital.

Equity investments in the industry are usually accompanied by code-sharing agreements, which typically increase revenue or profits for airlines, all else equal, and by programs to share best practices to improve operating efficiencies and profit margins. Sometimes, they include joint ventures with antitrust immunity, which allows for the sharing of pricing and cost data. These programs are intended to improve the financial performance of the target airline and to provide benefits to all owners. When minority interest dividends are material to the investor's cash flow, we typically consider the durability of such cash inflows. We may also find that proportional consolidation or another additional view of financial results is useful to augment our analysis of consolidated financials in these cases. We would generally also consider structural subordination in these cases.⁵ When these credit considerations are material, their impact will be captured in assigned ratings but may not be fully reflected in scorecard-indicated outcomes.

Management Strategy

The quality of management is an important factor supporting a company's credit strength. Assessing the execution of business plans over time can be helpful in assessing management's business strategies, policies and philosophies and in evaluating management performance relative to performance of competitors and our projections. Management's track record of adhering to stated plans, commitments and guidelines provides insight into management's likely future performance, including in stressed situations.

Environmental, Social and Governance Considerations

Environmental, social and governance (ESG) considerations may affect the ratings of issuers in the passenger airline sector. For information about our approach to assessing ESG issues, please see our methodology that describes our general principles for assessing these risks.⁶

Increasing environmental requirements and efforts to reduce greenhouse gas emissions (known as carbon transition risk) may lead to higher costs for many industries. Stricter regulations may entail limitations on operations, greater potential for technology disruptions and demand substitution, and additional investment requirements to meet regulatory standards.

In the passenger airline industry, companies will face pressure in the 2020s to curb carbon emissions, which may cause airlines with older aircraft to invest in fleet renewal, which will increase capital expenditures and likely weigh on free cash flow. Noise restrictions may also weigh on a company's ability to effectively run its business, in particular when operating in densely populated areas.

Key drivers for an airline's exposure to carbon transition risk include its route mix, traffic growth rate, fuel efficiency and pricing power, the last of which will largely determine its ability to pass through carbon costs to customers by way of ticket prices. Carbon policies in the country the airline is based in also influence the airline's exposure to carbon transition risk. Carbon emissions standards for international flights will be governed by the International Civil Aviation Organization's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Emissions standards for domestic flights depend on country-specific regulation, including how (or whether) a country implements its plans under international accords to reduce carbon emissions.

For the passenger airline industry, the key financial exposure to carbon regulation arise from international flights, due to CORSIA, which will cap emissions at specific levels and require airlines to purchase carbon offsets for any excess emissions, with implementation on a voluntary basis prior to 2030. A very large number of countries have voluntarily committed to commencing compliance with CORSIA from 2021, bringing forward potential cash outflows for purchases of carbon offsets related to their excess carbon emissions. This exposure could be material since international flights account for the majority of industry emissions and subject to the industry's ability to pass carbon costs to passengers. Airlines with a greater share of international flights generally face greater financial costs from carbon regulation than airlines with a greater share of domestic flights.

The ability of airlines to pass carbon costs to passengers through higher ticket prices is a key credit consideration. With the overwhelming majority of airlines in a given region incurring similar costs for aircraft, fuel, maintenance, landing fees and carbon emissions (per unit), fare increases may mitigate financial risk from carbon regulations for the industry. However, a strategy by any carrier to improve its market share by absorbing carbon costs would likely impede the industry's success at passing along these costs to passengers.

The long-term nature of carbon transition risks as well as other environmental compliance requirements may mean that they are not fully reflected in our published scorecards. Forward-looking published scorecards are typically based on our near-term projections, in part because we may not have sufficient visibility into an issuer's future results beyond this time horizon that would enable us to accurately score these factors. For example, we might expect that carbon regulation will have a material negative impact on cash flow generation over the long term before we can precisely project its impact, which could cause our ratings to be lower than scorecard-indicated outcomes for some companies in the sector. Over time, carbon transition risks, as they become more precisely quantifiable, would be more likely to be captured in the scorecard.

Among the areas of focus in corporate governance are audit committee financial expertise, the incentives created by executive compensation packages, related party transactions, interactions with outside auditors and ownership structure.

Regulatory Considerations

Companies in the passenger airline sector are subject to varying degrees of regulatory oversight. Effects of these regulations may entail limitations on operations, higher costs, and higher potential for technology disruptions and demand substitution. Regional differences in regulation, implementation or enforcement may advantage or disadvantage particular issuers.

Our view of future regulations plays an important role in our expectations of future financial metrics as well as our confidence level in the ability of an issuer to generate sufficient cash flows relative to its debt burden over the medium and longer term. In some circumstances, regulatory considerations may also be a rating factor outside the scorecard, for instance when regulatory change is swift.

Financial Controls

We rely on the accuracy of audited financial statements to assign and monitor ratings in this sector. The quality of financial statements may be influenced by internal controls, including the proper tone at the top, centralized operations, and consistency in accounting

policies and procedures. Auditors' reports on the effectiveness of internal controls, auditors' comments in financial reports and unusual restatements of financial statements or delays in regulatory filings may indicate weaknesses in internal controls.

Excess Cash Balances

Companies in this sector typically hold high cash balances with pronounced variations due to the seasonality of leisure travel demand (e.g., summertime and holiday travel), which leads to large swings in working capital because of the typically significant advance purchases of tickets. Airlines also typically have a cash buffer to withstand significant reductions in operations due to external event risk and exposure to cyclical variations, with the cash balances being more likely to come down in a downturn while they tend to build up when market conditions are more favorable.

Some companies in this sector may maintain cash balances (meaning liquid short-term investments as well as cash) that are far in excess of their operating needs. This excess cash can be an important credit consideration; however, the underlying policy and motivations of the issuer in holding high cash balances are often as or more important in our analysis than the level of cash held. We have observed significant variation in company behavior based on differences in financial philosophy, investment opportunities, availability of committed revolving credit facilities and shareholder pressures.

Most issuers need to retain some level of cash in their business for operational purposes. The level of cash required to run a business can vary based on the region(s) of operation and the specific sub-sectors in which the issuer operates. Some issuers have very predictable cash needs and others have much broader intra-period swings, for instance related to mark-to-market collateral requirements under hedging instruments. Some companies may hold large levels of cash at times because they operate without committed, long-term bank borrowing facilities. Some companies may hold cash on the balance sheet to meet long-term contractual liabilities, whereas other companies with the same types of liabilities have deposited cash into trust accounts that are off balance sheet. The level of cash that issuers are willing to hold can also vary over time based on the cost of borrowing and macroeconomic conditions. The same issuer may place a high value on cash holdings in a major recession or financial crisis but seek to pare cash when inflation is high. As a result, cash on the balance sheet is most often considered qualitatively, by assessing the issuer's track record and financial and liquidity policies rather than by measuring how a point-in-time cash balance would affect a specific metric.

Across all corporate sectors, an important shareholder-focused motivation for cash holdings, sometimes over very long periods, is cash for acquisitions. In these cases, we do not typically consider that netting cash against the issuer's current level of debt is analytically meaningful; however, the cash may be a material mitigant in our scenario analyses of potential acquisitions, share buybacks or special dividends. Tax minimization strategies have at times been another primary motivation for holding large cash balances. Given shareholder pressures to return excess cash holdings, when these motivations for holding excess cash are eliminated, we generally expect that a large portion of excess cash will be used for dividends and share repurchases.

By contrast, some companies maintain large cash holdings for long periods of time in excess of their operating and liquidity needs solely due to conservative financial policies, which provides a stronger indication of an enduring approach that will benefit creditors. For instance, some companies have a policy to routinely pre-fund upcoming required debt payments well in advance of the stated maturity. Such companies may also have clearly stated financial targets based on net debt metrics and a track record of maintaining their financial profile within those targets.

While the scorecard in this methodology uses leverage and coverage ratios with total gross debt rather than net debt, we do consider excess cash holdings in our rating analysis, including in our assessment of the financial and liquidity policy. For issuers where we have clarity into the extent to which cash will remain on the balance sheet and/or be used for creditor-friendly purposes, excess cash may be considered in a more quantitative manner. While we consider excess cash in our credit assessment for ratings, we do not typically adjust the balance sheet debt for any specific amount because this implies greater precision than we think is appropriate for the uncertain future uses of cash. However, when cash holdings are unusually large relative to debt, we may refer to debt net of cash, or net of a portion of cash, in our credit analysis and press releases in order to provide additional insight into our qualitative assessment of the credit benefit. Alternatively, creditor-friendly use of cash may be factored into our forward view of metrics, for instance when the cash is expected to be used for debt-repayment. We may also cite rating threshold levels for certain issuers based on net debt ratios, particularly when these issuers have publicly stated financial targets based on net debt metrics.

Even when the eventual use for excess cash is likely to be for purposes that do not benefit debtholders, large holdings provide some beneficial cushion against credit deterioration, and cash balances are often considered in our analysis of near-term liquidity sources and uses. Such downside protection is usually more important for low rated companies than for highly rated companies due to differences in credit stability and the typically shorter distance from potential default for issuers at the lower end of the ratings spectrum.

Liquidity

Liquidity is an important rating consideration for all passenger airline companies, although it may not have a substantial impact in discriminating between two issuers with a similar credit profile. Liquidity can be particularly important for companies in highly seasonal or cyclical operating environments where working capital needs must be considered, and ratings can be heavily affected by extremely weak liquidity. We form an opinion on likely near-term liquidity requirements from the perspective of both sources and uses of cash. For more details on our approach, please see our liquidity cross-sector methodology.⁷

Additional Metrics

The metrics included in the scorecard are those that are generally most important in assigning ratings to companies in this industry; however, we may use additional metrics to inform our analysis of specific companies. These additional metrics may be important to our forward view of metrics that are in the scorecard or other rating factors.

For example, free cash flow is not always an important differentiator of credit profiles. Strong companies with excellent investment opportunities may demonstrate multiyear periods of negative free cash flow while retaining solid access to capital and credit, because these investments will yield stable cash flows in future years. Weaker companies with limited access to credit may have positive free cash flow for a period of time because they have curtailed the investments necessary to maintain their assets and future cash-generating prospects. However, in some cases, free cash flow can be an important driver of the future liquidity profile of an issuer, which, as noted above, can have a meaningful impact on ratings.

Event Risk

We also recognize the possibility that an unexpected event could cause a sudden and sharp decline in an issuer's fundamental creditworthiness, which may cause actual ratings to be lower than the scorecard-indicated outcome. Event risks — which are varied and can range from leveraged recapitalizations to sudden regulatory changes or liabilities from an accident — can overwhelm even a stable, well-capitalized firm. Some other types of event risks include M&A, asset sales, spin-offs, litigation, pandemics, significant cyber-crime events and shareholder distributions.

Parental Support

Ownership can provide ratings lift for a particular company in the passenger airline sector if it is owned by a highly rated owner(s) and is viewed to be of strategic importance to those owners. In our analysis of parental support, we consider whether the parent has the financial capacity and strategic incentives to provide support to the issuer in times of stress or financial need (e.g., a major capital investment or advantaged operating agreement), or has already done so in the past. Conversely, if the parent puts a high dividend burden on the issuer, which in turn reduces its flexibility, the ratings would reflect this risk.

Government-related issuers may receive ratings uplift due to expected government support. However, for certain issuers, government ownership can have a negative impact on the underlying Baseline Credit Assessment.⁸ For example, price controls, onerous taxation and high distributions can have a negative effect on an issuer's underlying credit profile.

Other Institutional Support

In some countries, large corporate issuers have received government or banking support in the event of financial difficulties because of their overall importance to the functioning of the economy. In Japan, our corporate ratings consider the support that has operated there for large and systemically important organizations. Over the years, this has resulted in lower levels of default than might otherwise have occurred. Our approach considers whether the presence of group and banking relationships may provide support when systemically important companies encounter significant financial stress.

Seasonality

Seasonality is an important driver of customer demand and can cause swings in cash balances and working capital positions for passenger airlines. Higher volatility creates less room for errors in meeting customer demand or operational execution.

Cyclical Sectors

Scorecard-indicated outcomes in cyclical sectors such as passenger airlines may be higher than the rating at the top of the economic cycle and lower than the rating at the bottom of the cycle. While using annual financials in the scorecard typically provides very useful insights into recent or near-term results, ratings may also reflect our expectations for the progression of yearly results over a longer period that may include a full economic cycle. However, cyclicity itself poses many different types of risks to companies, and cycles do not reverse themselves with predictable regularity. A cyclical sector may also be affected by a secular decline or expansion. These considerations may be incorporated qualitatively in ratings.

Using the scorecard to arrive at a scorecard-indicated outcome

1. Measurement or estimation of factors in the scorecard

In the "Discussion of the scorecard factors" section, we explain our analytical approach for scoring each scorecard factor or sub-factor,⁹ and we describe why they are meaningful as credit indicators.

The information used in assessing the sub-factors is generally found in or calculated from information in the company's financial statements or regulatory filings, derived from other observations or estimated by Moody's analysts. We may also incorporate non-public information.

Our ratings are forward-looking and reflect our expectations for future financial and operating performance. However, historical results are helpful in understanding patterns and trends of a company's performance as well as for peer comparisons. Financial ratios,¹⁰ unless otherwise indicated, are typically calculated based on an annual or 12-month period. However, the factors in the scorecard can be assessed using various time periods. For example, rating committees may find it analytically useful to examine both historical and expected future performance for periods of several years or more.

All of the quantitative credit metrics incorporate our standard adjustments¹¹ to income statement, cash flow statement and balance sheet amounts for items such as underfunded pension obligations and operating leases. We may also make other analytical adjustments that are specific to a particular company.

2. Mapping scorecard factors to a numeric score

After estimating or calculating each factor or sub-factor, each outcome is mapped to a broad Moody's rating category (Aaa, Aa, A, Baa, Ba, B, Caa or Ca, also called alpha categories) and to a numeric score.

Qualitative factors are scored based on the description by broad rating category in the scorecard. The numeric value of each alpha score is based on the scale below.

Exhibit 3

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
1	3	6	9	12	15	18	20

Source: Moody's Investors Service

Quantitative factors are scored on a linear continuum. For each metric, the scorecard shows the range by alpha category. We use the scale below and linear interpolation to convert the metric, based on its placement within the scorecard range, to a numeric score, which may be a fraction. As a purely theoretical example, if there were a ratio of revenue to interest for which the Baa range was 50x to 100x, then the numeric score for an issuer with revenue/interest of 99x, relatively strong within this range, would score closer to 7.5, and an issuer with revenue/interest of 51x, relatively weak within this range, would score closer to 10.5. In the text or table footnotes, we define the endpoints of the line (i.e., the value of the metric that constitutes the lowest possible numeric score, and the value that constitutes the highest possible numeric score).

Exhibit 4

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
0.5-1.5	1.5-4.5	4.5-7.5	7.5-10.5	10.5-13.5	13.5-16.5	16.5-19.5	19.5-20.5

Source: Moody's Investors Service

3. Determining the overall scorecard-indicated outcome

The numeric score for each sub-factor (or each factor, when the factor has no sub-factors) is multiplied by the weight for that sub-factor (or factor), with the results then summed to produce an aggregate numeric score. The aggregate numeric score is then mapped back to a scorecard-indicated outcome based on the ranges in the table below.

Exhibit 5

Scorecard-indicated outcome

Scorecard-indicated outcome	Aggregate numeric score
Aaa	$x \leq 1.5$
Aa1	$1.5 < x \leq 2.5$
Aa2	$2.5 < x \leq 3.5$
Aa3	$3.5 < x \leq 4.5$
A1	$4.5 < x \leq 5.5$
A2	$5.5 < x \leq 6.5$
A3	$6.5 < x \leq 7.5$
Baa1	$7.5 < x \leq 8.5$
Baa2	$8.5 < x \leq 9.5$
Baa3	$9.5 < x \leq 10.5$
Ba1	$10.5 < x \leq 11.5$
Ba2	$11.5 < x \leq 12.5$
Ba3	$12.5 < x \leq 13.5$
B1	$13.5 < x \leq 14.5$
B2	$14.5 < x \leq 15.5$
B3	$15.5 < x \leq 16.5$
Caa1	$16.5 < x \leq 17.5$
Caa2	$17.5 < x \leq 18.5$
Caa3	$18.5 < x \leq 19.5$
Ca	$19.5 < x \leq 20.5$
C	$x > 20.5$

Source: Moody's Investors Service

For example, an issuer with an aggregate numeric score of 11.7 would have a Ba2 scorecard-indicated outcome.

In general, the scorecard-indicated outcome is oriented to the corporate family rating (CFR) for speculative-grade issuers and to the senior unsecured rating for investment-grade issuers. For issuers that benefit from rating uplift from parental support, government ownership or other institutional support, we consider the underlying credit strength or Baseline Credit Assessment for comparison to the scorecard-indicated outcome. For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers.¹²

Assigning issuer-level and instrument-level ratings

After considering the scorecard-indicated outcome, other considerations and relevant cross-sector methodologies, we typically assign a CFR to speculative-grade issuers or a senior unsecured rating for investment-grade issuers. For issuers that benefit from rating uplift from government ownership, we may assign a Baseline Credit Assessment.¹³

Individual debt instrument ratings may be notched up or down from the CFR or the senior unsecured rating to reflect our assessment of differences in expected loss related to an instrument's seniority level and collateral. The documents that provide broad guidance for such notching decisions are the rating methodology on loss given default for speculative-grade non-financial companies, the methodology for notching corporate instrument ratings based on differences in security and priority of claim, and the methodology for assigning short-term ratings.¹⁴

Key rating assumptions

For information about key rating assumptions that apply to methodologies generally, please see *Rating Symbols and Definitions*.¹⁵

Limitations

In the preceding sections, we have discussed the scorecard factors and many of the other considerations that may be important in assigning ratings. In this section, we discuss limitations that pertain to the scorecard and to the overall rating methodology.

Limitations of the scorecard

There are various reasons why scorecard-indicated outcomes may not map closely to actual ratings.

The scorecard in this rating methodology is a relatively simple reference tool that can be used in most cases to approximate credit profiles of companies in this sector and to explain, in summary form, many of the factors that are generally most important in assigning ratings to these companies. Credit loss and recovery considerations, which are typically more important as an issuer gets closer to default, may not be fully captured in the scorecard. The scorecard is also limited by its upper and lower bounds, causing scorecard-indicated outcomes to be less likely to align with ratings for issuers at the upper and lower ends of the rating scale.

The weights for each factor and sub-factor and factor in the scorecard represent an approximation of their importance for rating decisions across the sector, but the actual importance of a particular factor may vary substantially based on an individual company's circumstances.

Factors that are outside the scorecard, including those discussed above in the "Other considerations" section, may be important for ratings, and their relative importance may also vary from company to company. In addition, certain broad methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.¹⁶ Examples of such considerations include the following: how sovereign credit quality affects non-sovereign issuers, the assessment of credit support from other entities, the relative ranking of different classes of debt and hybrid securities, and the assignment of short-term ratings.

We may use the scorecard over various historical or forward-looking time periods. Furthermore, in our ratings we often incorporate directional views of risks and mitigants in a qualitative way.

General limitations of the methodology

This methodology document does not include an exhaustive description of all factors that we may consider in assigning ratings in this sector. Companies in the sector may face new risks or new combinations of risks, and they may develop new strategies to mitigate risk. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

Ratings reflect our expectations for an issuer's future performance; however, as the forward horizon lengthens, uncertainty increases and the utility of precise estimates, as scorecard inputs or in other considerations, typically diminishes. Our forward-looking opinions are based on assumptions that may prove, in hindsight, to have been incorrect. Reasons for this could include unanticipated changes in any of the following: the macroeconomic environment, general financial market conditions, industry competition, disruptive technology, or regulatory and legal actions. In any case, predicting the future is subject to substantial uncertainty.

Moody's related publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of sector and cross-sector credit rating methodologies can be found [here](#).

For data summarizing the historical robustness and predictive power of credit ratings, please click [here](#).

For further information, please refer to *Rating Symbols and Definitions*, which is available [here](#).

Moody's Basic Definitions for Credit Statistics (User's Guide) can be found [here](#).

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Endnotes

- [1](#) A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section of this document.
- [2](#) In our methodologies and research, the terms "scorecard" and "grid" are used interchangeably.
- [3](#) Flexibility to adjust labor costs may also be constrained by regulatory requirements. The mandated size of flight crews is one example.
- [4](#) Liquidity management is distinct from the level of liquidity, which is discussed in the "Other considerations" section.
- [5](#) Proportional consolidation brings a portion of the minority subsidiary's debt onto the balance sheet, but this debt is structurally senior to debt at the parent company, because it is closer to the assets and cash flows of the minority subsidiary.
- [6](#) A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.
- [7](#) A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.
- [8](#) For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers. A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.
- [9](#) Some factors do not have sub-factors, in which case we score at the factor level. When a factor comprises sub-factors, we score at the sub-factor level.
- [10](#) For definitions of our most common ratio terms, please see *Moody's Basic Definitions for Credit Statistics (User's Guide)*. A link can be found in the "Moody's related publications" section.
- [11](#) For an explanation of our standard adjustments, please see the cross-sector methodology that describes our financial statement adjustments in the analysis of non-financial corporations.
- [12](#) A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.
- [13](#) For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers. A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.
- [14](#) A link to a list of our sector and cross-sector rating methodologies can be found in the "Moody's related publications" section.
- [15](#) A link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.
- [16](#) A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

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