MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

Securities Industry Service Providers Methodology

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This rating methodology replaces the *Securities Industry Service Providers* methodology published in June 2018. In this update, we have revised our Macro-level Indicator scoring scales to align them with the scoring scales introduced in the November 2019 update to our rating methodology for sovereigns. We have also clarified that we may assign Baseline Credit Assessments to securities industry service providers that are government-related issuers.

Introduction

In this rating methodology, we explain our general approach to assessing credit risk for securities industry service providers globally, including the qualitative and quantitative factors that are likely to affect rating outcomes.

We discuss the scorecard used for this sector. The scorecard[1] is a relatively simple reference tool that can be used, together with our joint default analysis (JDA) framework, in most cases to approximate credit profiles in this sector and to explain, in summary form, many of the factors that are generally most important in assigning ratings to issuers in this sector. The scorecard factors may be evaluated using historical or forward-looking data or both.

We also discuss other rating considerations, which are factors that may be important for ratings but are not included in the scorecard, usually because they can be meaningful for differentiating credit profiles, but only in some cases. In addition, some of the methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.[2] Furthermore, since ratings are forward-looking, we often incorporate directional views of risks and mitigants in a qualitative way.

As a result, the scorecard-indicated outcome is not expected to match the actual rating for each issuer.

Our presentation of this rating methodology proceeds with (i) the scope of this methodology; (ii) our overall approach to rating securities industry service providers; (iii) a discussion of the standalone assessment scorecard; (iv) other rating considerations not reflected in the scorecard; (v) the assignment of instrument ratings; (vi) methodology assumptions; and (vii) limitations.

In the appendices, we describe (i) how we use the scorecard to arrive at a scorecard-indicated standalone assessment; (ii) our Joint Default Analysis (JDA) framework; and (iii) the use of JDA analysis in assessing affiliate and government support.

1 In our methodologies and research, the terms "scorecard" and "grid" are used interchangeably.

2 A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Scope of This Methodology

This methodology is applicable to securities industry service providers. Such firms interact with their customers primarily as agents, with limited, if any, principal risk that would be associated with traditional market-making activities. The securities industry service provider sector includes issuers involved in one or more diverse segments of the broad securities industry, from interdealer brokerage, mergers & acquisition advisory, exchanges and other market infrastructure entities to retail brokerage and financial advisory. Issuers in this sector share a characteristic of relying on recurring operating cash flow generation to service their borrowings. Securities industry service providers tend to have relatively simple funding structures with limited reliance on short-term funding, and they typically raise corporate debt for general purposes, including to fund expansions, acquisitions or recapitalizations.

We have a separate rating methodology for securities industry market makers;[3] by contrast, these firms typically commit their own capital to act as principals in dealings with other market participants and/or tend to be balance sheet-intensive, and their funding structure tends to include a significant amount of confidence-sensitive, short-term funding such as securities sold under agreements to repurchase.

Some financial institutions are hybrids or financial conglomerates, combining banking, securities, clearing, asset management, private equity and insurance activities, among others. In such cases, the primary rating methodology used is the one corresponding to the institution's key credit risks and main franchise activities. We may also employ other methodologies to complement and inform our analytical assessment of the institution.

In cases where a securities firm exhibits significant traits of both a service provider and a market maker, we generally rate it using the Securities Industry Market Makers rating methodology as the primary methodology, and generally use the Securities industry Service Providers rating methodology as a secondary input to inform our analytical assessment. Market makers tend to have more complex balance sheets and are often more confidence-sensitive compared with securities industry service providers, and accordingly it is important to ensure that for the firms that exhibit those characteristics, we utilize the *Securities Industry Market Makers* rating methodology in order to help fully assess credit risks.

Overall Approach to Rating Securities Industry Service Providers

The securities industry service provider scorecard-indicated outcome is expressed as a three-notch range on our rating scale and is oriented to the firm's standalone assessment. The assigned standalone assessment is an alphanumeric score expressed on our 21-point rating scale, which is often but not always within the indicated three-notch range.

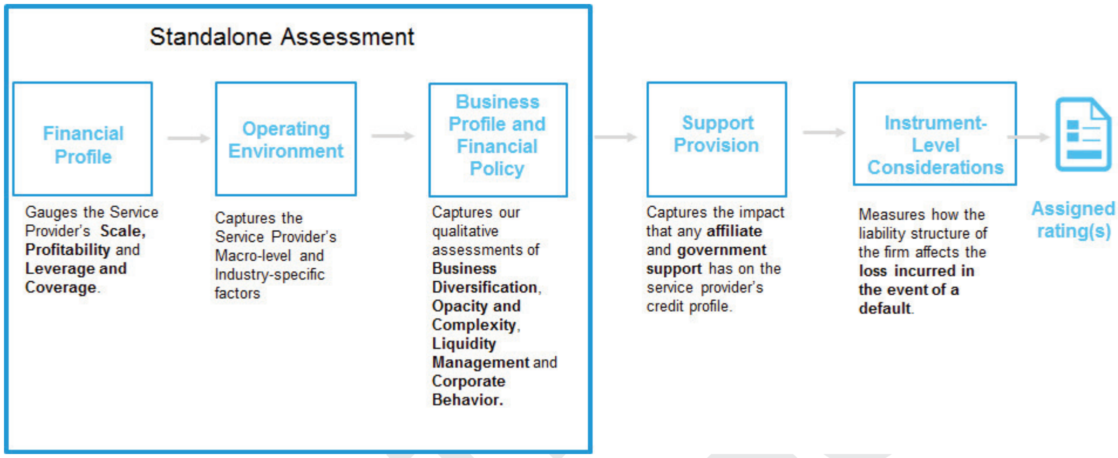
We incorporate our JDA framework to the standalone assessment to adjust for affiliate and public support to the extent it is considered likely and would reduce expected loss. We use our loss given default (LGD) methodology and model for assigning instrument-level ratings to speculative-grade securities industry service providers in countries where that methodology applies.[4] We use our methodology for aligning corporate instrument ratings based on differences in security and priority of claim for assigning instrument-level ratings to investment-grade securities industry service providers, and where the LGD methodology does not apply.

[3] A link an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[4] The LGD model is used for securities industry service providers in countries where it is used for non-financial corporates.

Our overall approach is illustrated in Exhibit 1.

EXHIBIT 1
Overall approach to rating securities industry service providers



Source: Moody's Investors Service

1. Scorecard Framework

The scorecard for the standalone assessment is composed of three sub-components, all of which have factors and some of which have sub-factors. An example securities industry service provider scorecard is provided below (Exhibit 2).

Please see Appendix 1 for general information relative to how we use the scorecard to arrive at a scorecard-indicated standalone assessment. The scorecard does not include every rating consideration.[5]

[5] Please see the "Other Rating Considerations" and "Limitations" sections.

EXHIBIT 2

Scorecard Example[*1]

Financial Profile						
Factor	Factor Weights	Historic Ratio	Initial Score	Assigned Score	Key driver #1	Key driver #2
Scale						
Pre-Tax Earnings (USD Million)	*20%*	500	Baa3	Ba1	Revenue trend	
Profitability						
Pre-Tax Margin	*10%*	22.1%	Baa1	Baa2	Revenue trend	
Pre-Tax Margin Volatility (1)	*10%*	50.0%	Ba1	Ba1		
Leverage and Coverage						
Debt/EBITDA (2)	*20%*	2.1x	Baa1	A1	Leveraging/de-leveraging	
(Retained Cash Flow-CapEx)/Debt	*20%*	18.0%	Baa3	Baa1	Leveraging/de-leveraging	
EBITDA/Interest Expense	*20%*	8.9x	Baa2	Baa2		
Financial Profile Score	*45%*		Baa2	Baa2		

Operating Environment			
Country XYZ	Factor Weights	Sub-factor Score	Score
Macro Level Indicator	*0%*		Aa2
Economic Strength	*25%*	aa2	
Institutions and Governance Strength	*50%*	a1	
Susceptibility to Event Risk	*25%*	aa	
Competitive Dynamics and Industry Fundamentals	*100%*	Ba	Ba
Home Country Operating Environment Score			Ba2
Operating Environment Score	55.0%		Ba2

ADJUSTED FINANCIAL PROFILE		Score
Adjusted Financial Profile Score		Ba1
Financial Profile Weight	*45%*	
Operating Environment Weight	*55%*	

Business Profile and Financial Policy	Adjustment	Comment
Business Diversification		
Opacity and Complexity		
Liquidity Management		
Corporate Behavior	-1	Key person risk
Total Business Profile and Financial Policy Adjustments	-1	

		Comment
Sovereign or parent constraint	Aaa	
Standalone Assessment Scorecard-indicated Range	Ba1 - Ba3	
Standalone Assessment Scorecard-indicated Midpoint	Ba2	
Assigned Standalone Assessment	Ba2	

[*1] "key drivers" columns summarize reasons for adjusting the initial score

Source: Moody's Investors Service

Except where noted, historical financial ratios in the scorecard are generally calculated based on the most recently reported fiscal year or the most recently reported 12-month period. However, the factors in the scorecard can be assessed based on other time periods, using historical or forward-looking data or both. The scorecard provides the ability to show how our forward-looking expectations for financial metrics (which are incorporated into the final scoring) vary from a securities industry service provider's historical results.

The securities industry service provider scorecard outcome is expressed as a three-notch range on our rating scale and is oriented to the issuer's stand-alone assessment. The use of a range acknowledges that factor weights for a particular issuer may vary from fixed weights in the scorecard, due to its individual circumstances. The assigned standalone assessment is expressed as an alpha-numeric on our rating scale, which may or may not be within the three-notch range, but is most often within it. Scorecards based on consolidated financial statements are oriented to the standalone assessment for the corporate family.

Where relevant, we apply our JDA framework to incorporate any affiliate support, and then any government support, as detailed in Appendix 2.[6] Both affiliate support and government support consider the probability that support will be provided and the capacity of the supporter (generally based on the standalone assessment of the affiliate and/or the long-term local currency rating of the government). Affiliate support is applied to the issuer's standalone assessment and provides an indicated range of positive uplift,[7] in notches. The assigned post-affiliate standalone assessment typically incorporates a level of upward notching within the affiliate support range produced by the JDA scorecard, but it may in some cases be outside that range. The application of government support JDA provides a range of suggested upward notching.[8] The assigned corporate family/issuer rating typically incorporates a level of upward notching within the government support range, but it may in some cases be outside that range, and in all cases, the assigned corporate family/issuer rating incorporates the local currency country ceiling.

Normally, the alphanumeric outcome resulting from the combination of the scorecard and JDA framework (where relevant) is oriented to the entity that is the near-exclusive issuer of debt for the group and has free access to the liquidity and capital of group members. To the extent that other entities in the group have meaningful debt, or debt-like obligations, or other liabilities (creating structural subordination), or that there are significant limitations on the movement of liquidity and capital within the group, the issuer and/or instrument rating for different entities in the group may vary from the outcome indicated by the combination of the scorecard and JDA framework. Please see the "Assigning Issuer-Level and Instrument-Level Ratings" section.

2. Measurement or Estimation of Factors in the Scorecard

The information used in assessing the financial profile sub-factors is generally found in or calculated from information in company financial statements, regulatory reporting, derived from other observations or estimated by Moody's analysts. We may also use non-public information. All of the quantitative credit metrics incorporate Moody's standard adjustments to financial statements in the analysis of financial institutions as per our cross-sector methodology.[9] We may also make other analytical adjustments that are specific to a particular securities industry service provider.

6 Some service providers that have direct government ownership may be designated as government-related issuers. Please see our rating methodology for government-related issuers, which describes how we incorporate support in these cases. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

7 The suggested upward notching may be zero or more notches.

8 The suggested upward notching may be zero or more notches.

9 A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

The initial score for each sub-factor is based on historical or projected financial data[10] as outlined below in the factor discussions and is a useful starting point for our analysis of the sub-factor. The assigned score for each quantitative sub-factor incorporates our forward view and other pertinent considerations. Some reasons why our assigned scores for each of the six financial ratio sub-factors might differ from a score based on historical results include the following: the effects of pro-forma adjustments for recent or anticipated acquisitions, divestitures, leveraging or deleveraging, and other entity- or industry-related events that may cause our expectation of future results to differ from historical ratios. The magnitude of any adjustment to the score is primarily based on our analytical interpretation of the extent to which the initial score is not an accurate reflection of future trends. In our forward-looking expectations, we may consider transactions or events (wide-ranging or issuer-specific) that may recently have occurred, or are likely to occur in the foreseeable future, that could significantly affect the service provider's future results and financial position. In addition, we may also perform revenue, expense and cash flow stress tests, and consider a securities industry service provider's resilience or susceptibility to a stress scenario in our assigned scores.

Some additional reasons why our assigned scores for some of the six financial ratio sub-factors might be different from a score based on historical results are explained in the factor discussions.

Discussion of the Standalone Assessment Scorecard

The standalone assessment is one of the three main components of our typical overall approach to assessing credit risk for securities industry service providers. This component has three sub-components: the Financial Profile, the Operating Environment, and qualitative notching for Business Profile and Financial Policy.

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

Standalone Assessment Sub-component: The Financial Profile

In this sub-component, we assess the standalone financial profile. This sub-component has three factors, which also have sub-factors.

1. Scale (20% of the Financial Profile Score)

Why It Matters

Scale: the absolute magnitude of a securities industry service provider's pre-tax earnings can be an important indicator of its franchise strength and competitive position within its line(s) of business. For example, the magnitude of a retail brokerage firm's earnings from commissions, fees and net interest revenues is typically a function of the size and quality of its customer base, its ability to provide value-added services, and its competitive positioning.

[10] Historical financials are typically the most recent annual or latest twelve month numbers, incorporating standard adjustments as outlined in our cross-sector methodology that discusses standard adjustments in the analysis of financial institutions. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

How We Assess It for the Scorecard

Scale (20%)

Sub-Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Pre-Tax Earnings (USD Million)	20%	≥ 5,000	2,000-5,000	1,000-2,000	400-1,000	100-400	20-100	0-20	<0

Source: Moody's Investors Service

Sub-factor adjustments

Please see the "Measurement or Estimation of Factors in the Scorecard" section above for a general description of how adjustments are employed in the scorecard.

2. Profitability (20% of the Financial Profile Score)

Why It Matters

The strength and stability of a securities industry service provider's profitability can be important indicators of its ability to adapt to changes in economic and business environments, and the level and sustainability of its competitive position, including its ability to sufficiently reinvest in human capital, technology and other important contributors to sustained success.

- Earnings strength: a securities industry service provider's pre-tax margin reflects its ability to generate revenues and its ability to keep expenses in check, and thus generate profits and cash flows to service debt. For most securities industry service providers, compensation tends to be the dominant expense category, as well as the one with the highest degree of flexibility. A securities industry service provider's ongoing ability to manage the level of compensation expense and at the same time avoid the exit of talented human capital can be an important factor in its longer-term success. Securities industry service providers' non-compensation expenses tend to have a higher fixed component (such as technology and communication costs for exchanges and other market infrastructure securities industry service providers), although some expenses (such as brokerage and clearing fees for retail financial advisory securities industry service providers) do fluctuate, depending on the level of business activity. Consistent proficiency in managing fixed and variable non-compensation expenses is clearly also important in maintaining critical earnings and margins measures.

- Earnings stability: a securities industry service provider's ability to successfully navigate the highs and lows of business and market cycles is an important contributor to its relative credit strength. We assess this over a four year period using the pre-tax margin coefficient of variation. An entity that generates high margins in good times, but low or negative margins in bad times, has less dependable cash flows than an entity that generates more consistent, sustainable margins throughout cycles.

How We Assess It for the Scorecard

Pre-tax Margin: The numerator is net income or loss before tax and the denominator is revenues.

Pre-tax Margin Volatility: We use the security industry service provider's pre-tax margin standard deviation of the eight trailing semi-annual fiscal reporting periods, divided by the absolute value of the average of the pre-tax margin values over the same periods. If the securities industry service provider's operating history is less than four years, or the securities industry service provider reports less frequently than on a semi-annual basis, the initial score for this sub-factor is assigned using the lowest score from all other financial profile ratios, but no higher than B1.

Profitability (20%)

Sub-Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Pre-tax margin	10%	≥ 45%	35%-45%	25%-35%	15%-25%	10%-15%	5%-10%	0%-5%	<0%
Pre-tax Margin Volatility*1	10%	< 10%	10%-20%	20%-30%	30%-50%	50%-70%	70%-100%	100%-150%	≥150%

*1 Negative Pre-tax Margin Volatility ratios are scored "Ca"

Source: Moody's Investors Service

Sub-factor adjustments

Please see the "Measurement or Estimation of Factors in the Scorecard" section above for a general description of how adjustments are employed in the scorecard. Typical considerations for adjusting profitability sub-factor ratio scores also include (but are not limited to):

» We may adjust the initial score for pre-tax margin upwards for financial advisory firms that remit a significant portion of commission and advisory revenues to their affiliated independent contractor advisors. The "gross" reporting of these revenues and expenses results in a dilution of reported margins; adjusting the ratio score based on "net" revenues (i.e. offsetting commission & advisory expenses paid to affiliated advisors against gross reported revenues) generally provides a more meaningful and comparable metric.

» We may adjust the historical score for pre-tax earnings volatility, if the service provider is part of a larger group of companies that reports on a quarterly or semi-annual basis, and there is sufficient segment disclosure information in the group consolidated financial statements to indicate the service provider's earnings that we can use to calculate the ratio.

3. Leverage and Coverage (60% of the Financial Profile Score)

Why It Matters

Debt leverage and coverage ratios are measures of a securities industry service provider's cash flow in relation to interest and to total debt and are thus important indicators of its ability to service debt, finance its business, and attract capital needed for investments and repaying maturing debt. These also give insights into management's financial strategy.

» Debt/EBITDA and (Retained cash flow (RCF) minus capital expenditures (capex))/debt are useful and complementary in assessing a securities industry service provider's leverage.

» Debt/EBITDA: this commonly-used measure is an indicator of debt serviceability and debt leverage, and is a proxy for comparative financial strength. EBITDA can sometimes include expenses that are not captured in traditional cash flow measures but that we consider to be important in gauging sustainable cash flows, for instance stock-based compensation expense.[11]

» (Retained Cash Flow-Capital Expenditure)/Debt: this metric compares cash flow, after capex and dividends, with debt. RCF-capex reflects outflows for dividends and for capital expenditures (including payments to acquire intangible assets, such as software development), which can often be significant for exchanges and market infrastructure securities industry service providers in particular. Management

[11] In many cases, stock-based compensation is accompanied by cash outflows in the form of share repurchases, by which means the service provider seeks to offset the dilutive effects of the awarded stock. Shares issued and repurchased are captured in the financing activities area of the cash flow statement and are thus not included in such measures as funds from operations (FFO) or cash from operations (CFO).

may be unwilling or even unable to cut capex, if investments are necessary to maintain competitive position, or dividends, that may be necessary to retain access to capital markets.

» EBITDA/Interest Expense: this ratio is a commonly used indicator of a securities industry service provider's ability to pay interest from its operating performance.

How We Assess It for the Scorecard

Debt/EBITDA:

» The numerator is debt and the denominator is earnings before interest, depreciation and amortization expense (EBITDA).

» Our measure of debt for this ratio is "corporate" debt, and excludes "operating" debt such as securities sold under agreements to repurchase and other types of generally short-term debt which the securities industry service provider may enter into purely for spread-earning and operating purposes.

» Our measure of EBITDA for this ratio adds back impairment charges associated with property, plant & equipment and goodwill & other intangible assets, since we consider such charges to be similar to depreciation & amortization expense. We also adjust EBITDA to remove unusual and nonrecurring items.

(Retained Cash Flow-Capital Expenditure)/Debt:

» The numerator is RCF minus capital expenditure and the denominator is corporate debt. RCF is funds from operations (FFO) less common, preferred and minority dividends. FFO is cash flow from operations before changes in working capital and changes in other short-term and long-term operating assets and liabilities. Capital expenditure is the cash outflow for capital expenditure, including payments to acquire intangible assets, such as software development.

EBITDA/Interest Expense:

» The numerator is EBITDA and the denominator is interest expense. Our measure of interest expense is interest on "corporate" debt, including the effects of related fees and hedging adjustments.

Leverage and Coverage (60%)

Sub-Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Debt/EBITDA[*1]	20%	< 0.5x	0.5x-1x	1x-2x	2x-3x	3x-4.5x	4.5x-6.5x	6.5x-10x	≥10x
(Retained Cash Flow-Capital Expenditure)/Debt	20%	≥ 70%	50%-70%	30%-50%	15%-30%	10%-15%	5%-10%	0%-5%	<0%
EBITDA/Interest Expense	20%	≥ 22x	15x-22x	11x-15x	7x-11x	3x-7x	1x-3x	0x-1x	<0x

[*1] Negative Debt/EBITDA ratios are scored "Ca"

Source: Moody's Investors Service

Sub-factor adjustments

Please see the "Measurement or Estimation of Factors in the Scorecard" section above for a general description of how adjustments are employed in the scorecard. Some additional considerations for leverage and coverage sub-factor ratio scores may include:

» Some securities industry service providers are financed by their owners in such a manner that they have little or no financial debt obligations outstanding. In such cases, leverage and coverage scores calculated on a historical basis are likely to overstate the strength of the financial profile. In such cases, we typically adjust the factor scores. Our adjustments are informed by scenario analyses to develop an assessment of the securities industry service provider's intrinsic debt service capacity. In many of these cases, the securities industry service provider's business activities may be quite concentrated, with a high risk profile, such that it may not be able to sustain even a relatively modest amount of issued debt. Accordingly, in such cases, the downward adjustments of the three leverage and coverage ratios may be extensive. Typically, we would position these scores around the average of the scores for the scale and profitability sub-factors.

» We may adjust the initial score for (RCF – Capex)/Debt upwards, to remove cash outflows in RCF pertaining to special dividends, if we consider that the securities industry service provider could choose to cease such special dividend payments based upon a change in its financial condition.

Standalone Assessment Sub-component: Operating Environment

A key component of our analysis – particularly in developing markets – is the extent to which external conditions can have a meaningful influence on securities industry service providers' credit profiles.

The Operating Environment incorporates two sub-factors: Macro-Level Indicator, and Competitive Dynamics and Industry Fundamentals.

Why It Matters

The Operating Environment sub-component captures relevant economic, judicial/regulatory, institutional and general operating conditions that may impact securities industry service providers' creditworthiness. In some cases, these conditions can over time have as much, if not more, of a bearing on securities industry service providers' long-term viability as the intrinsic strength of their own operations.

Macro-level indicators are Economic Strength, Institutions and Governance Strength and Susceptibility to Event Risk.

» Economic Strength: The intrinsic strength of an economy provides critical indications of a sovereign's resilience to external shocks. A sovereign's ability to generate sufficient revenue to service debt over the medium term relies on sustained economic growth and prosperity, i.e., wealth. These considerations have a direct bearing on the ability of securities industry service providers to retain their creditworthiness.

» Institutions and Governance Strength: The strength of institutions and governance are important determinants of a sovereign's creditworthiness because they influence the predictability and stability of the legal and regulatory environment, which is of importance to investors. Institutions and governance provide a strong indication of a government's willingness to repay its debt. They influence the sovereign's capacity and willingness to formulate and implement economic, fiscal and monetary policies that support growth, socioeconomic stability and fiscal sustainability, which in turn protect the interests of creditors over the long term. These considerations are important for the longer-term prospects of securities industry service providers.

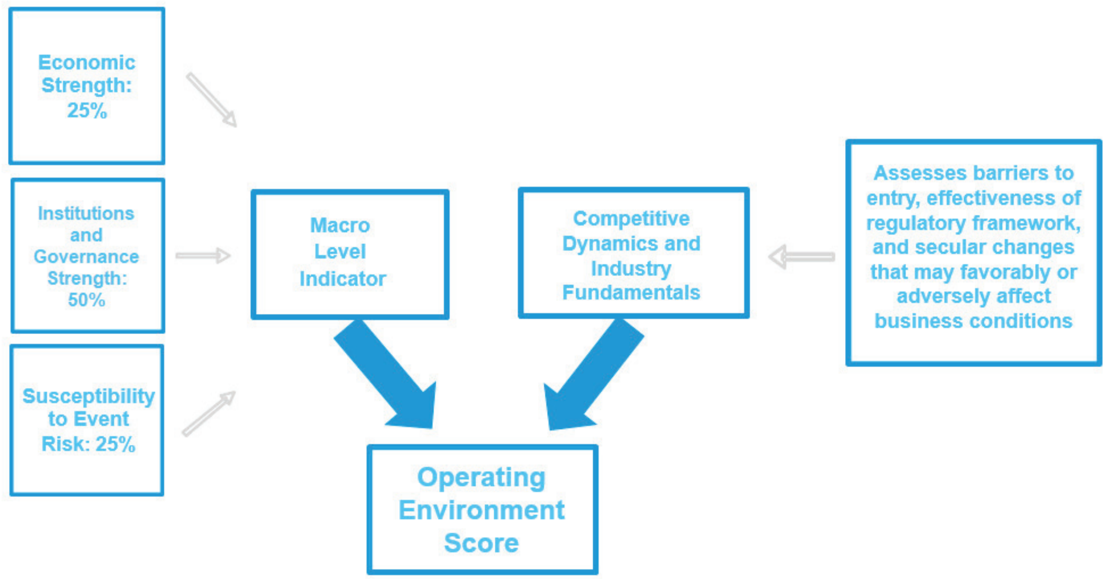
» Susceptibility to Event Risk: Susceptibility to sudden, extreme events that could severely impact a country's economy or its institutions, or strain public finances is an important indicator of a sovereign's creditworthiness. Event risks are varied and typically include domestic political and geopolitical risks, government liquidity risk, banking sector risk and external vulnerability risk. We believe that such events could have significant negative implications for financial institutions, including securities industry service providers.

A securities industry service provider's competitive environment can have a profound impact on its financial and operating strategy as well as on current and future profitability. Similarly, the fundamental characteristics of the sector (or sectors) in which a securities industry service provider operates, including the extent of barriers to entry and regulatory oversight, and the pervasiveness of secular change, can present significant risks and opportunities that are important considerations in assessing its credit profile.

How We Assess It for the Scorecard

Exhibit 3 summarizes how we assess the credit impact of the operating environment.

EXHIBIT 3
Operating Environment scoring construct



Source: Moody's Investors Service

Macro-Level Indicator

The Macro-Level Indicator score is based on three factors from Moody's sovereign ratings methodology,[12] and is assigned based on the country/countries in which a securities industry service provider operates.

» Economic Strength: Our published factor score for a sovereign's Economic Strength contributes 25% of the Macro-Level Indicator score.

» Institutions and Governance Strength: Our published factor score for a sovereign's Institutions and Governance Strength contributes 50% of the Macro-Level Indicator score.

» Susceptibility to Event Risk: Our published factor score for a sovereign's Susceptibility to Event Risk contributes 25% of the Macro-Level Indicator score.

Competitive Dynamics and Industry Fundamentals

In assessing competitive dynamics and industry fundamentals, we consider barriers to entry, regulatory enforcement and supervision, and risk of secular changes.

12 The link to all our cross-sector rating methodologies can be found in the Related Research section of this report.

Intense competition for customers and talented employees, while usually beneficial to customers, puts pressure on securities industry service providers' margins, and requires constant nimbleness and innovation to stave off market share erosion and obsolescence.

Securities industry service providers that operate within an oligopoly or have established significant barriers to entry typically face less competitive pressure and command greater long-term pricing power. Barriers to entry may include high customer switching costs, proprietary services or technologies that reduce the threat of new entrants, and extensive regulatory standards with rigorous supervision and enforcement mechanisms. A weak regulatory environment can result in weak risk and compliance management that can impose franchise risk onto the securities industry service provider, as well as broader systemic issues that may adversely affect a securities industry service providers' creditworthiness.

The Competitive Dynamics and Industry Fundamentals sub-factor score is assigned based on the characteristics of the sector(s) in which the securities industry service provider operates, including the competitive environment, barriers to entry, and regulatory considerations. The same score is assigned to all securities industry service providers operating in the same sector in each country.

The scoring for Competitive Dynamics and Industry Fundamentals is based on the following table:

Competitive Dynamics and Industry Fundamentals

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Multiple strong barriers to entry eliminate possibility of new competitors, with excellent regulatory standards, enforcement and supervision. Secular changes in progress are having an extremely positive influence on business conditions.	New entrants are rare due to strong barriers to entry, with outstanding regulatory standards, enforcement and supervision. Oligopolistic industry profile Secular changes in progress are having a positive influence on business conditions.	Barriers to entry provide sustainable protection of market share, and/or strong regulatory standards, enforcement and supervision. Limited prospect of adverse secular changes. Potential for secular changes to have a positive influence on business conditions.	Barriers to entry or high switching costs limit new entrants, and/or good regulatory standards, enforcement and supervision. Some risk of adverse secular changes.	Limited barriers to entry or low switching costs encourage new entrants, and/or modest regulatory standards, enforcement and supervision. Moderate risk of adverse secular changes.	Ineffective barriers to entry or absence of switching costs permit large number of new entrants, and/or weak regulatory standards, enforcement and supervision. Heightened risk of adverse secular changes.	No barriers to entry, and/or poor regulatory standards, enforcement and supervision. Service has commodity attributes. Strong risk of adverse secular changes.	No barriers to entry and no regulatory standards, enforcement and supervision. Commodity service. Undergoing adverse secular changes.

Source: Moody's Investors Service

Material Operations in More Than One Sector and/or Country

In cases where a securities industry service provider has material operations in more than one country, we assign a score that is representative of the composite operating environment for that issuer. Further details are provided in Appendix 1.

Standalone Assessment Sub-component: Business Profile and Financial Policy

In this sub-component, we consider how a particular securities industry service provider's business profile and financial policy affect its credit profile.

We have identified four qualitative factors that supplement those considered in the Financial Profile and Operating Environment sub-components and that are important contributors to the creditworthiness of a securities industry service provider.

The four factors are:

» **Business diversification**: the breadth of a securities industry service provider's business activities, whether it is dependent on a single business, or spread across multiple activities or geographies, exposing it or protecting it from concentration risk posed by a single activity or geography.

» **Opacity and complexity**: the extent to which a securities industry service provider's inherent complexity may heighten management challenges and the risk of strategic errors, and the degree to which financial statements are a reliable guide to its fundamentals.

» **Liquidity Management:** the level of preparedness for dealing with stress events or unexpected circumstances that might result in significant and sudden cash outflows or other factors that could strain the securities industry service provider's financial resources, including a burdensome and uneven debt maturity schedule, refinance risks, or over-reliance on uncertain, short-term funding sources.

» **Corporate behavior**: the extent to which a securities industry service provider's strategy, management and corporate policies may reduce or increase its overall risk profile.

We incorporate these factors in the scorecard as one or more direct notching adjustments to the Adjusted Financial Profile. For clarity, these adjustments are credit considerations that have not been attributed to any of the Financial Profile sub-factor scores, and thus whose effects are not fully-reflected in the Financial Profile scoring (i.e. they are not double-counted). Notching adjustments in respect of business diversification and corporate behavior may be upwards or downwards, whereas those in respect of opacity and complexity and liquidity management are downward only. All adjustments are in whole notches. The four Business Profile and Financial Policy factors and the related notching process are detailed below.

Business diversification

Business diversification matters because it gauges a securities industry service provider's sensitivity to stress in a single business line. It is related to earnings stability in the sense that earnings diversification across different lines of business or geographies without strong correlation increases the reliability of a securities industry service provider's earnings streams and, thus, its potential to absorb unexpected shocks. However, it is important to consider business diversification separately from earnings stability because some "monoline" business models may demonstrate high stability over a number of years, but are clearly vulnerable to an eventual problem in the securities industry service provider's chosen field of business, since it has no other income streams to fall back upon. Hence, we consider a securities industry service provider with monoline activities to be weaker than one with diverse businesses, even where both have similar observed pre-tax margin volatility.

We may, therefore, make a Business Diversification notching adjustment to reflect this assessment. In general, we would consider a securities industry service provider that typically derives more than three-quarters of its revenues or earnings from a single activity to be relatively undiversified, and would consider a downward notching adjustment in such cases (typically by one notch, but potentially more in some cases). Similarly, we may notch down a securities industry service provider with operations in a distinct and limited geographical area (typically by one notch, or potentially more in some cases).

On the other hand, we may notch upwards (typically by one notch, or potentially more in some cases) a securities industry service provider with an exceptional spread of businesses to recognize the benefit to creditors from a high degree of diversity that results in an overall more reliable earnings stream and, hence, greater certainty of strong, recurring cash generation.

Opacity and complexity

A securities industry service provider's riskiness increases with its opacity and complexity, other things being equal. This is because opacity and complexity increases management challenges, heightens the risk of strategic and business errors, and heightens operational risk. In addition, complex organizations tend to be more opaque because public disclosures necessarily provide a simplified view of their operations. By contrast, a relatively simple securities industry service provider can achieve more transparency with less disclosure.

We consider that securities industry service providers with higher-than-average opacity and/or complexity may exhibit the following characteristics:

- **Numerous business lines across many geographies and legal entities**. This brings diversification benefits discussed above, but also organizational complexity.
- **Complex legal structure.** A securities industry service provider may have a complex legal or ownership structure (for example, multiple minority ownership interests, offshore holding companies or pyramid structures).
- **Unreliable accounting and controls**. Some accounting standards offer greater confidence than others. Generally, we believe that US GAAP and IFRS offer high standards. However, some "local GAAP" accounting standards are less demanding and, therefore, raise questions about the completeness and accuracy of financial statements and related disclosures. Beyond the accounting standards themselves, the maturity of auditing standards and practices, and idiosyncratic questions about the quality of a securities industry service provider's financial reporting and internal controls, can also raise concerns.

We may make a downward Opacity and Complexity notching adjustment of a securities industry service provider displaying any of these characteristics, typically by one notch but occasionally by more in extreme cases.

Liquidity Management

We frequently consider securities industry service providers' liquidity management and incorporate this into our forward-looking stress testing where appropriate. We seek to understand managements' level of preparedness for dealing with stress events or unexpected circumstances that might result in significant and sudden cash outflows or other factors that could strain its financial resources (such as, for example, a burdensome and uneven debt maturity schedule, refinance risks, or over-reliance on uncertain, short-term funding sources). As service providers in the securities industry, the entities in the rating universe tend to be overseen by one or more financial services regulators. They may be required to post collateral with clearing agencies and maintain minimum capital and liquidity thresholds, each of which regulatory requirements might vary over time, depending upon factors such as changes to a securities industry service provider's own circumstances as well as changes to its wider operating and regulatory environment. Accordingly, as part of our analysis of securities industry service providers' capital and liquidity profiles, we seek to understand such requirements, and how they might evolve over time. When liquidity management is weak, we may make a downward notching adjustment, typically by one notch but occasionally by more in extreme cases.

Corporate Behavior

A securities industry service provider's creditworthiness can be influenced by what we term its "corporate behavior," which can also signal other concerns. We typically consider a number of factors as follows:

- **Financial policies.** An aggressive dividend policy may imply reduced financial flexibility. Management teams are often slow to reduce established dividend levels out of concern over negative signaling and adverse share price impact. Similarly, debt-funded acquisitions and borrowing to fund share repurchases are also signals of aggressive financial policies. On the other hand, we may recognize a strong and consistent record of creditor-friendly financial policies (evidenced via a successful focus on organic growth, capital accumulation and retention, and limited borrowing) by an upward notching adjustment.

- **Strategy and management** A radical departure in strategy, a shake-up in management, or an untested team can each herald sudden changes that increases the uncertainty about a securities industry service provider's risk profile. An aggressive growth plan can also signal an elevated risk appetite, while clear weaknesses in risk management can increase a securities industry service provider's exposure to adverse developments. Any concerns regarding the rigor of Board or management oversight and governance may also be considered in the notching we apply.

- **Operational risk**. Certain securities industry service providers (e.g. retail brokers, exchanges) tend to strongly rely on technology and can face heightened operational risk from being susceptible to cybercrime and systems issues and outages that could potentially lead to a loss of franchise value, client losses, and increased costs. Although the likelihood and financial and reputational cost of any significant technology-related problem can't be easily quantified, we may make one or more downward notching adjustments to reflect this tail risk; particularly in cases where a service provider has a weaker track record in this area compared with peers, or demonstrates other potential weaknesses in its investment in relevant infrastructure, oversight and processes.

- **Key person risk.** A securities industry service provider's high dependence on a single owner, executive or small group of executives can pose increased risks, because the loss of a single person could adversely affect its future fundamentals. For example, a securities industry service provider whose customers closely associate the owner or chief executive with the institution itself could suffer loss of business, earnings and ultimately reduced debt service capacity if the owner or chief executive were to leave or become unavailable, absent adequate succession planning. Ownership by or reliance on any single individual or group of individuals can also create conflicts of interest and lead to reputational damage by association with such persons, should they become embroiled in adverse publicity from other unrelated activities.

- **Compensation policy**. Similarly, an aggressive compensation policy, for example, widespread use of high bonus payments relative to salaries, and skewed towards cash, may encourage short-term risk-taking behavior, to the detriment of creditors.

- **Accounting policies**. Some securities industry service providers, although subject to more demanding accounting standards (e.g., US GAAP or IFRS) may choose to adopt aggressive accounting policies. This can sometimes be a strong indication of more widespread issues with corporate culture and compliance that could be detrimental to creditors' interests.

- **Legal Exposures:** Significant exposure to ongoing, pending or threatened litigation, and/or known unasserted claims.

We may make an upward or downward notching adjustment to reflect our view of the impact of Corporate Behavior, if we judge that any of these factors has a material bearing on a securities industry service provider's overall risk profile. Typically, downward notching would be one notch, but could be more if we perceive multiple and/or more deep-seated and serious issues. Upward notching would generally be limited to one notch. For example, we may notch downwards if we see an aggressive dividend policy combined with rapid growth in a new business line; and we may notch upwards where we perceive sustained exemplary stewardship over time, and where there is a tangible impact on the securities industry service provider's risk profile.

The Impact of the Sovereign or Other Supporting Government's Rating

Securities industry service providers are generally less highly correlated to sovereign risk, compared with other types of financial institutions that are more closely linked to sovereign credit risk via direct exposures to government bonds and similar fundamental drivers, such as the economic environment and institutional strength. Securities industry service providers typically demonstrate limited reliance on domestic banks or capital markets for funding, usually because of substantial free cash flow and flexibility to make adjustments (such as reductions in dividends or capital expenditure) to maintain a sound financial profile in a deteriorating environment. Nonetheless, sovereign credit quality can be a ratings driver for securities industry service providers. Please see our cross sector methodology that discusses how sovereign credit quality can affect other issuers.[13]

Other Rating Considerations

Ratings may include additional factors that are not in the scorecard, usually because they may have a meaningful effect in differentiating credit quality, but only in some cases. Such factors include environmental and social considerations, and limited financial history. 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.

Event Risk

We recognize the possibility that an unexpected event could cause a sudden and sharp decline in an issuer's fundamental creditworthiness. Typical events include sudden changes in regulation, disasters, mergers and acquisitions, asset sales, spin-offs, capital restructuring programs, significant cyber-crime events, litigation and shareholder distributions.

Financial Institutions with Limited Financial History

Many rated securities industry service providers have many years of financial history and lengthy operating track records that generally act as the basis for our forward-looking credit analysis. Securities industry service providers with limited financial history may undergo rapid evolution initially, before developing readily distinguishable and stable operating characteristics. Financial institutions are highly confidence-sensitive. A demonstrable track record can be instrumental in building customer and market trust, which creates franchise value and supports the institution's performance during a down cycle.

The franchise value of start-up securities industry service providers is usually weak, and most tend to lack product depth, market share, operating experience as an institution (rather than as a collection of individuals) and a record of resilience through a full credit cycle. Their systems, policies and procedures tend to be less robust than those of established securities industry service providers.

For start-ups that lack a financial history of at least several years and in cases of a material transformation in a securities industry service provider's business, such that its financial history does not provide a good indication of future results (collectively, securities industry service providers with limited financial history),

[13] A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related "Publications" section.

existing financial history provides less insight into the future credit profile. In these cases, our baseline projections may reflect more-conservative expectations than management's projections. In addition, we are likely to make downward adjustments to several factors in our scorecard in order to reflect the considerable uncertainty around our baseline expectations of future operations and financial profile. To the extent these risks and uncertainties are not fully captured in the scorecard, they may be reflected in an assigned standalone assessment that is lower than the scorecard-indicated outcome.

Securities industry service providers with limited financial history may benefit from external support. When material, we incorporate that support into our ratings. In assessing the level of expected support, we generally consider whether the securities industry service provider's status as a start-up could affect the willingness of the support provider to step in should support be needed. For a highly publicized start-up subsidiary of a parent with a solid credit profile, we may expect a high level of support. Certain parent companies and affiliates, conversely, could be less willing to provide support if the reputational and financial risks attached to failure of an early-stage business venture were lower than for subsidiaries with long track records and entrenched businesses in their home markets. We generally expect that governmental support for start-ups, typically small players in the early years of operations that are not systemically important, to be low. Exceptions could include government-owned start-ups and start-up securities industry service providers of long-term strategic importance to government policy initiatives.

Environmental Considerations

Environmental issues could affect the reputation of a securities industry service provider.

Social Issues

For issuers in this sector, we also consider social issues that could materially affect the likelihood of default and severity of loss, for example through adverse impacts on business reputation, brand strength and employee relations.

Assigning Issuer-Level and Instrument-Level Ratings

In general, the scorecard-indicated outcome after application of JDA is oriented to the issuer rating or the corporate family rating (CFR) at the level of the entity that is the near-exclusive issuer of debt for the group and has free access to the liquidity and capital of group members. For many securities industry service providers, this is the holding company. After considering the scorecard-indicated outcome, other rating 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 government-related issuers, we may assign a Baseline Credit Assessment.[14]

To the extent that other entities in the group have meaningful debt or debt-like obligations (creating structural subordination), or that there are significant limitations on the movement of liquidity and capital within the group[15], the issuer and/or instrument rating for different entities in the group may vary from the outcome indicated by the combination of the scorecard and JDA framework.

Individual instrument ratings also factor in notching considerations based on seniority and collateral. The documents that provide broad guidance for such notching decisions are the rating methodology on loss

[14] For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions*. A link can be found in the "Moody's Related Publications" section.

[15] Examples of constraints include regulatory capital requirements, specific features of the corporate and funding structure (e.g. covenants that restrict distributions from an operating company), or an operating company's requirements to make dividends outside the corporate family.

given default for speculative-grade non-financial companies and the methodology for aligning corporate instrument ratings based on differences in security and priority of claim.[16]

We may also assign a Counterparty Risk Rating (CRR) to a securities industry service provider.[17] CRRs may be assigned to entities that have CRR liabilities, whether at the holding company level or at the operating company level. For securities industry service providers that we expect would be subject to a standard corporate insolvency or bankruptcy process, the CRR would typically be assigned at the same level as the entity's issuer rating or senior unsecured debt rating, and any positive differential between the CRR and the issuer rating or senior unsecured debt rating would depend on our view of the likelihood that CRR liabilities would receive preferential treatment relative to other senior unsecured debt and debt-like obligations

Assumptions

Key rating assumptions that apply in this sector include our view that sovereign credit risk is strongly correlated with that of other domestic issuers, that legal priority of claim affects average recovery on different classes of debt sufficiently to generally warrant differences in ratings for different debt classes of the same issuer, and the assumption that access to liquidity is a strong driver of credit risk.

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.

Limitations

In the preceding sections, we have discussed the scorecard factors, many of the other rating considerations that may be important in assigning ratings, and certain key assumptions. 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 tool focused on indicators for relative credit strength. 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 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 Rating 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

16 A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

17 Please see *Rating Symbols and Definitions* for a description of CRRs and CRR liabilities (for a link, please see the "Moody's Related Publications" section).

rating methodologies may be relevant to ratings in this sector.[18] 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 rating considerations, typically diminishes. In any case, predicting the future is subject to substantial uncertainty.

18 A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Appendix 1: Using the Scorecard to Arrive at a Scorecard-Indicated Standalone Assessment

1. Assigning the Financial Profile Scores and Mapping to a Financial Profile Numerical Score

Quantitative metrics are scored on an alpha-numeric scale. For each metric, the scoring grid shows the range by alpha category. To arrive at an unadjusted sub-factor score, the alpha range is divided into three equal alpha-numeric ranges, to which the metric is mapped. For example, if the scoring grid indicates that a Ba range for a particular metric is 3 to 4.5x (with 4.5x being strongest), the alpha range is divided into a range of 3 to 3.5x corresponding to a score of Ba3, a range of 3.5 to 4x corresponding to a score of Ba2, and a range of 4 to 4.5x corresponding to a score of Ba1. The scorecard shows the corresponding unadjusted alpha-numeric score for the sub-factor. The sub-factor score may be adjusted as described in the "Measurement or Estimation of Factors in the Scorecard" section and the factors discussions of this report. Each sub-factor thus has an unadjusted score (or "initial" score) and an assigned score.

Unadjusted and assigned sub-factor scores are then converted to numerical values of 1 to 20, based on the table below (Exhibit 4).

EXHIBIT 4
Rating Scale Numeric Equivalents

Alphanumeric	Broad Alpha	Numeric Equivalent
Aaa	Aaa	1
Aa1		2
Aa2	Aa	3
Aa3		4
A1		5
A2	A	6
A3		7
Baa1		8
Baa2	Baa	9
Baa3		10
Ba1		11
Ba2	Ba	12
Ba3		13
B1		14
B2	B	15
B3		16
Caa1		17
Caa2	Caa	18
Caa3		19
Ca	Ca	20

Source: Moody's Investors Service

The numeric score for each sub-factor assigned score is multiplied by the weight for that sub-factor, with the results then summed to produce an aggregate weighted factor score. The aggregate weighted factor score is then rounded to the nearest integer, and mapped back to an alphanumeric equivalent based on the table above (Exhibit 4) to arrive at a Financial Profile alpha-numeric score.

For example, a securities industry service provider with an aggregate weighted factor score of 11.7 would have a Ba2 Financial Profile score.

Special calculation consideration:

» Negative Pre-tax Margin Volatility ratios are scored "Ca"

» Negative Debt/EBITDA ratios are scored "Ca"

2. Assigning the Operating Environment Factor Score

The Operating Environment incorporates two sub-factors: Macro-Level Indicator, and Competitive Dynamics and Industry Fundamentals.

» The Macro-Level Indicator sub-factor score is based on three factors from our sovereign rating methodology.[19] Economic Strength (25%), Institutions and Governance Strength (50%), and Susceptibility to Event Risk (25%).

For the Macro-Level Indicator, we start with the published factor scores for the sovereign's Economic Strength and Institutions and Governance Strength, which are expressed on an alphanumeric scale, and Susceptibility to Event Risk, which is expressed on a broad alpha scale. We then convert these scores to numeric scores using the two Mapping Sovereign Rating Methodology Scoring tables below (Exhibits 5 and 6), and we combine them according to the weights described in the prior paragraph. Specifically, the numeric equivalent score for each sovereign methodology factor assigned score is multiplied by its weight, with the results then summed to produce an aggregate weighted Macro-Level Indicator sub-factor score. This numeric score is then rounded to the nearest integer and mapped back to an alphanumeric equivalent using the table in Exhibit 4.

[19] The link to an index of our sector and cross-sector rating methodologies can be found in the "Moody's Related Publications" section.

EXHIBIT 5

Mapping Sovereign Rating Methodology Scoring for Economic Strength and Institutions and Governance Strength*

Economic Strength and Institutions and Governance Strength	Numeric Equivalent*
aaa, aa1	1
aa2, aa3	2
a1	4
a2	5
a3	6
baa1	7
baa2	9
baa3	10
ba1, ba2	11
ba3	13
b1	14
b2	15
b3	16
caa1, caa2	18
caa3, ca	19

*The effect of this mapping is to compress the alphanumeric sovereign factor scores and convert them to a numeric score for use in the scorecard for service providers.

Source: Moody's Investors Service

EXHIBIT 6

Mapping Sovereign Rating Methodology Scoring for Susceptibility to Event Risk

Susceptibility to Event Risk	Numeric Equivalent
aaa	1
aa	2
a	4
baa	7
ba	10
b	14
caa	18
ca	19

Source: Moody's Investors Service

The Competitive Dynamics and Industry Fundamentals indicator sub-factor score is assigned based on the table in that section. The resultant broad rating category score (Aaa, Aa, A, Baa, Ba, B, Caa or Ca) is then converted to numeric values based on the table in Exhibit 4.

3. Determining the Adjusted Financial Profile

The Operating Environment score is determined using a dynamic weighting, shown in Exhibit 7, to combine the Macro-Level Indicator and the Competitive Dynamics and Industry Fundamentals sub-factor scores. The dynamic weighting is based on the Macro-Level Indicator score; as this sub-factor becomes weaker it is assigned progressively more weight, such that it does not affect the Operating Environment score unless it has a downward-influence upon it. The weight assigned to the Competitive Dynamics and Industry

Fundamentals sub-factor score is derived by subtracting the weight assigned to the Macro-Level Indicator sub-factor score from 100%. The numeric value for each sub-factor score is multiplied by the weight for that sub-factor, with the results then summed to produce an aggregate weighted factor score. To demonstrate the impact of dynamic weighting, Exhibit 7 shows the effect expressed in alpha-numeric terms.

EXHIBIT 7

Combination of Operating Environment sub-factor scores to form the Operating Environment Score*1

Competitive Dynamics and Industry Fundamentals Score	Macro-Level Indicator Score and Weighting																		
	Aaa 0%	Aa1 0%	Aa2 0%	Aa3 0%	A1 0%	A2 0%	A3 0%	Baa1 35%	Baa2 40%	Baa3 45%	Ba1 50%	Ba2 55%	Ba3 60%	B1 65%	B2 70%	B3 75%	Caa1 80%	Caa2 85%	Caa3 90%
Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Ba1	Ba2	B1	B2	Caa1
Aa	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	A1	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba3	B1	B3	Caa1
A	A2	A2	A2	A2	A2	A2	A2	A3	A3	Baa1	Baa2	Baa2	Baa3	Ba1	Ba2	B1	B2	B3	Caa2
Baa	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa3	Ba1	Ba1	Ba2	Ba3	B1	B2	Caa1	Caa2
Ba	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba3	Ba3	B1	B2	B3	Caa1	Caa2
B	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B3	Caa1	Caa2	Caa3
Caa	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa3
Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca

*1 Weight of Macro-Level Indicator is 0% if Macro-Level indicator sub-factor score is higher than Competitive Dynamics and Industry Fundamentals sub-factor score

Source: Moody's Investors Service

In cases where a securities industry service provider has material operations in more than one sector and/or country, we assign a score that is representative of the overall operating environment for that issuer, according to the size and importance of operations in each sector in each country. Our scoring is often informed by the weighted average of the sector and country-level Operating Environment scores. Operating Environment scores for each sector in each country are calculated as described above. Weighting is representative of the sector/geographic allocation of risk and returns and is typically based on our forward-looking view of sustainable revenue levels; however, we may adjust the weighting in cases where revenues are not proportionate to profits or risks. The resulting weighted average is rounded and converted to a factor score, based on Exhibit 4. In some limited cases, the assigned score may differ from the weighted average score, for instance to reflect risks in a specific country or segment that have an out-sized impact on the firm's operating and business risk profile.

For countries that represent a large portion of the issuer's business and when the relevant information is available, we typically calculate a separate operating environment score for each material sector in those countries.[20] We then assign an overall operating environment score that is informed by the weighted average of the underlying scores. For sectors that are less material, or when an issuer's sector-level reporting is less precise or we expect that the sector mix will change materially, we may assign a Competitive Dynamics and Industry Fundamentals score based on our estimate of the sector breakdown in that country or region.

In cases where geographical reporting is on a regional rather than a country basis, we take one of the two following approaches. If the macro-level indicators for the countries in the region that represent the preponderance of the issuer's business are quite similar, we would typically use the Macro-Level Indicator score that we consider to be most representative among those countries and assign a Competitive Dynamics and Industry Fundamentals score to the region. If the macro-level indicators for the countries in the region that represent the preponderance of the issuer's business are quite disparate, we would typically estimate the proportion of the business in each country. We would then assign an overall operating environment score that is informed by the weighted average of the underlying scores.

[20] Sectors in the same country are scored with a similar Macro-Level Indicator but may have different Competitive Dynamics and Industry Fundamentals scores from one another.

A similar dynamic weighting concept is used to combine the Financial Profile and the Operating Environment factor scores to determine the Adjusted Financial Profile score. The dynamic weighting is based on the Operating Environment score as show in Exhibit 8; as this sub-factor becomes weaker it is assigned progressively more weight. The numeric value for each factor score is multiplied by the weight for that factor, with the results then summed to produce an aggregate weighted Adjusted Financial Profile score. As shown in Exhibit 8, the Operating Environment score contributes to a securities industry service provider's scorecard credit profile only to the extent that it exerts a downward influence on the Financial Profile score. Accordingly, the Operating Environment is assigned a 0% weight if the Operating Environment score is "A" or higher, or is higher or equal to the Financial Profile score. However, if the Operating Environment score is "Baa" or lower, and is weaker than the Financial Profile score, it exerts a downward influence on the Adjusted Financial Profile.

EXHIBIT 8

Combination of Operating Environment and Financial Profile scores to form the Adjusted Financial Profile score*[1]

		Operating Environment Score and Weighting																			
		Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca
		0%	0%	0%	0%	0%	0%	0%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
Financial Profile Score	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Ba1	Ba2	B1	B2	Caa1	Caa3
	Aa1	Aa1	Aa1	Aa1	Aa1	Aa1	Aa1	Aa1	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba3	B1	B3	Caa1	Caa3
	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	A1	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba3	B1	B3	Caa1	Caa3
	Aa3	Aa3	Aa3	Aa3	Aa3	Aa3	Aa3	Aa3	A1	A2	A3	Baa1	Baa1	Baa2	Ba1	Ba2	Ba3	B1	B3	Caa2	Caa3
	A1	A1	A1	A1	A1	A1	A1	A1	A2	A3	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B2	B3	Caa2	Caa3
	A2	A2	A2	A2	A2	A2	A2	A2	A3	A3	Baa1	Baa2	Baa2	Baa3	Ba1	Ba2	B1	B2	B3	Caa2	Caa3
	A3	A3	A3	A3	A3	A3	A3	A3	A3	Baa1	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa2	Caa3
	Baa1	Baa1	Baa1	Baa1	Baa1	Baa1	Baa1	Baa1	Baa1	Baa1	Baa2	Baa3	Baa3	Ba1	Ba2	Ba3	B1	B2	Caa1	Caa2	Caa3
	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa3	Ba1	Ba1	Ba2	Ba3	B1	B2	Caa1	Caa2	Caa3
	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3	Ba1	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Ca
	Ba1	Ba1	Ba1	Ba1	Ba1	Ba1	Ba1	Ba1	Ba1	Ba1	Ba1	Ba1	Ba2	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Ca
	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba3	Ba3	B1	B2	B3	Caa1	Caa2	Ca
	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	B1	B1	B2	B3	Caa1	Caa2	Ca
	B1	B1	B1	B1	B1	B1	B1	B1	B1	B1	B1	B1	B1	B1	B1	B2	B3	B3	Caa1	Caa3	Ca
	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B3	Caa1	Caa2	Caa3	Ca
	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	Caa1	Caa2	Caa3	Ca
	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa1	Caa2	Caa3	Ca
	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa2	Caa3	Ca
	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Ca
	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca	Ca

[1] Weight of Operating Environment is 0% if Operating Environment score is higher than Financial Profile score

Source: Moody's Investors Service

4. Determining the Overall Scorecard-Indicated Standalone Assessment

We incorporate four factors in the scorecard as one or more direct notching adjustments to the Adjusted Financial Profile, as detailed in the Business Profile and Financial Policy section of this rating methodology. The four factors are:

» Business diversification

» Opacity and complexity

» Liquidity management

» Corporate behavior

Notching adjustments in respect of business diversification and corporate behavior may be upwards or downwards; whereas those in respect of opacity and complexity and liquidity management are downward only. All notches are in whole numbers.

Upward notching adjustments raise the alpha-numeric equivalent (e.g. plus one notch from Baa1 to A3) and decrease the numeric value of the score (e.g. from 8 to 7). Downward notching adjustments lower the alpha-numeric equivalent (e.g. from Baa1 to Baa2) and increase the numeric score (e.g. from 8 to 9).

Application of the notching adjustments to the Adjusted Financial Profile results in the scorecard-indicated standalone assessment, prior to the sovereign local-currency rating impact. The standalone assessment may be lowered as a result of the sovereign local-currency rating impact. Please see our cross sector methodology that discusses how sovereign credit quality can affect other issuers.[21] The resultant post-cap alpha-numeric equivalent is the scorecard-indicated standalone assessment.

The securities industry service provider stand-alone assessment scorecard outcome is expressed as a three-notch range on our alpha-numeric rating scale, for which the midpoint is the scorecard-indicated stand-alone assessment. The assigned standalone assessment is expressed as a single alpha-numeric on our rating scale, which may or may not be within the three-notch range, but is most often within it. Scorecards based on consolidated financial statements are oriented to the standalone assessment for the corporate family.

5. Applying Affiliate and Government Support

Where relevant, we apply our JDA framework to incorporate any affiliate support, and then any government support.[22] Affiliate support is applied to the issuer's standalone assessment and provides an indicated range of positive uplift,[23] in notches. The assigned post-affiliate standalone assessment typically incorporates a level of upward notching within the affiliate support range, but it may in some cases be outside that range. The application of government support JDA provides a range of suggested upward notching.[24] The assigned corporate family/issuer rating typically incorporates a level of upward notching within the government support range, but it may in some cases be outside that range, and in all cases, the assigned corporate family/issuer rating incorporates the local currency country ceiling.

Appendix 2 describes our JDA framework. Appendix 3 describes how we use JDA to determine the upward ratings impact (if any) of affiliate and government support on the assigned standalone assessment.

6. Determining Instrument Ratings

Please see the "Assigning Issuer-Level and Instrument-Level Ratings" section.

[21] A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[22] Some securities industry service providers that have direct government ownership may be designated as government-related issuers. Please see our rating methodology for government-related issuers, which describes how we incorporate support in these cases. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[23] The suggested upward notching may be zero or more notches.

[24] The suggested upward notching may be zero or more notches.

Appendix 2: Joint Default Analysis (JDA) Framework

Our support estimates are determined by our JDA framework. JDA operates on the principle that the risk of default (and, therefore, loss) for certain obligations depends upon the performance of both the primary obligor and another entity (or entities) that may provide support to the primary obligor. The chief benefit offered by JDA is a consistent, transparent approach to the incorporation of (typically uncertain) non-contractual external support. That said, assigned ratings will continue to be determined through judgment, not through models.

The JDA framework for securities industry service providers evaluates potential support in a "building block" approach. The intention of this approach is to replicate the likely sequence in which external support for a securities industry service provider would be forthcoming. Each support provider is assessed for its capacity and willingness to support the securities industry service provider. The first is based on the securities industry service provider's supporter's own standalone assessment, and the local-currency rating in the case of a public sector entity. The second is based on our opinion of the probability that support will be forthcoming when needed. The probability that two parties will jointly default depends on a) the probability that one of them defaults, and b) the probability that the second will default, given that the first has already defaulted. Expressed algebraically, one can write this for events A and B as:

$$P(A \text{ and } B) = P(A \mid B) \times P(B) \qquad (1)$$

Or equivalently,

$$P(A \text{ and } B) = P(B \mid A) \times P(A) \qquad (2)$$

We define A as the event "obligor A defaults on its obligations" and B as the event "obligor B defaults on its obligations." Likewise, "A and B" is the joint default event "obligors A and B both default on their obligations." The operator P(x) represents the probability that event "x" will occur and $P(x \mid y)$ is defined as the conditional probability of event "x" occurring given that event "y" has occurred.

To estimate the conditional default probabilities $P(A \mid B)$ and $P(B \mid A)$, one must take into account the relationship between the drivers of default for both obligors. Each of these four probabilities – P(A), P(B), $P(A \mid B)$ and $P(B \mid A)$ – are intended to represent unsupported risk measures. That is, they represent the likelihood of an obligor default in the absence of any joint support or interference.

Although one can tackle this problem directly by estimating either one of the conditional default probabilities described in equations (1) and (2), it may be more intuitive to focus on the product of the conditional probability of default for the lower-rated, or supported, firm and the unconditional probability of default for the higher-rated, or supporting, firm. Using L to denote the event "lower-rated obligor L defaults on its obligations" and H to denote "higher-rated obligor H defaults on its obligations," we can rewrite equation (1) as:

$$P(L \text{ and } H) = P(L \mid H) \times P(H) \qquad (3)$$

It is not difficult to imagine situations where the conditional probability $P(L \mid H)$ might be at its theoretical maximum (i.e., 1) or at its minimum (i.e., P(L)). Let us consider these extreme outcomes in turn by way of example.

- P(L | H) = 1. Suppose that the financial health of an issuer is crucially linked to the operations of another, higher-rated entity. For example, the default risk of a distributor in a competitive distribution market dominated by a single supplier may be highly dependent on the financial health of that supplier. In other words, the conditional probability of the distributor's default given a default by the higher-rated supplier, P(L | H), is equal to one. Under such a scenario, the joint default probability P(L and H) in equation (3) above is simply P(H). That is, the rating applied to such jointly supported obligations would equal the supplier's rating, without any ratings lift, regardless of issuer L's standalone rating.
- P(L | H) = P(L). Suppose a highly rated European bank provides a letter of credit to a lower-rated agribusiness in the US. While there may be circumstances in which the agribusiness might face financial difficulties on its own, its intrinsic operational health is generally unrelated to the circumstances that might lead the European bank to default on its obligations. Under this scenario, the conditional probability of a default by the agribusiness, given a default by the bank – i.e., P(L | H) – is simply the standalone default risk P(L) of the agribusiness. That is, events L and H are independent of one another and thus uncorrelated. In this case, their joint-default probability is the product of their standalone default probabilities, P(L)*P(H). The jointly supported obligation rating implied by such a relationship is generally higher than the rating of the supporting entity H. In practice, the conditional default risk of the lower-rated entity, given a default by the stronger entity, will vary somewhere between these two extremes, full dependence (i.e., where P(L | H) = 1) and independence, (i.e., where P(L | H) = P(L)).

Intermediate Level of Correlations

We propose here a simple tool for modeling intermediate cases of default risk linkage. Let us denote the variable W as a correlation weighting factor, where W = 1 corresponds to a maximum dependence of the default of the lower-rated entity on that of the higher-rated entity; and W = 0 corresponds to complete independence (i.e., zero correlation) between default events. Fractional values of W indicate intermediate levels of dependence between the two default events.

Using the correlation weighting concept, we can express the joint-default probability between obligors L and H as:

$$P(L \text{ and } H) = W^* P(L \text{ and } H \mid W=1) + (1-W)^* P(L \text{ and } H \mid W=0) \quad (4)$$

Or more compactly:

$$P(L \text{ and } H) = W^*P(H) + (1 - W)^*P(L)^* P(H) \quad (5)$$

In other words, once we have determined standalone ratings for the two obligors, the task of assigning a rating to a jointly supported obligation may be reduced to the assignment of a correlation weight.

Standard assumptions

We typically use the following assumptions in our JDA.

EXHIBIT 9

Support Probability Assumptions by Category

Support levels	Lower	Upper
Government- or Affiliate-backed	95%	100%
Very High	70%	94.9%
High	50%	69.9%
Moderate	30%	49.9%

Low	0%	29.9%

Source: Moody's Investors Service

EXHIBIT 10

Dependence Assumptions by Category

Dependence	
Very High	90%
High	70%
Moderate	50%

Source: Moody's Investors Service

Relative Risk and Ratings

We map ratings to risk measures. The multiple separating successive risk measures is approximately 0.62. For example, this means that – for the purposes of JDA – a one-notch uplift means that, on average, the risk is reduced by approximately 38%. This relationship holds across the rating scale, with the exception of Aaa/Aa1. As Aaa ratings are assigned only to obligations that we consider to be of the highest quality, subject to the lowest level of credit risk, the multiple of Aaa relative to Aa1 is 0.10. This means that to obtain a notch of uplift to Aaa from Aa1, we must consider that the risk is one-tenth of its previous level. This also means that the uplift from a Aaa support provider under JDA is proportionately stronger than that from an Aa1 rated support provider.

We then map a range of risk measures back to ratings, where the range is given by the geometric mean of risk values of a rating category and the category below it. For example, if we associate Baa2 with 0.62% and Baa3 with 1.00%, the geometric mean (the square root of their product) is 0.79%, meaning that if the joint default event P(L and H) has a risk measure less than 0.79% but greater than 0.49% (the geometric mean of Baa1 and Baa2), we would map it back to Baa2, but if it had a value greater than 0.79% but less than 1.27% (the geometric mean of Baa3 and Ba1), we would map it back to Baa3.

The risk values and thresholds for JDA uplift are reproduced in Exhibit 11 below.

EXHIBIT 11

Relative Risk		Reverse rating lookup	
Standalone assessment	**Risk Measure (%) (Baa3 = 1)*1**	**Upper bound threshold (%)*2**	**Supported assessment**
Aaa	0.00	0.01	Aaa
Aa1	0.02	0.03	Aa1
Aa2	0.03	0.04	Aa2
Aa3	0.06	0.07	Aa3
A1	0.09	0.11	A1
A2	0.15	0.19	A2
A3	0.24	0.30	A3
Baa1	0.38	0.49	Baa1
Baa2	0.62	0.79	Baa2
Baa3	1.00	1.27	Baa3
Ba1	1.62	2.06	Ba1
Ba2	2.62	3.33	Ba2
Ba3	4.24	5.39	Ba3
B1	6.85	8.72	B1
B2	11.09	14.11	B2
B3	17.94	22.83	B3
Caa1	29.03	36.93	Caa1
Caa2	46.98	59.76	Caa2
Caa3	76.01	96.69	Caa3
Ca	122.99	156.45	Ca
C	199.01		

*1 Rounded to two decimal places.

*2 The upper-bound threshold for a given rating level is derived by calculating the geometric mean of (i) the risk value associated with this rating level, and (ii) the risk value associated with the lower adjacent rating level. For the presentation of this table, the upper-bound threshold has been rounded to two decimal places.

Source: Moody's Investors Service

Appendix 3: Use of Joint Default Analysis in Assessing Affiliate and Government Support

Probability of affiliate support

We classify the probability of the affiliate's provision of support as ranging from "Affiliate-backed" to "Very High," "High," "Moderate," and "Low." Each of these categories corresponds to a range of support probabilities.

We reach this judgment by assessing the following considerations:

» Control: An entity that is 100% owned and controlled by a group is more likely to be supported.

» Brand: An entity carrying a group's name and logo is more likely to be supported due to the group's self interest in preserving its reputation.

» Regulation: An entity subject to the same regulator is more likely to be supported due to regulatory compulsion, provided there are no regulatory barriers to support.

» Geography: Conversely, a supporting entity may be constrained by home political or regulatory considerations in providing support to its foreign subsidiary.

» Documented support: Comfort letters, public or private "keep-well" agreements can evidence likelihood of support.

» Strategic fit: An entity that is important to the strategy of the group is less likely to be sold and, therefore, support is more likely to be durable. Larger subsidiaries are often - but not always - more strategically important than smaller ones.

» Financial links: We consider the impact of a potential sale of the rated entity on the group's financial statements and corporate strategy – the more adverse the impact, the less likely a detrimental sale to a potentially less creditworthy institution will occur. An entity where significant intra-group funding links exist may also be more likely to receive support.

» Parental policy: Our assumption is that groups are supportive of their affiliates by nature; however, this may not always be the case. Where groups have previously failed to support an entity, or disposed of an entity shortly prior to a default, then this may reduce our assessment of the likelihood of support.

Capacity to provide support

To establish the affiliate's capacity to support the entity, we generally use the affiliate's own standalone assessment. Since standalone assessments are generally based on consolidated financial statements – i.e., including subsidiaries – we may on occasion modify this standalone assessment to more closely reflect the affiliate's financial strength excluding the supported entity, and avoid incorporating the strengths or weaknesses of the entity itself into the affiliate's capacity to provide support.

Where we consider that support is derived from a group more generally, rather than a specific entity within the group, we may use a "notional" standalone assessment of that group. This is the standalone assessment that we would assign were the group to be a single legal entity, i.e., based on its consolidated financials. Again, on occasion we may modify this to exclude the supported entity.

This approach implies that potential government support that would apply to the affiliate or group may not be extended to the entity in question, and that resources marshaled to support the entity are limited to its standalone capacity. We generally take this approach because we consider government support separately (see below). However, we may on occasion employ supported ratings (typically, the senior unsecured debt rating) as our measure of support capacity where individual circumstances justify it – for example, if the supported entity is virtually inseparable from the supporting affiliate due to complex inter-linkages and government support would therefore almost certainly flow via the affiliate.

Where the affiliate is a non-bank entity, for example an insurance company or nonfinancial corporate, we may also use a probability of default rating where available.

Dependence between support provider and support recipient

Typically, we judge dependence to fall into one of three broad categories, "Very High," "High," and "Moderate," - although we may on occasion diverge from this to reflect a different view.

Our choice of dependence is based on the following principal factors:

» The degree of integration between the affiliates: The higher the reliance of an entity on intra-group funding, the more likely we are to consider dependence to be Very High rather than High.

» The respective operating environments: The closer the links between the markets in which the affiliates operate, the more likely we are to consider their dependence to be Very High rather than High. In this assessment, we consider business lines and product types, as well as the geographic location.

An example of the Affiliate Support Worksheet is shown in Exhibit 12.

EXHIBIT 12
Example Affiliate Support Worksheet
Assumptions

Country of supporting affiliate	Country XYZ
Supporting affiliate	Parent Bank Inc
Reference creditworthiness	BCA
Creditworthiness of support provider	baa1
Dependence	Very High

Standalone Assessment	Level of support	Notching guidance (Min - Mid - Max)	Assigned notching	Standalone Assessment post Affiliate Support
Ba1	High	1 - 1 - 2	1	Baa3

Source: Moody's Investors Service

Government support

Our approach to government support is similar to that for determining support from an affiliate. Our assessment is designed to be qualitative and flexible in nature, enabling us to incorporate the often subtle real-world shifts that define attitudes to support for financial institutions.

We assess the probability of support from a public body (usually a government but sometimes a central bank or supranational institution) for a class of creditors according to which of the following five categories best reflects that instrument's importance to the public: "Government-backed," "Very High," "High," "Moderate," and "Low." Our assessment - which is ultimately specific to each instrument class of each firm - is made through the analysis of a number of considerations.

Firstly, we incorporate the public policy framework at large. Our overall assessment of the probability of government support for a given rated instrument is significantly conditioned by an understanding of the overall attitude of the relevant public bodies and any constraints they may face, beyond their own creditworthiness, in providing support.

We then assess several industry- and entity-specific matters, including market share, market impact, nature of activity and public involvement, and may assess higher probabilities of support in some cases.

An example of the Government Support Worksheet is shown in Exhibit 13.

EXHIBIT 13

Example Government Support Worksheet

Assumptions

Supporting authority	Country XYZ
Creditworthiness of support provider	Aa2
Dependence	Very High
Local Currency bank deposit ceiling	Aaa
Local Currency country ceiling	Aaa
Foreign Currency bank deposit ceiling	Aaa
Foreign Currency country ceiling	Aaa

Standalone Assessment post Affiliate Support	Level of support	Notching guidance (Min - Mid - Max)	Assigned notching	LC Country ceiling impact	Assigned LC rating	FC Country ceiling impact	Assigned FC rating
Baa3	High	2 - 3 - 5	3	0	A3	0	A3

Source: Moody's Investors Service

Moody's Related Publications

Credit ratings are primarily determined by 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. An index 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.

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