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RATING METHODOLOGY

Privately Managed Ports Methodology

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This rating methodology replaces the *Privately Managed Port Companies* methodology published in September 2016. While this methodology reflects many of the same core principles as the 2016 methodology, we changed some factor and sub-factor names, descriptions and weights; we moved and consolidated some sub-factors; and we expanded the scoring scale to the Ca category. We differentiated the Leverage and Coverage sub-factors for project finance and corporate issuers. We have also made editorial changes to enhance readability.

Introduction

In this rating methodology, we explain our general approach to assessing credit risk of issuers in the privately managed ports sector globally, including the qualitative and quantitative factors that are likely to affect rating outcomes in this sector.

We discuss the scorecard used for this sector. The scorecard[1] is a relatively simple reference tool that can be used 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 considerations, which are factors that are assessed outside the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. 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) a sector overview; (iii) the scorecard framework; (iv) a discussion of the scorecard factors;

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

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

(v) other considerations not reflected in the scorecard; (vi) the assignment of issuer-level and instrument-level ratings; (vii) methodology assumptions; and (viii) limitations. In Appendix A, we describe how we use the scorecard to arrive at a scorecard-indicated outcome. Appendix B shows the full view of the scorecard factors, sub-factors, weights and thresholds.

Scope of This Methodology

This methodology applies to privately managed port operators globally. Issuers in this sector are primarily[3] engaged in the operation and maintenance of seaport facilities used for marine cargo shipments, or for ferry or cruise travel. The port operators rated using this methodology may be landlord ports, operator ports or both.[4]

Privately managed port operators that are corporates or projects (i.e., corporate financed or project financed) are rated using this methodology.[5] While the majority of issuers rated using this methodology are privately owned,[6] this methodology also applies to privately managed ports classified as government-related issuers (GRIs).[7]

The privately managed port operators rated using this methodology may have different ownership structures; however, they all have at least some profit motive. Port operators that are government-owned and operated or are operated by a related governmental agency (e.g., a port authority) and do not have a profit motive are rated using our methodology for publicly managed ports.[8]

Sector Overview

Port operators derive revenue from a variety of activities, including cargo or passenger throughput charges, property leases and harbor or dockage fees as well as from storage, facilities rental, berthing, pilotage, conservancy and marine services. They handle a wide variety of cargos, including containerized cargo, bulk materials and liquids, and automotive. An important competitive advantage of seaport transportation is the ability to handle large volumes of goods at lower logistics cost relative to other modes of transport, such as air.

Ports are essential assets that provide a wide range of services, facilitate global and regional trade, and link sea and land transportation. Given their importance to national economies in supporting trade and GDP growth, ports are often government-owned (or have protected status), can be regulated, and may be supported by governments by either direct (e.g., financial) or indirect (e.g., construction of related infrastructure) means.

[3] The determination of an issuer's primary business is generally based on the preponderance of the issuer's business risks, which are usually proportionate to the issuer's revenues, earnings and cash flows.

[4] A landlord port owns and develops marine terminal facilities and leases them to tenants for a combination of fixed and variable payments. These types of ports provide administrative services and facilities maintenance services for port users, but they do not directly handle cargo or passengers. An operator port operates and maintains marine terminal facilities and is directly involved in handling cargo or passengers.

[5] See the Leverage and Coverage factor discussion.

[6] For clarity, a port operator with any percentage of private ownership would be rated using this methodology.

[7] For more information, please see our methodology that discusses government-related issuers. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

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

Some port companies operate single port facilities, and some are global port companies that operate a large number of ports internationally. In addition, some companies operate assets under leases or concessions and some companies own port capacity in perpetuity.

Port facilities frequently benefit from high barriers to entry for new greenfield ports. Barriers to entry can include the availability of physically suitable locations, capacity to accommodate very large vessels, potential community opposition, environmental regulation and the significant investment required to build a new port. Moreover, the efficiency and reliability of port services are also important considerations for shipping companies to call at a port.

The port hinterland's level of economic development and connection to the global supply chain are critical to the sustainable development of a port operator. Port-related revenue can be volatile due to changes in cargo or passenger volume or price, which are sensitive to changes in the economy and subject to competition from other port operators; regulation may also cause revenue volatility.

Landlord ports tend to earn a larger percentage of revenue from regulated tariffs or fixed or minimum payments from port tenants (e.g., pilotage, conservancy and wharfage fees), which tend to be based on long-term commitments and ship movements, rather than tonnage. These ports typically have relatively high revenue stability. Conversely, tenant port operators generally derive revenue from cargo handling, and their throughput and revenue may be more exposed to changes in demand that could result in revenue volatility. However, long-term take-or-pay contracts with customers can mitigate this risk. Other drivers of revenue stability include diversification, a strong competitive position or significant customer or shipping company landside infrastructure investment.

Scorecard Framework

The scorecard in this rating methodology is composed of four weighted factors. Some of the four factors comprise a number of sub-factors.

The scorecard includes a notching factor, which may result in an upward notching adjustment to the preliminary outcome based on structural considerations, which are usually only meaningful for project financed issuers. Adjustments may be made in half-notch or whole-notch increments.

EXHIBIT 1

Privately Managed Ports Scorecard Overview

Factor	Factor Weighting	Sub-factor	Sub-factor Weighting
Market Position	**30%**	Diversity and Size	15%
		Competitive Position and Service Area	15%
Business Profile	**20%**	Ownership and Control of Assets	5%
		Revenue Stability	10%
		Capital Expenditure Requirements	5%
Leverage and Coverage	**40%**	**Corporate Port Operators**	
		Cash Interest Coverage	10%
		FFO / Debt	10%
		RCF / Debt	10%

EXHIBIT 1

Privately Managed Ports Scorecard Overview

Factor	Factor Weighting	Sub-factor	Sub-factor Weighting
		Debt Service Coverage Ratio (DSCR)	10%
		Project Financed Port Operators	
		Debt Service Coverage Ratio (DSCR)	30%
		Concession Life Coverage Ratio (CLCR)	10%
Financial Policy	**10%**	--*	10%
Total	**100%**		**100%**
		Preliminary Outcome	
Notching Factor			**Notching Range**
Uplift for Structural Considerations			[0 to +3]
		Scorecard-Indicated Outcome	

*This factor has no sub-factors.
Source: Moody's Investors Service

Please see Appendix A for general information about how we use the scorecard and for a discussion of scorecard mechanics. The scorecard does not include or address every factor that a rating committee may consider in assigning ratings in this sector. Please see the "Other Considerations" and "Limitations" sections.

Discussion of the Scorecard Factors

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

Factor: Market Position (30% Weight)

Why It Matters

Market position, which reflects consideration of a port operator's diversity and size as well as its competitive position and service area, provides important indications of a port's essentiality to the region it serves, the economic strength of its service area, and the port operator's competitive strength in attracting and maintaining demand.

This factor comprises two sub-factors:

Diversity and Size

Diversity is an important indicator of demand resilience and stability. A highly diverse portfolio of port facilities, routes, cargo, customers and shipping companies helps insulate a port from poor performance by a particular customer or shipping line, or within a particular economic area or business line. Ports that handle a small number of cargo types with a small number of customers or shipping companies (e.g., coal and metal ore terminals, ferry ports and ports that primarily serve metal smelting facilities) are very highly exposed to the withdrawal of a customer or shipping line resulting from lower demand for, or lack of supply of, a key cargo type.

A port operator's size is an important indicator of demand for its facilities and its capacity to generate revenue. A large revenue base can lead to more efficient development of port infrastructure and is an indicator of high activity levels and strong land-sea connectivity, which provides broader and more convenient services to customers. Large ports may also benefit from greater access to the capital markets, which can reduce borrowing costs.

Competitive Position and Service Area

The competitive environment of a port operator, including existing or potential alternatives, is a meaningful consideration because it influences the extent to which a port operator's revenue could grow or decline. The ability of customers and shipping companies to cost-effectively and efficiently use other ports to access the same service area provides important indications of a port's relative competitive strength. The size and economic strength of a port's service area greatly influence the level of demand for the port's facilities. A port's connectivity to large economic centers, manufacturing facilities, industrial warehousing, and major railroad, highway and other transport networks are core aspects of its ability to attract demand.

The port's location in relation to major shipping routes is also important. All else being equal, a port that is nearer to existing shipping routes is generally more attractive to shipping companies than one that requires significant deviation from the primary shipping route.

How We Assess It for the Scorecard

Scoring for this factor is based on two sub-factors: Diversity and Size; and Competitive Position and Service Area.

DIVERSITY AND SIZE:

In assessing diversity, we consider whether the port operator is globally diversified or is a single- or multi-port operator. Aspects of diversity we typically consider include the number and location of port assets operated, the number and type of routes served and whether they are intercontinental or regional, as well as the diversity or concentration of cargo types, customers and shipping companies that the port operator serves.

We use operating revenue from port operations, including logistics,[9] as a proxy for port size. Operating revenue is measured (or estimated in the case of forward-looking expectations) using annual reported port operating revenue in US dollars.

A port operator that derives billions of dollars of annual operating revenue from a portfolio of port facilities located in and serving different regions of the world, and that handles a wide variety of cargo types for a large number of customers and shipping companies typically receives a higher score for this sub-factor than an operator of a single port facility that derives tens of millions of dollars of annual operating revenue from handling a single cargo type and has a small number of customers.

COMPETITIVE POSITION AND SERVICE AREA:

We assess the port facility's competitive position relative to other ports serving the same service area, as well as expected changes to the number and attractiveness of competing facilities, and the lasting effect of such changes.

[9] We do not include revenue from non-core port activities, e.g., bulk cargo trading or asset disposals, in operating revenue from port activities.

Substantial investment in expansion or upgrade at competing port facilities, or in the transport links from those ports to the service area, could diminish an operator's relative competitive position. For example, a port that handles large deep-sea container ships may see its competitive position weakened by an upgrade of facilities at a competing port that enables a competitor to cater to such vessels.

Companies that operate only some of the facilities at a port, e.g., a single terminal in a multi-terminal port, often have a weaker competitive position than a company that operates the entire port due to the presence of potential competitors within the port.

We also assess the size, diversity and stability of the service area and its track record of economic growth, as well as the importance of the port to the service area, the location of the port and the transport links from the port to the service area. Operators of ports that are essential components of highly developed and diversified economic areas typically receive higher scores for this sub-factor. Where the economic fundamentals of the service area are weak or deteriorating and the port is uncompetitive, we may assign a lower score for this sub-factor.

While a port operator's performance is typically influenced by the performance of the local economy, in some cases it may also depend on economic activity outside its core area of operations (e.g., in the case of transshipment hubs that link different economic regions or countries). In such cases, we may incorporate the economic track record of these economic regions or countries into our assessment, as well as our assessment of the long-term viability of these trade routes.

Ports that have better railroad, highway and other freight transport links to the service area are likely to attract more demand than ports that have limited transport links to the service area. In addition, ports that are located nearer to major shipping routes and have a relatively short diversion time are generally more appealing to shipping companies than ports that require a longer diversion time from the shipping company's primary route.

An operator that is the sole provider of port facilities with excellent transport links to a service area comprising a very large, highly developed and well-diversified economy typically receives a higher score for this sub-factor than an operator of a single terminal in a multi-terminal port that is just one of several ports providing similar services for service area or an operator that for a service area with a weak or stagnant economy.

In our assessment, we may also consider the quality and availability of economic data. Where data are unavailable or of low quality, the score may be negatively affected.

FACTOR

Market Position (30%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Diversity and Size	15%	Globally diversified port operator serving intercontinental routes, with an extremely broad range of cargo, customers and shipping companies; and operating revenue is $4 billion or more.	Globally diversified port operator serving primarily inter-continental routes, with a broad range of cargo, customers and shipping companies; and operating revenue is $2 billion or more but less than $4 billion.	Single-port or multi-port operator serving primarily inter-continental routes, with a broad range of cargo, customers and shipping companies; operating revenue is typically $1 billion or more but less than $2 billion.	Single-port operator serving primarily inter-continental routes or multi-port operator serving primarily regional routes; a broad range of cargo, customers and shipping companies; operating revenue is typically $200 million or more but less than $1 billion.	Single-port operator serving primarily inter-continental routes or multi-port operator serving primarily regional routes; a moderate range of cargo, customers and shipping companies; operating revenue is typically $100 million or more but less than $200 million.	Single-port operator serving primarily regional routes, with some concentration of cargo, customers and shipping companies; operating revenue is typically $50 million or more but less than $100 million.	Single-port operator serving a small number of regional routes, with significant concentration of cargo, customers and shipping companies; operating revenue is typically $20 million or more but less than $50 million.	Single-port operator serving one regional route; or operating revenue is less than $20 million.
Competitive Position and Service Area	15%	The operator has an effective monopoly position in its service area; and the port facilities are an essential component of a very large, highly developed and well-diversified economy with a very long track record (> 20 years) of solid economic growth with little volatility, and have excellent transport links.	The operator has an effective monopoly position in its service area; and the port facilities are an essential component of a very large, highly developed and well-diversified economy with a long track record of solid economic growth with little volatility, and have excellent transport links.	The operator has a dominant competitive position in its service area; the port facilities are an essential component of a large, highly developed and well-diversified economy with a long track record of economic growth with little volatility, and have very strong transport links.	The operator is exposed to some competition but has a strong competitive advantage in its service area; the port facilities are an important component of a highly developed and diversified economy with a long track record of economic growth with little volatility, and have strong transport links.	The operator is in a competitive market in its service area; the port facilities serve a developed and somewhat diversified economy that is somewhat vulnerable to shocks, and have limited transport links.	The operator is at a moderate competitive disadvantage in its service area, which is expected to result in stagnant or declining throughput; the port facilities serve a concentrated economy that is vulnerable to shocks, and have very limited transport links.	The operator is at a significant competitive disadvantage in its service area, evidenced by declining throughput; or the port facilities serve a weak and deteriorating economy.	The operator is uncompetitive in its service area, evidenced by rapidly declining throughput; or the port facilities serve an extremely weak and deteriorating economy with limited recovery prospects.

Source: Moody's Investors Service

Factor: Business Profile (20% Weight)

Why It Matters

The business profile of a privately managed port operator provides important indications of its long-term rights to extract economic value from its port assets, the predictability of its cash flows, and the scale and complexity of its capital projects.

This factor comprises three sub-factors:

Ownership and Control of Assets

A port operator's level of ownership and control of assets is a meaningful consideration because a port operator that owns and controls its facilities (or does not own but controls its facilities under long-term leases or concessions with long remaining lives and with very limited lessor/grantor interference or termination rights) typically has greater certainty over its long-term ability to generate cash flows from those assets than an operator whose leases or concessions have a short remaining life and where the lessor or grantor has significant rights to interfere with or terminate the lease or concession.

Revenue Stability

Revenue stability provides important indications of a port operator's ability to meet its debt service obligations and invest in its business over the long term.

Capital Expenditure Requirements

The size and complexity of capital projects provide indications of construction and execution risk, which may result in unanticipated costs or revenue loss due to interruptions or restrictions to operations.

Besides regular maintenance activities, port operators periodically undertake asset renewal, upgrade and expansion projects of varying size and complexity. Some capital projects are required when older assets need to be replaced due to life expiry. Other capital projects are undertaken to maintain or enhance a port's competitive position by upgrading to more efficient equipment or expanding port facilities to meet anticipated or actual demand growth. In some instances, significant capital projects are undertaken to ensure the port facilities remain accessible and attractive to shipping companies that operate increasingly larger vessels or require swifter cargo handling.

Capital projects have the potential to be a distraction to management's day-to-day operations or to interrupt or restrict physical port operations, which may result in temporarily lower throughput and revenue. Construction delays could exacerbate such operational challenges and cause significant unanticipated costs to arise.

How We Assess It for the Scorecard

Scoring for this factor is based on three sub-factors: Ownership and Control of Assets; Revenue Stability; and Capital Expenditure Requirements.

OWNERSHIP AND CONTROL OF ASSETS:

We assess this sub-factor based on the level of control that the port operator has over the port facilities that it operates. We also consider the likelihood of lease or concession renewal, based on the

track record of the parties as well as provisions of the lease or concession agreement. We assess the amount and timeliness of compensation on termination under the lease or concession.

A port operator that has outright ownership of the entire port, and has full, unlimited access to all port assets, typically receives a higher score for this sub-factor. A port operator that operates under short-term leases or concession agreements, or under leases or concessions that allow the lessor or grantor to interfere or terminate the lease or concession at its discretion, and where the amount and timeliness of any compensation on termination is unclear, typically receives a lower score for this sub-factor.

REVENUE STABILITY:

In assessing this sub-factor, we consider (i) the percentage of revenue that is supported by long-term take-or-pay contracts or regulated tariffs, or that comprises fixed payments with no volume linkage; and (ii) the operator's track record of revenue stability. Where these considerations fall into different scoring categories, we use the higher of the two as the score for the Revenue Stability sub-factor.

CAPITAL EXPENDITURE REQUIREMENTS:

We assess this sub-factor qualitatively based on the scope and complexity of the port operator's capital projects, as well as the size of its future annual capital expenditures[10] relative to the issuer's balance sheet net property, plant and equipment (PP&E) and intangibles.

An operator that is not expected to carry out any capital projects typically receives a higher score for this sub-factor, whereas an operator that is about to commence a large and complex multiyear project to expand its port facilities may receive a lower score for this sub-factor. Our assessment of the project's complexity and execution risk may be informed by the construction and ramp-up risk considerations discussed in the "Other Considerations" section.

FACTOR
Business Profile (20%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Ownership and Control of Assets	5%	The operator owns and controls the port facilities.	The operator controls its port facilities under leases or concessions with an extremely long (e.g., > 50 years) weighted average remaining life; lessor/grantor interference and termination rights are extremely limited; and	The operator controls its port facilities under leases or concessions with a very long (e.g., > 30 years) weighted average remaining life; lessor/grantor interference and termination rights are very limited; and leases/	The operator controls its port facilities under leases or concessions with a long (e.g., > 20 years) weighted average remaining life; lessor/grantor interference and termination rights are limited; leases/ concessions provide for full and timely	The operator controls its port facilities under leases or concessions with a medium-to-long (e.g., 15–20 years) weighted average remaining life; lessor/grantor interference and termination rights are significant, including for operator under-performance or failure to meet certain financial targets; leases/ concessions provide for compensation on	The operator controls its port facilities under leases or concessions with a medium (e.g., 10–15 years) weighted average remaining life; lessor/grantor rights are ambiguous, resulting in an increased risk of interference or termination; while leases/ concessions provide for compensation	The operator controls its port facilities under leases or concessions with a short-to-medium (e.g., < 10 years) weighted average remaining life; lessor/grantor may interfere or terminate at its discretion; leases/ concessions provide for compensation on termination	The operator is likely to be in breach of key leases or concessions, which may lead to their termination; leases/conces-sions do not provide for compensation on termination.

[10] Future annual capital expenditure is typically assessed as the average of the annual amounts for the following three years. Maintenance expenditure is excluded.

FACTOR

Business Profile (20%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
			leases/ concessions provide for full and timely compensation on termination.	concessions provide for full and timely compensation on termination.	compensation in many circumstances.	termination in many circumstances, and amount of the compensation is expected to be adequate and timely.	on termination in some circumstances, the amount and timeliness of the compensation are somewhat unclear.	in some circumstances, and the compensation is subject to negotiation.	
Revenue Stability*	10%	More than 90% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage.	Between 80% and 90% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a very long track record (> 15 years) of revenue stability or growth.	Between 60% and 80% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a long track record (10–15 years) of revenue stability or growth.	Between 40% and 60% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a long track record (10–15 years) of revenue growth/decline that is broadly in line with the economic trends in its service area.	Between 20% and 40% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a moderate track record (5–10 years) of revenue growth/decline that is broadly in line with the economic trends in its service area.	Less than 20% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a limited track record (< 5 years) of revenue growth/decline that is broadly in line with the economic trends in its service area; or has a track record (> 5 years) of revenue growth/decline that is more volatile than the economic trends in its service area.	No contracted revenue, regulated tariffs or fixed payments; or the operator has no track record and revenue volatility is expected.	Extremely unpredictable revenue.

FACTOR

Business Profile (20%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Capital Expenditure Requirements	5%	Capex program is de minimis (e.g., annual future capex typically < 1% of PP&E and intangibles).	Capex program is extremely limited (e.g., annual future capex typically 1–3% of PP&E and intangibles).	Capex program is very limited (e.g., annual future capex typically 3–5% of PP&E and intangibles).	Capex projects are generally straightforward and pose limited execution risk; capex program is limited (e.g., annual future capex typically 5–8% of PP&E and intangibles).	Capex projects have some elements of complexity, and pose manageable execution risk; capex program is significant (e.g., annual future capex typically 8–12% of PP&E and intangibles).	Capex projects are moderately challenging in scope and complexity, and pose moderate execution risk; capex program is large (e.g., annual future capex typically 12–15% of PP&E and intangibles).	Capex projects are challenging in scope and complexity, and pose high execution risk; or capex program is very large (e.g., annual future capex typically 15–20% of PP&E and intangibles).	Capex projects are very challenging in scope and complexity, and pose very high execution risk; or capex program is extremely large (e.g., annual future capex typically > 20% of PP&E and intangibles).

*Where the Revenue Stability considerations fall into different scoring categories, we use the higher of the two as the Revenue Stability sub-factor score.
Source: Moody's Investors Service

Factor: Leverage and Coverage (40% Weight)

Why It Matters

Leverage and coverage measures are critical indicators of a port operator's financial flexibility and long-term viability, including the ability to adapt to changes in the economic environment in which it operates. All else being equal, leverage and coverage metrics provide indications of an issuer's financial flexibility, ability to withstand lower revenue or higher costs, and the ability to generate sufficient cash flow to support operations, meet debt-service obligations and maintain assets over the long term.

We distinguish between port operators that use a corporate-financing structure and those that use a project-financing structure. The financing structure is important because corporate port operators typically have much greater flexibility, e.g., a wide latitude to transform their business, buy and sell assets, take on additional leverage and refinance their debt. Project financing structures typically limit the scope of the port operator's business activities and its ability to incur additional debt.

This factor comprises five sub-factors. The first three sub-factors — Cash Interest Coverage, Funds from Operations/Debt and Retained Cash Flow/Debt — apply only to corporate port issuers. The fourth sub-factor, Debt Service Coverage Ratio, applies to both types of port issuers, but the ratios are calculated differently. The fifth sub-factor, Concession Life Coverage Ratio, applies only to project financed port issuers.

Cash Interest Coverage

The ratio of funds from operations plus interest expense to interest expense minus material non-cash interest (FFO + Interest Expense/Interest Expense – Material Non-Cash Interest) is an indicator of a port operator's ability to pay its cost of debt from its operating cash flow.

Funds from Operations / Debt

The ratio of funds from operations to total debt (FFO/Debt) is an indicator of the cash-generating ability of a port operator compared to its total debt and can provide information about the debt burden of an issuer relative to that of its peers.

Retained Cash Flow / Debt

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

Debt Service Coverage Ratio

The debt service coverage ratio (DSCR) is an indicator of an issuer's ability to pay its debt service from available cash flow within the remaining life of its lease(s) or concession(s). An issuer that maintains a high DSCR with a comfortable excess coverage margin is typically better able to withstand cyclical declines in demand or short-term cash flow disruptions.

For corporate port operators, we use debt service annuity as the denominator instead of the debt service (interest plus principal) reported by the company, which allows for an assessment, on a forward-looking basis, of the company's ability to service more normalized debt obligations, as they would manifest themselves over the remaining life of the lease(s) or concession(s) under a scenario where outstanding debt is fully repaid by the expiry of the lease(s) or concession(s).

While DSCR is not generally used in assessing non-financial corporate issuers, a key advantage of its use for corporate port operators is that it enables a comparison with project finance port operators. Given the long-term funding horizon of a port concessionaire, this ratio allows us to better compare a concessionaire with bullet maturities in its capital structure and a concessionaire with fully amortizing debt.

Concession Life Coverage Ratio

The concession life coverage ratio (CLCR) provides an important indication of an issuer's capacity to pay its debt service over the remaining life of the concession.

How We Assess It for the Scorecard

In assessing privately managed port operators, we use project financing metrics where (i) the debt is fully amortizing; and (ii) the financing contains many of the structural features that may provide protection to creditors listed in the "Uplift for Structural Considerations" notching factor section. Port operators that do not have fully amortizing debt and many of these structural features are assessed using corporate financing metrics.

Corporate Financed Port Operators

For corporate port operators, our assessment is based on four sub-factors: Cash Interest Coverage; FFO/Debt; RCF/Debt; and Debt Service Coverage Ratio (DSCR).

CASH INTEREST COVERAGE:

The numerator is funds from operations plus interest expense, and the denominator is interest expense minus material non-cash interest.[11]

FFO/DEBT:

The numerator is funds from operations, and the denominator is total debt.

RCF/DEBT:

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

DEBT SERVICE COVERAGE RATIO:

The numerator is FFO plus interest expense. The denominator is debt service annuity, which is the annuity-type payment of interest and principal required to pay outstanding debt over the remaining life of the lease(s) or concession(s). We calculate or estimate debt service annuity using a standard formula for the present value (PV) of an annuity payment,[12] using a hypothetical scenario: (i) annual debt service is a constant figure; (ii) interest rates (the discount rate[13] used in the formula) are constant; and (iii) the full amount of debt outstanding at the end of the prior financial year (i.e., the PV of future payments today) is paid over the remaining life of the concession.[14]

Project Financed Port Operators

For project finance port operators, we use two sub-factors: the Debt Service Coverage Ratio (DSCR) and the Concession Life Coverage Ratio (CLCR).

In general, the focus of our assessment of leverage and coverage financial metrics is forward-looking. We generally use cash flow projections based on our own assessment of the most likely financial and operating parameters and sensitivities. We also typically consider a number of downside or sensitivity scenarios to test the resiliency of the project's cash flows. Our central scenario and sensitivities may be informed by third-party technical or market consultants, and they may be different from the owner's or sponsor's projections. For projects that have a track record, historical performance generally has a strong influence on our view of likely future results, unless there is a material change in the project's operating parameters or market dynamics. As a result, historical results are among the drivers that can cause changes to our central scenario and downside or sensitivity scenarios over time.

DEBT SERVICE COVERAGE RATIO:

The scoring of this sub-factor is primarily based on the average annual or minimum annual DSCR over the remaining debt tenor.

The scoring of the projected DSCR may be based on the forecast minimum annual DSCR, or it may primarily be based on the average but informed by the minimum, or vice versa. Our assessment of the level of DSCR used for scoring this sub-factor may also be informed by the expected variability of the DSCR and a comparison of the average annual and minimum annual DSCRs over the relevant projection period. The assigned score ultimately represents our forward-looking view of the DSCR level

[11] We exclude non-cash interest from our calculation or estimation of interest expense for port operators that have a material portion of their debt funding in the form of non-conventional instruments, such as zero-coupon, capital accretion or index-linked bonds (or have a similar position through swap arrangements).

[12] The formula for debt service annuity payment is: ((ST Debt + LT Debt, gross) x Discount Rate) / (1 – (1/(1 + Discount Rate)$^{\text{remaining concession life}}$)).

[13] The discount rate is typically either (i) the company's actual cost of debt, if largely fixed over the life of the concession; or (ii) an assumption for the long-term average cost of debt for the issuer's rating category.

[14] Where the company holds a number of concessions or leases with different maturities, we use a weighted average remaining concession or lease life. For freehold ports, we assume that the company's debt will amortise on a straight line basis for 100 years.

that represents the overall risk in the projected trajectory of the project's ability to service its debt. For example, our calculation may exclude periods where principal amortization is minimal and the resulting annual DSCR is unrepresentative.

To calculate the DSCR for any 12-month period, the numerator is cash flow available for debt service (CFADS), and the denominator is interest and principal.

CFADS equals cash flow from operations (before interest) minus maintenance capital expenditure[15] plus (or minus) transfers from (or to) timing reserves, if relevant.[16] Because the calculation of CFADS is based on operating cash flow, this numerator incorporates movements in working capital.

Interest and principal equals cash interest and principal in the relevant period. Interest excludes interest income (which is included in the numerator).

CONCESSION LIFE COVERAGE RATIO:

The numerator is the sum of (i) the net present value of future CFADS through the life of the lease or concession and (ii) the debt service reserve account, and the denominator is total debt.

We make adjustments to the inputs by adding any balance outstanding in the debt service reserve account to the net present value of CFADS, because those funds are specifically set aside for debt repayment (a feature not present in typical corporate financings) and using the cost of the rated debt as the discount rate.

FACTOR

Leverage and Coverage (40%)[17]

Sub-factor	Sub-factor Weight for Corporate Issuers	Sub-factor Weight for Project Financed Issuers	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Cash Interest Coverage*1	10%	n/a	≥ 10x	7–10x	4.5–7x	3–4.5x	2.25–3x	1.5–2.25x	1.2–1.5x	< 1.2x
FFO/Debt*2	10%	n/a	≥ 40%	25–40%	15–25%	10–15%	6–10%	3–6%	1–3%	< 1%
RCF/Debt*3	10%	n/a	≥ 30%	20–30%	10–20%	6–10%	3–6%	1–3%	0–1%	< 0%
Debt Service Coverage Ratio*4	10%	30%	≥ 8x	6–8x	4.5–6x	3–4.5x	2–3x	1.5–2x	1.3–1.5x	< 1.3x
Concession Life Coverage Ratio*5	n/a	10%	≥ 10x	5–10x	3.3–5x	2.5–3.3x	1.7–2.5x	1.25–1.7x	1.1–1.25x	< 1.1x

*1 For the linear scoring scale, the Aaa endpoint value is 15x. A value of 15x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

*2 For the linear scoring scale, the Aaa endpoint value is 55%. A value of 55% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

*3 For the linear scoring scale, the Aaa endpoint value is 40%. A value of 40% or better equates to a numeric score of 0.5. The Ca endpoint value is (5)%. A value of (5)% or worse equates to a numeric score of 20.5.

*4 For the linear scoring scale, the Aaa endpoint value is 10x. A value of 10x or better equates to a numeric score of 0.5. The Ca endpoint value is 0.5x. A value of 0.5x or worse equates to a numeric score of 20.5.

*5 For the linear scoring scale, the Aaa endpoint value is 15x. A value of 15x or better equates to a numeric score of 0.5. The Ca endpoint value is 1x. A value of 1x or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

[15] In circumstances where growth capital expenditure is expected at financial close, we typically include it in this formula.

[16] We include movements in reserves such as maintenance, operational and ramp-up reserves, but we do not include movements in the debt service reserve. Transfers from reserve accounts have a positive effect on CFADS, while transfers to reserve accounts have a negative effect on CFADS.

[17] Note that the calculation of DSCR differs between corporate and project financed port operators. See corresponding section above for applicable formula.

Factor: Financial Policy (10% Weight)

Why It Matters

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

Financial risk tolerance serves as a guidepost to investment and capital allocation. An expectation that management will be committed to sustaining an improved credit profile is often necessary to support an upgrade. For example, we may not upgrade the ratings of a company that has built flexibility within its rating category if we believe the company will use that flexibility to fund a strategic acquisition, cash distribution to shareholders, spin-off or other leveraging transaction. Conversely, a company's credit rating may be better able to withstand a moderate leveraging event if management places a high priority on returning financial metrics to pre-transaction levels and has consistently demonstrated the commitment to do so through prior actions. Liquidity management[18] is an important aspect of overall risk management and can provide insight into risk tolerance.

The generally stable and highly cash flow generative business model of a privately managed port operator often creates significant capacity to incur debt financing. Management may choose to use this capacity to diversify into new business ventures to perpetuate a company's existence beyond the lease or concession's life, which may entail higher risk than the core port operations. Thus, the way an operator uses its debt capacity as well as the limitations on incurring leverage and pursuing other activities, which may be contractual or self-imposed, are material considerations in assessing its creditworthiness.

How We Assess It for the Scorecard

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

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

[18] Liquidity management is distinct from the level of liquidity, which is discussed in the "Other Considerations" section.

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

For project financed port operators, given their single purpose nature, it is typical for all the excess cash flow generation to be distributed, and we typically score this sub-factor in the "Ba" category. However, in cases with a history of demonstrated conservative tendencies, such an issuer may be scored higher on this factor. It is important to note, however, that in most, if not all, cases of project finance ports, the financing structure sets limits on shareholders' ability to extract excessive returns or to make acquisitions. These structural enhancements are key to credit quality and are assessed as a notching adjustment to the preliminary outcome that results from the four weighted factors. Hence, these considerations are not evaluated under this factor to avoid double counting. For a discussion of structural enhancements, see the Uplift for Structural Considerations notching factor.

FACTOR
Financial Policy (10%)

Sub-Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Financial Policy	10%	Expected to have extremely conservative financial policies (including risk and liquidity management); very stable metrics; essentially no event risk that would cause a rating transition; and public commitment to a very strong credit profile over the long term.	Expected to have very conservative financial policies (including risk and liquidity management); stable metrics; minimal event risk that would cause a rating transition; and public commitment to a strong credit profile over the long term.	Expected to have predictable financial policies (including risk and liquidity management) that preserve creditor interests; although modest event risk exists, the effect on leverage is likely to be small and temporary; strong commitment to a solid credit profile.	Expected to have financial policies (including risk and liquidity management) that balance the interests of creditors and shareholders; some risk that debt-funded acquisitions or shareholder distributions could lead to a weaker credit profile.	Expected to have financial policies (including risk and liquidity management) that tend to favor shareholders over creditors; above-average financial risk resulting from shareholder distributions, acquisitions or other significant capital structure changes.	Expected to have financial policies (including risk and liquidity management) that favor shareholders over creditors; high financial risk resulting from shareholder distributions, acquisitions or other significant capital structure changes.	Expected to have financial policies (including risk and liquidity management) that create elevated risk of debt restructuring in varied economic environments.	Expected to have financial policies (including risk and liquidity management) that create elevated risk of debt restructuring even in healthy economic environments.

Source: Moody's Investors Service

Notching Factor

The scorecard includes a notching factor. Our assessment of the Uplift for Structural Considerations notching factor may result in an upward adjustment to the preliminary outcome that results from the four weighted scorecard factors. Adjustments may be made in half-notch or whole-notch increments.

In aggregate, structural features that we consider effective may result in up to three upward notches from the preliminary outcome to arrive at the scorecard-indicated outcome. However, typical uplift is between a half notch and one and a half notches. In cases where we consider that the credit weakness

or credit strength represented by this notching factor is greater than the scorecard range, we incorporate this view into the rating, which may be different from the scorecard-indicated outcome.

This notching factor is mainly relevant for port operators with project financing.

Uplift for Structural Considerations

Why It Matters

A privately managed port operator's debt structure may contain structural features that can provide creditors meaningful protection against losses. These features are important because they can restrict the issuer's ability to take actions that could increase credit risk, thereby reducing the likelihood of default or increasing the likelihood of higher recovery in the event of default, or both. Privately managed port operators use a broad array of financing structures. While many finance their operations through the issuance of more typical senior unsecured or secured debt instruments, others have financings that contain structural features to reduce business risk or leverage.

How We Assess It for the Scorecard

We typically consider the extent to which structural features (i) reduce the likelihood of default; and (ii) give creditors either the right, or ability, to influence a port operator's decision to take corrective action to stop or reverse credit deterioration. The impact of these structural features on notching is based on a holistic assessment of their effectiveness.

STRUCTURAL FEATURES THAT REDUCE THE LIKELIHOOD OF DEFAULT:

In assessing structural features that reduce the likelihood of default, we typically assess the following:

Restrictions on business activities

» The extent to which an issuer is prohibited from engaging in new activities or making acquisitions.

Restrictions on raising additional debt

» Whether restrictions on additional indebtedness reduce the risk that additional obligations could cause a payment default.

Distribution lock-up tests

» The extent to which an issuer is prohibited from distributing cash to shareholders in periods of financial stress.

Limits on debt structure

» Whether the issuer is required to remove or mitigate certain financial risks, such as interest rate, currency or refinancing risk. Refinancing risk can include restrictions on debt maturity concentration and the implementation of a fully amortizing debt structure, which by itself can result in one notch of ratings uplift. Covenants can also restrict the issuer's use of derivative products, thus reducing the likelihood of additional or sizeable claims on the business.

Reserves to cover large future or unforeseen costs

» The presence of dedicated timing reserves for large-cost items, e.g., a one-off capital expenditure.

STRUCTURAL FEATURES THAT GIVE CREDITORS THE RIGHT, OR ABILITY, TO INFLUENCE AN OPERATOR'S DECISION TO TAKE CORRECTIVE ACTION:

We assess the ability of debtholders to force owners to reduce debt before equity value is lost and debt is impaired, and to take action to repay debt through the enforcement of security provisions if this is not achieved. Financing document events of default or other events giving rise to debtholder controls, and the consequences of their breach or trigger, are key elements of this protection. To provide effective protection to creditors, these features work within the context of the business being financed, in most cases to allow the operating businesses to continue as going concerns and to allow debt service to be paid through available liquidity facilities while action is being taken.

In assessing structural features that provide control rights, we typically consider the following:

Effectiveness of control rights

- The extent to which the exercise of control rights may be impeded (e.g., local jurisdiction laws or certain regulatory restrictions).
- The proposed terms and conditions in conjunction with opinions of counsel to ascertain whether the proposed control rights are likely to operate as intended.

Length of the control period

- The length of time creditors have to exercise control rights before the issuer loses the right to generate cash flow from the assets (e.g., before an insolvency process or before a lease or concession is terminated).

Dedicated liquidity support

- The extent to which dedicated liquidity support covers ongoing debt service while control rights are exercised. To be considered effective, such dedicated liquidity would be available for use in circumstances where control rights are exercised.

To be considered effective, structural features typically include the following:

- The entity subject to the financing and the restrictions is separated from the wider ownership group and any wider business group. The separation is achieved through legal means related to the creation of the issuer or restrictions in the financial structure.
- All creditors are subject to common terms that ensure that an individual creditor or a group of creditors cannot take unilateral action to destabilize the financing.
- Creditor step-in rights are specifically permitted under the concession or legal framework, as well as the financing documents. In our assessment, we consider security arrangements to be one element, albeit usually a critical element, of a wider package of features designed to improve creditors' ability to detect early potential problems and rectify them if possible (in the first instance by retaining cash surpluses within the company). In addition, if remedial action is not possible or fails, the security arrangements are used to maximize recovery prospects.

We also consider the quality of security arrangements on material collateral. Security is sometimes not allowed or is not enforceable on certain assets, the title of which may be retained by the state or other granting authority, or where the company is restricted from giving security over its assets by a pre-existing statute.

Ratings fully incorporate our view of the actual structural or contractual features in a particular transaction. In rare cases, contractual features may provide greater uplift to the issuer's credit quality than what is reflected in the scorecard.

Other Considerations

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

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

Construction and Ramp-up Risk

In assessing the credit profile of a privately managed port operator in the construction phase or start-up phase, we consider the incremental risks related to construction as well as volume and revenue forecasts and the expected ramp-up period of ports not yet in operation. These risks typically result in weaker credit profiles than those of ports in steady-state operation.

CONSTRUCTION RISK

The construction phase for a new port project typically runs between three and five years from financial close. Cash flows to pay debt service begin only once the port is operating and, as such, the risks associated with the construction phase are an important part of our analysis. We assess the likelihood of a project being completed on time and within budget.

We typically consider the general guiding principles discussed in our methodology for privately financed public infrastructure projects (PFI/PPP/P3)[19] in the construction period to help assess the magnitude of construction risk. Among the risks related to the asset and physical construction, we typically analyze the following:

- The complexity of the facilities being built.
- Site preparation requirements, including excavation, dredging, boring, waterproofing or other similarly complex type of work.
- Acquisition of rights-of-way.
- Construction techniques and materials, and the use of proven versus new technology.
- Logistics, including flexibility of access to the site or construction constraints during the construction period.

[19] PFI stands for private finance initiatives, and PPP or P3 stands for public-private partnerships. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

» Contractor experience and performance, and the port operator's experience in construction oversight.

The more complex the elements of a port project are, the higher is the likelihood of construction delays and cost overruns. In such cases, the assigned rating would likely be lower than the scorecard-indicated outcome and would incorporate the features that, in our assessment, could substantially increase the project budget, delay project completion and thus threaten the start date for the operating period.

Contractual, legal and financial provisions are also important considerations. These typically include:

» Concession agreement risk-sharing, e.g., which parties are responsible for right-of-way acquisition, geological/archeological risk or expropriation risk.

» Construction contract provisions, such as whether it is a fixed-price, date-certain contract versus one based on the cost of materials and labor; the conditions for the contractor to pay liquidated damages for delays or non-performance; force majeure events; and the liability caps for the contractor.

» Schedule cushion for possible construction delays, either to reach substantial completion or long stop dates.[20]

» The amount and timing of equity contributions to the project versus debt funding.

» Available liquidity during this phase, including the amount, type and financial strength of the liquidity support available to the issuer in the event of cost overruns and delays.

The complexity of the project and the risks borne by the port owner or port concessionaire are the primary elements that determine the level of protection that is necessary for adequate risk reduction.

VOLUME AND REVENUE FORECASTING AND RAMP-UP RISK

We typically use volume and revenue projections provided by an independent third-party consultant to evaluate operating risk for a new port facility that is either under construction or at the beginning of operations, commonly referred to as the ramp-up phase. These reports provide a starting point for our analysis of the port's potential cash generation over the life of the concession, which is important for its future ability to support its debt.

However, consultants' forecasts are based on multiple assumptions and complex variables that will likely change over time. Thus, even experienced consultants that use reliable historical data and tested econometric modeling techniques generate volume and revenue projections containing considerable uncertainties. We typically consider a number of downside and breakeven scenarios, starting from the consultant's base case, to test the resiliency of the project to stress, including the sufficiency of its liquidity to meet debt service during the ramp-up period if port revenue is lower than forecast.

The availability and frequency of information after the initial volume and revenue study may also have an impact on the rating. In the absence of updated studies, we may revise our expectations regarding operating performance based on relevant available data.

[20] Both terms are typically defined in the legal documentation of a privately managed port project. The substantial completion date typically refers to the date on which the asset is required to be commercially operable. The long stop date is the date by which the concession grantor may be entitled to terminate the concession if construction and acceptance are not complete.

Structural elements such as additional liquidity in the form of letters of credit from strong banks, contingent equity, and ramp-up and debt service reserves may mitigate credit risk during the start-up period. In our view, these features are key elements of a port financing at this stage. We assess the adequacy of such liquidity in relation to expected cargo and passenger volumes, as well as the issues surrounding the certainty of funding based on the form of liquidity provided.

Regulatory Considerations

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

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

Additional Metrics

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

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

Environmental, Social and Governance Considerations

Environmental, social and governance (ESG) considerations may affect the ratings of issuers in the privately managed ports sector. For information about our approach to assessing ESG issues, please see our methodology that describes our general principles for assessing these risks.[21]

Increasing environmental requirements and efforts to reduce greenhouse gas emissions (known as carbon transition risk) may lead to higher costs for many industries. Port operators may be exposed to emission control measures that seek to reduce air pollution, including engine upgrades, equipment electrification and supply of electricity to vessels at berth, which could increase the cost of operating port facilities. Port operators may also be indirectly exposed to environmental risk through their customers or shipping companies, who may be forced to reduce emissions as part of responsible production requirements.

Many port operators engage in dredging to maintain authorized depth and width or to accommodate larger vessels, or to reclaim land for port expansion. Dredging works can often entail efforts to protect

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

wildlife and river flows, or mitigate other environmental effects. As environmental regulations increase in scope or where meaningful regional differences in regulation exist, they may have a differentiating impact on privately managed port operators.

Port operators are exposed to disruptions to navigational channels, flooding of marine terminals and damage to assets from severe weather. Sea level rises may necessitate an increase in port elevation, which may require significant investment in port facilities. Port operators have exhibited resilience to severe weather as their infrastructure is designed either to interact with or to be resilient to water.

Port operators may be exposed to social risks in the form of highly unionized and influential labor. In addition, the physically intensive nature of labor at ports gives rise to a range of work-related health and safety regulations. Port operators may be exposed to specific community relations risks, including community opposition to air or noise pollution, or port expansion. Implementation of technological advances that may result in job losses, including automation, may also attract adverse community attention.

Financial Controls

We rely on the accuracy of audited financial statements to assign and monitor ratings in this sector. The quality of financial statements may be influenced by internal controls, including the proper tone at the top, centralized operations, and consistency in accounting policies and procedures. Auditors' reports on the effectiveness of internal controls, auditors' comments in financial reports and unusual restatements of financial statements or delays in regulatory filings may indicate weaknesses in internal controls.

Management Strategy

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

Liquidity

Liquidity is an important rating factor for all privately managed port operators, although it may not have a substantial impact in discriminating between two issuers with a similar credit profile. Liquidity can be particularly important for port operators with lower revenue or operating stability or large capital expenditure commitments, and ratings can be heavily affected by extremely weak liquidity. We form an opinion on likely near-term liquidity requirements from the perspective of both sources and uses of cash. For more details on our approach, please see our liquidity cross-sector methodology.[22]

Excess Cash Balances

Some issuers in this sector may maintain cash balances (meaning liquid short-term investments as well as cash) that are far in excess of their operating needs. This excess cash can be an important credit consideration; however, the underlying policy and motivations of the issuer in holding high cash balances are often as or more important in our analysis than the level of cash held. We have observed

[22] A link to a list of our cross-sector methodologies can be found in the "Moody's Related Publications" section.

significant variation in company behavior based on differences in financial philosophy, investment opportunities, availability of committed revolving credit facilities and shareholder pressures.

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

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

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

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

where we believe that cash on the balance sheet does not confer meaningful credit support, we are more likely to cite gross debt ratios in our credit analysis, press releases and rating threshold levels.

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

Non-Wholly Owned Subsidiaries

Some companies in the privately managed ports sector choose to dilute their equity stake in certain material subsidiaries, for example through an initial public offering, which may in some cases negatively impact future financial flexibility. While improving cash holdings on a one-off basis, selling minority interests in subsidiaries may have a negative impact on cash flows available to the parent company that may not be fully reflected in consolidated financial statements.[23] The parent's share of dividend flows from a non-wholly owned subsidiary is reduced, and minority stakes can increase structural subordination, since dividend flows to minority interest holders are made before the cash flows are available to service debt at the parent company. While less frequent, sale of a minority stake may be accompanied by policies protective of the subsidiary that further limit the parent's financial flexibility, for instance restrictions on cash pooling with other members of the corporate family, limitations on dividends and distributions, or arms-length business requirements. Minority stakeholders may have seats on the board of the subsidiary. In many cases, we consider the impact of non-wholly owned subsidiaries qualitatively. However, in some cases we may find that an additional view of financial results, such as analyzing cash flows on a proportional consolidation basis, may be very useful to augment our analysis based on consolidated financial statements. When equity dilution or structural subordination arising from non-wholly owned subsidiaries is material and negative, the credit impact is captured in ratings but may not be fully reflected in scorecard-indicated outcomes.

For companies that hold material minority interest stakes, consolidated funds from operations typically includes the dividends received from the minority subsidiary, while none of its debt is consolidated. When such dividends are material to the company's cash flows, these cash flows may be subject to interruption if they are required for the minority subsidiary's debt service, capital expenditures or other cash needs. When minority interest dividends are material, we may also find that proportional consolidation or another additional view of financial results is useful to augment our analysis of consolidated financials. We would generally also consider structural subordination in these cases.[24] When these credit considerations are material, their impact is captured in ratings but may not be fully reflected in scorecard-indicated outcomes.

Impact of Other Businesses

Where a privately managed port operator has or will seek to diversify its operations to non-core port activities, we seek to determine the impact of the presence of such businesses on the overall credit profile. For example, where a port company operates different port facilities with similar risk profiles, we would view these operations as being part of core businesses. Where an ancillary business displays

[23] For example, in the case of an equity stake reduction in a subsidiary down to 75%, in the parent's financial statements, all revenue and EBITDA of the subsidiary would typically still be consolidated at the group level.

[24] Proportional consolidation brings a portion of the minority subsidiary's debt onto the balance sheet, but this debt is structurally senior to debt at the parent company, because it is closer to the assets and cash flows of the minority subsidiary.

materially different business risk characteristics due, for example, to different competitive dynamics than the core port operation business, we typically form a blended assessment of the company's business profile and the stability of its cash flows. In particular, significant investments into businesses that entail higher risk than the core port operations would likely result in a rating lower than the scorecard-indicated outcome.

Event Risk

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

Parental Support

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

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

Assigning Issuer-Level and Instrument-Level Ratings

After considering the scorecard-indicated outcome, other considerations and relevant cross-sector methodologies, for corporate issuers we typically assign a corporate family rating (CFR) to speculative-grade issuers or a senior unsecured rating for investment-grade issuers and for project finance issuers we typically assign a senior secured rating. For issuers that benefit from rating uplift from government ownership, we may assign a Baseline Credit Assessment.[25]

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

[25] For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers. A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

financial companies, the methodology for notching corporate instrument ratings based on differences in security and priority of claim, and the methodology for assigning short-term ratings.[26]

Key Rating Assumptions

For information about key rating assumptions that apply to methodologies generally, please see *Rating Symbols and Definitions*.[27]

Limitations

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

Limitations of the Scorecard

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

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

Factors that are outside the scorecard, including those discussed above in the "Other Considerations" section, may be important for ratings, and their relative importance may also vary from company to company. In addition, certain broad methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.[28] 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

[26] A link to a list of our sector and cross-sector rating methodologies can be found in the "Moody's Related Publications" section.
[27] A link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.
[28] A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

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

Appendix A: Using the Scorecard to Arrive at a Scorecard-Indicated Outcome

1. Measurement or Estimation of Factors in the Scorecard

In the "Discussion of the Scorecard Factors" section, we explain our analytical approach for scoring each scorecard factor or sub-factor,[29] and we describe why they are meaningful as credit indicators.

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

Our ratings are forward-looking and reflect our expectations for future financial and operating performance. However, historical results are helpful in understanding patterns and trends of an issuer's performance as well as for peer comparisons. For corporate issuers, historical financial ratios,[30] unless otherwise indicated, are typically calculated based on an annual or 12-month period. As described in the "Discussion of the Scorecard Factors" section, the debt service coverage and concession life coverage ratios are typically calculated on a forward-looking basis. However, the factors in the scorecard can be assessed using various time periods. For example, rating committees may find it analytically useful to examine both historical and expected future performance for periods of several years or more.

All of the quantitative credit metrics for corporate issuers incorporate our standard adjustments[31] to income statement, cash flow statement and balance sheet amounts for items such as underfunded pension obligations and operating leases. We may also make other analytical adjustments that are specific to a particular corporate or project finance port issuer.

2. Mapping Scorecard Factors to a Numeric Score

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

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

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

Source: Moody's Investors Service

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

[29] When a factor comprises sub-factors, we score at the sub-factor level. Some factors do not have sub-factors, in which case we score at the factor level.

[30] For definitions of our most common ratio terms, please see *Moody's Basic Definitions for Credit Statistics (User's Guide)*. A link can be found in the "Moody's Related Publications" section.

[31] For an explanation of our standard adjustments, please see the cross-sector methodology that describes our financial statement adjustments in the analysis of non-financial corporations.

(i.e., the value of the metric that constitutes the lowest possible numeric score, and the value that constitutes the highest possible numeric score).

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

Source: Moody's Investors Service

3. Determining the Overall Scorecard-indicated Outcome

The numeric score for each sub-factor (or each factor, when the factor has no sub-factors) is multiplied by the weight for that sub-factor (or factor), with the results then summed to produce an aggregate numeric score.

A further weighting is then applied by rating category as shown in the table below:

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
1	1	1	1.15	2	3	5	7

Source: Moody's Investors Service

We weight lower scores more heavily than higher scores in the scorecard because a serious weakness in one area often cannot be completely offset by strength in another.

The actual weighting applied to each sub-factor is the product of that sub-factor's standard weighting and its over-weighting, divided by the sum of these products for all the sub-factors (an adjustment that brings the sum of all the sub-factor weightings back to 100%).

The numeric score for each sub-factor is multiplied by the adjusted weight for that sub-factor, with the results then summed to produce an aggregate numeric score before notching factors (the preliminary outcome). We then consider whether the preliminary outcome that results from the weighted factors should be notched upward or downward[32] in order to arrive at an aggregate numeric score after notching factors. The Uplift for Structural Considerations notching factor can result in a total of up to three upward notches from the preliminary outcome to arrive at the scorecard-indicated outcome.

The aggregate numeric score before and after the notching factor is mapped to an alphanumeric. For example, an issuer with an aggregate numeric score before notching factors of 11.7 would have a Ba2 preliminary outcome, based on the ranges in the table below. If the combined notching factors totaled two upward notches, the aggregate numeric score after notching factors would be 9.7, which would map to a Baa3 scorecard-indicated outcome.

[32] Numerically, a downward notch adds 1 to the score, and an upward notch subtracts 1 from the score.

EXHIBIT 2

Scorecard-Indicated Outcome

Scorecard-Indicated Outcome	Aggregate Numeric Score
Aaa	x ≤ 1.5
Aa1	1.5 < x ≤ 2.5
Aa2	2.5 < x ≤ 3.5
Aa3	3.5 < x ≤ 4.5
A1	4.5 < x ≤ 5.5
A2	5.5 < x ≤ 6.5
A3	6.5 < x ≤ 7.5
Baa1	7.5 < x ≤ 8.5
Baa2	8.5 < x ≤ 9.5
Baa3	9.5 < x ≤ 10.5
Ba1	10.5 < x ≤ 11.5
Ba2	11.5 < x ≤ 12.5
Ba3	12.5 < x ≤ 13.5
B1	13.5 < x ≤ 14.5
B2	14.5 < x ≤ 15.5
B3	15.5 < x ≤ 16.5
Caa1	16.5 < x ≤ 17.5
Caa2	17.5 < x ≤ 18.5
Caa3	18.5 < x ≤ 19.5
Ca	19.5 < x ≤ 20.5
C	x > 20.5

Source: Moody's Investors Service

In general, the scorecard-indicated outcome is oriented to the corporate family rating or senior unsecured rating for corporate issuers and to the senior secured rating for project finance issuers. For issuers that benefit from rating uplift from parental support, government ownership or other institutional support, we consider the underlying credit strength or Baseline Credit Assessment for comparison to the scorecard-indicated outcome. For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers. [33]

[33] A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

Appendix B: Privately Managed Ports Methodology Scorecard

	Factor or Sub-factor Weight for Corporates/Project Finance	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Market Position (30%)									
Diversity and Size	15%/15%	Globally diversified port operator serving intercontinental routes, with an extremely broad range of cargo, customers and shipping companies; and operating revenue is $4 billion or more.	Globally diversified port operator serving primarily inter-continental routes, with a broad range of cargo, customers and shipping companies; and operating revenue is $2 billion or more but less than $4 billion.	Single-port or multi-port operator serving primarily inter-continental routes, with a broad range of cargo, customers and shipping companies; operating revenue is typically $1 billion or more but less than $2 billion.	Single-port operator serving primarily inter-continental routes or multi-port operator serving primarily regional routes; a broad range of cargo, customers and shipping companies; operating revenue is typically $200 million or more but less than $1 billion.	Single-port operator serving primarily inter-continental routes or multi-port operator serving primarily regional routes; a moderate range of cargo, customers and shipping companies; operating revenue is typically $100 million or more but less than $200 million.	Single-port operator serving primarily regional routes, with some concentration of cargo, customers and shipping companies; operating revenue is typically $50 million or more but less than $100 million.	Single-port operator serving a small number of regional routes, with significant concentration of cargo, customers and shipping companies; operating revenue is typically $20 million or more but less than $50 million.	Single-port operator serving one regional route; or operating revenue is less than $20 million.

	Factor or Sub-factor Weight for Corporates/Project Finance	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Competitive Position and Service Area	15%/15%	The operator has an effective monopoly position in its service area; and the port facilities are an essential component of a very large, highly developed and well-diversified economy with a very long track record (> 20 years) of solid economic growth with little volatility, and have excellent transport links.	The operator has an effective monopoly position in its service area; and the port facilities are an essential component of a very large, highly developed and well-diversified economy with a long track record of solid economic growth with little volatility, and have excellent transport links.	The operator has a dominant competitive position in its service area; the port facilities are an essential component of a large, highly developed and well-diversified economy with a long track record of economic growth with little volatility, and have very strong transport links.	The operator is exposed to some competition but has a strong competitive advantage in its service area; the port facilities are an important component of a highly developed and diversified economy with a long track record of economic growth with little volatility, and have strong transport links.	The operator is in a competitive market in its service area; the port facilities serve a developed and somewhat diversified economy that is somewhat vulnerable to shocks, and have limited transport links.	The operator is at a moderate competitive disadvantage in its service area, which is expected to result in stagnant or declining throughput; the port facilities serve a concentrated economy that is vulnerable to shocks, and have very limited transport links.	The operator is at a significant competitive disadvantage in its service area, evidenced by declining throughput; or the port facilities serve a weak and deteriorating economy.	The operator is uncompetitive in its service area, evidenced by rapidly declining throughput; or the port facilities serve an extremely weak and deteriorating economy with limited recovery prospects.

	Factor or Sub-factor Weight for Corporates/Project Finance	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Business Profile (20%)									
Ownership and Control of Assets	5%/5%	The operator owns and controls the port facilities.	The operator controls its port facilities under leases or concessions with an extremely long (e.g., > 50 years) weighted average remaining life; lessor/grantor interference and termination rights are extremely limited; and leases/ concessions provide for full and timely compensation on termination.	The operator controls its port facilities under leases or concessions with a very long (e.g., > 30 years) weighted average remaining life; lessor/grantor interference and termination rights are very limited; and leases/ concessions provide for full and timely compensation on termination.	The operator controls its port facilities under leases or concessions with a long (e.g., > 20 years) weighted average remaining life; lessor/grantor interference and termination rights are limited; leases/ concessions provide for full and timely compensation in many circumstances.	The operator controls its port facilities under leases or concessions with a medium-to-long (e.g., 15–20 years) weighted average remaining life; lessor/grantor interference and termination rights are significant, including for operator under-performance or failure to meet certain financial targets; leases/ concessions provide for compensation on termination in many circumstances, and amount of the compensation is expected to be adequate and timely.	The operator controls its port facilities under leases or concessions with a medium (e.g., 10–15 years) weighted average remaining life; lessor/grantor rights are ambiguous, resulting in an increased risk of interference or termination; while leases/ concessions provide for compensation on termination in some circumstances, the amount and timeliness of the compensation are somewhat unclear.	The operator controls its port facilities under leases or concessions with a short-to-medium (e.g., < 10 years) weighted average remaining life; lessor/grantor may interfere or terminate at its discretion; leases/ concessions provide for compensation on termination in some circumstances, and the compensation is subject to negotiation.	The operator is likely to be in breach of key leases or concessions, which may lead to their termination; leases/concessions do not provide for compensation on termination.

	Factor or Sub-factor Weight for Corporates/Project Finance	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Revenue Stability*	10%/10%	More than 90% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage.	Between 80% and 90% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a very long track record (> 15 years) of revenue stability or growth.	Between 60% and 80% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a long track record (10-15 years) of revenue stability or growth.	Between 40% and 60% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a long track record (10–15 years) of revenue growth/decline that is broadly in line with the economic trends in its service area.	Between 20% and 40% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a moderate track record (5–10 years) of revenue growth/decline that is broadly in line with the economic trends in its service area.	Less than 20% of revenue is supported by long-term take-or-pay contracts or regulated tariffs, or comprises fixed payments with no volume linkage; or the operator has a limited track record (< 5 years) of revenue growth/decline that is broadly in line with the economic trends in its service area; or has a track record (> 5 years) of revenue growth/decline that is more volatile than the economic trends in its service area.	No contracted revenue, regulated tariffs or fixed payments; or the operator has no track record and revenue volatility is expected.	Extremely unpredictable revenue.

*Where the Revenue Stability considerations fall into different scoring categories, we use the higher of the two as the Revenue Stability sub-factor score.

	Factor or Sub-factor Weight for Corporates/Project Finance	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Capital Expenditure Requirements	5%/5%	Capex program is de minimis (e.g., annual future capex typically < 1% of PP&E and intangibles).	Capex program is extremely limited (e.g., annual future capex typically 1–3% of PP&E and intangibles).	Capex program is very limited (e.g., annual future capex typically 3–5% of PP&E and intangibles).	Capex projects are generally straightforward and pose limited execution risk; capex program is limited (e.g., annual future capex typically 5–8% of PP&E and intangibles).	Capex projects have some elements of complexity, and pose manageable execution risk; capex program is significant (e.g., annual future capex typically 8–12% of PP&E and intangibles).	Capex projects are moderately challenging in scope and complexity, and pose moderate execution risk; capex program is large (e.g., annual future capex typically 12–15% of PP&E and intangibles).	Capex projects are challenging in scope and complexity, and pose high execution risk; or capex program is very large (e.g., annual future capex typically 15–20% of PP&E and intangibles).	Capex projects are very challenging in scope and complexity, and pose very high execution risk; or capex program is extremely large (e.g., annual future capex typically > 20% of PP&E and intangibles).
Factor: Leverage and Coverage (40%)									
Cash Interest Coverage[*1]	10%/n/a	≥ 10x	7–10x	4.5–7x	3–4.5x	2.25–3x	1.5–2.25x	1.2–1.5x	< 1.2x
FFO/Debt[*2]	10%/n/a	≥ 40%	25–40%	15–25%	10–15%	6–10%	3–6%	1–3%	< 1%
RCF/Debt[*3]	10%/n/a	≥ 30%	20–30%	10–20%	6–10%	3–6%	1–3%	0–1%	< 0%
DSCR[*4,5]	10%/30%	≥ 8x	6–8x	4.5–6x	3–4.5x	2–3x	1.5–2x	1.3–1.5x	< 1.3x
CLCR [*6,7]	n/a/10%	≥ 10x	5–10x	3.3–5x	2.5–3.3x	1.7–2.5x	1.25–1.7x	1.1–1.25x	< 1.1x

	Factor or Sub-factor Weight for Corporates/Project Finance	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Financial Policy (10%)									
Financial Policy	10%/10%	Expected to have extremely conservative financial policies (including risk and liquidity management); very stable metrics; essentially no event risk that would cause a rating transition; and public commitment to a very strong credit profile over the long term.	Expected to have very conservative financial policies (including risk and liquidity management); stable metrics; minimal event risk that would cause a rating transition; and public commitment to a strong credit profile over the long term.	Expected to have predictable financial policies (including risk and liquidity management) that preserve creditor interests; although modest event risk exists, the effect on leverage is likely to be small and temporary; strong commitment to a solid credit profile.	Expected to have financial policies (including risk and liquidity management) that balance the interests of creditors and shareholders; some risk that debt-funded acquisitions or shareholder distributions could lead to a weaker credit profile.	Expected to have financial policies (including risk and liquidity management) that tend to favor shareholders over creditors; above-average financial risk resulting from shareholder distributions, acquisitions or other significant capital structure changes.	Expected to have financial policies (including risk and liquidity management) that favor shareholders over creditors; high financial risk resulting from shareholder distributions, acquisitions or other significant capital structure changes.	Expected to have financial policies (including risk and liquidity management) that create elevated risk of debt restructuring in varied economic environments.	Expected to have financial policies (including risk and liquidity management) that create elevated risk of debt restructuring even in healthy economic environments.
Factor: Uplift for Structural Considerations									
		Number of Notches Provided by Debt Structural Features (0 to +3 notches)							

Source: Moody's Investors Service

*1 For the linear scoring scale, the Aaa endpoint value is 15x. A value of 15x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

*2 For the linear scoring scale, the Aaa endpoint value is 55%. A value of 55% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

*3 For the linear scoring scale, the Aaa endpoint value is 40%. A value of 40% or better equates to a numeric score of 0.5. The Ca endpoint value is (5)%. A value of (5)% or worse equates to a numeric score of 20.5.

*4 For the linear scoring scale, the Aaa endpoint value is 10x. A value of 10x or better equates to a numeric score of 0.5. The Ca endpoint value is 0.5x. A value of 0.5x or worse equates to a numeric score of 20.5.

*5 This ratio is defined as follows:

- Corporate: (FFO + Interest Expense – Maintenance Capex) / Debt Service Annuity, where Debt Service Annuity is calculated with the following formula: ((ST Debt + LT Debt, gross) x Discount Rate) / (1 – (1/(1 + Discount Rate)$^{\text{remaining concession life}}$)).
- Project finance (fully-amortizing mortgage-style principal repayment): CFADS / (Interest plus Principal Payment), where CFADS equals Cash Flows From Operations + cash interest paid less maintenance capex plus/minus transfers from/to timing reserves, if relevant.

*6 For the linear scoring scale, the Aaa endpoint value is 15x. A value of 15x or better equates to a numeric score of 0.5. The Ca endpoint value is 1x. A value of 1x or worse equates to a numeric score of 20.5.

*7 This ratio is defined as follows:

- NPV of CFADS plus debt service reserve account / Total Debt.

Moody's Related Publications

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

For data summarizing the historical robustness and predictive power of credit ratings, please click here.

For further information, please refer to *Rating Symbols and Definitions*, which is available here.

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

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