MOODY'S INVESTORS SERVICE

RATING METHODOLOGY

Global Housing Projects

This rating methodology replaces the methodology Global Housing Projects published in December 2015. We have made some non-analytical revisions to clarify some scorecard factor descriptions. We have also removed certain issuer-specific information and updated some outdated links.

Table of Contents:

Analyst Contacts:

NEW YORK +1.212.553.1653

Rachael McDonald +1.212.553.4456
Vice President – Sr Credit Officer
rachael.mcdonald@moodys.com

Ferdinand Perrault +1.212.553.4793
Vice President - Senior Analyst
ferdinand.perrault@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Kendra Smith +1.212.553.4807
Managing Director - Public Finance
kendra.smith@moodys.com

Alfred Medioli +1.212.553.4173
Senior Vice President/Mgr/RPO
alfred.medioli@moodys.com

» contacts continued on the last page

Introduction

This rating methodology explains our approach to assessing credit risk for bonds secured by housing projects globally. This methodology provides a reference tool enabling investors, issuers and other interested market participants to understand how key quantitative and qualitative characteristics are likely to affect rating outcomes. It does not include an exhaustive treatment of all factors that might be relevant when evaluating an individual project's credit attributes. Related sectors not covered in this report include generic project financings, HFA multifamily programs, single family rental securitizations and commercial mortgage-backed securities. This report includes a scorecard that can be used to approximate credit profiles within the global housing projects sector. The scorecard provides guidance for the factors we generally consider most important when assigning a credit rating. The weights for each factor in the scorecard approximate relative importance in a rating decision, but the actual importance for an individual project may vary substantially. The scorecard is a guideline for rating committee discussion and does not determine the final rating on its own. The scorecard details three broad factors that are important in our assessment of global housing project ratings:

1. Financial Position
2. Market Position
3. Property Management

THIS RATING METHODOLOGY WAS UPDATED ON OCTOBER 18, 2019. WE HAVE UPDATED SOME OUTDATED REFERENCES AND ALSO MADE SOME MINOR FORMATTING CHANGES.

Highlights of this report include:

» An overview of the rated universe

» A discussion of how to apply the methodology

» A summary of the scorecard factors

» A description of additional factors that drive rating quality

» An appendix containing the scorecard

Our analysis may also be guided by additional publications describing our approach for analytical considerations that are not specific to a single sector. Examples of such considerations include, but are not limited to, the assignment of short-term ratings, the relative ranking of different classes of debt, the impact of sovereign ratings on government-related borrowers, and the assessment of credit support from other entities.[1]

About the Rated Universe

Project finance in the global housing sector encompasses standalone, non-recourse financings of rental housing projects that are typically secured either by a fully amortizing or a leasehold mortgage on the property, and are repaid primarily from rental revenues. The main types of financings covered under this methodology are:

» Privatized Student Housing: These transactions finance housing for college students. The land for the project is typically owned by the university or an affiliated nonprofit foundation and leased to the project, which is built by a private developer and managed by either a private manager or the university.

» Privatized Military Housing: These transactions finance rental properties which are primarily made available to military personnel in exchange for a housing stipend. The land for the project is typically owned by the military and leased to the project, which is developed and managed by a private entity.

» Affordable Multifamily Housing: These transactions finance uninsured and unsubsidized multifamily properties which are privately owned and managed. The projects are generally required to have all or a portion of their units set aside for low- and moderate-income persons or families.

» Subsidized Multifamily Housing: These transactions finance multifamily projects where a government pays rental subsidies to owners of qualified housing on behalf of eligible tenants. The projects may be owned and managed by either a private owner or a local housing authority.

Other types of similarly structured public sector project financings may be covered under this methodology.

Applying This Methodology

The scorecard in this methodology is the starting point for the consideration of a rating. It is neither a rating calculator nor a comprehensive list of all factors affecting the rating. We incorporate other credit-specific considerations into our analysis that are not otherwise captured in the scorecard. These considerations can account for variation between the final rating and the scorecard-indicated outcome.

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

1. Identification and Discussion of Scorecard Factors

The scorecard provides guidance for the elements that are generally most important in assigning ratings to housing projects globally. In the scorecard, each sub-factor is assigned a weight and a value. The sub-factor weights are the same for all projects and are intended to approximate their typical importance for a rating decision. The values are project-specific and incorporate Moody's adjustments to a project's financial statements.

Broad Factors	Factor Weighting	Sub-Factors	Sub-Factor Weighting
Financial Position	65%	Debt Service Coverage	35%
		Liquidity & Reserves	20%
		Diversity & Source of Revenues	10%
Market Position	20%	Demand Drivers	10%
		Market Size	10%
Property Management	15%	Ownership / Affiliation	10%
		Project Management	5%

There are different ranges for the debt service coverage metrics used for different types of project financings to reflect the different levels of market exposure for each project type.

2. Mapping Scorecard Factors to Rating Categories

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

3. Determining the Overall Scorecard-Indicated Outcome

To determine the overall scorecard-indicated outcome, we convert each of the sub-factor scores into a numeric value based upon the scale below.

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

The numeric score for each sub-factor is multiplied by its relative importance, or weight, with the results then summed to produce an aggregate weighted factor score. The aggregate weighted factor score is then mapped back to an alphanumeric score based on the ranges in the table below.

Scorecard-Indicated Outcome	Aggregate Weighted Total Factor Score
Aaa	$x < 1.5$
Aa1	$1.5 \leq x < 2.5$
Aa2	$2.5 \leq x < 3.5$
Aa3	$3.5 \leq x < 4.5$
A1	$4.5 \leq x < 5.5$
A2	$5.5 \leq x < 6.5$
A3	$6.5 \leq x < 7.5$
Baa1	$7.5 \leq x < 8.5$

Scorecard-Indicated Outcome	Aggregate Weighted Total Factor Score
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	x ≥ 19.5

4. Assumptions, Limitations and Rating Considerations Not Included in the Scorecard

The scorecard in this rating methodology represents a decision to favor simplicity that enhances transparency over greater complexity that would enable the scorecard-indicated outcome to map more closely to actual ratings. The scorecard-indicated outcome will not match the actual rating in every case for a number of reasons, including the following:

» Our ratings incorporate expectations of future performance while the mapping for the scorecard is based on historical financial statements.

» The scorecard is not an exhaustive list of every rating consideration.

» In some circumstances, the importance of one factor may exceed its prescribed weight in this methodology.

Variance between the scorecard-indicated outcome and actual ratings reflects the importance of forecasts of financial performance and our analysis of qualitative rating factors. For speculative grade rated entities, performance inconsistent with historical trends, more rapid rates of change due to higher risk profiles, or the outsized importance of a particular rating factor can contribute to variance from the scorecard-indicated outcome.

Scorecard Factors

The scorecard is comprised of seven sub-factors capturing key elements of a housing project's financial position, market position and management and governance. Each sub-factor is assigned a weight, totaling 65% for financial position, 20% for market position, and 15% for property management.

Factor 1: Financial Position (65% weight)

Why it Matters

We evaluate a project's financial position to determine its ability to support future debt service based upon its existing and projected revenue-generating capabilities. The debt service coverage ratio (DSCR) is a key metric used to measure the strength of a project's net operating income (NOI) relative to its debt service obligations, both currently and in the future. In addition to this metric, we review the project's liquidity and reserves in order to assess its ability to withstand periodic disruptions in the receipt of revenues. Finally, we evaluate the diversity and sources of housing project revenues which impact the dependability of revenues and therefore are an important driver of financial position.

How We Assess It for the Scorecard

A. Debt Service Coverage Ratio (35%)

We use this ratio to measure a project's ability to repay principal and interest from net operating income both currently and in the future. We calculate the debt service coverage ratio by dividing net operating income (total revenue less total expenses) by debt service. Since reserve and replacement deposits are important to maintaining a project's "curb appeal" and funding capital repairs over the life of the deal, we treat it as an operating expense whether or not it is subordinated in the flow of funds. If operating expenses are clearly subordinated in the legal documents and covered by a more substantial and credit-worthy entity, such as a university, we calculate debt service coverage without the expenses although we do assess how these expenses are covered. When the current year debt service is materially lower than maximum annual debt service (MADS), we will also consider NOI divided by MADS. A stable or improving DSCR is an indicator of financial health, whereas a declining DSCR can indicate financial stress and have a negative impact on the rating assessment.

Debt service coverage ratio benchmarks by rating category vary for each sub-sector of housing projects based on its exposure to market forces. The higher the exposure to market forces, the higher the expected DSCR in order to buffer the performance of the financing from the volatility of the market. For example, military housing projects, though still susceptible to market forces, typically benefit from a variety of factors that help to bolster and stabilize project revenues. These include the projects' location on or near a military installation, lockbox structure for revenues, relative reliability of the basic allowance for housing, and the average three-year stay of service members on bases. Student housing projects similarly receive some level of support through the relationship with a university but have more market-exposed revenue streams due to the typically annual turnover of all tenants, particularly compared to leases which expire throughout the year for other forms of housing . As such, the minimum debt service coverage ratio for a student housing project rated in the "A" range, for example, is higher than the minimum requirement for a military housing project.

Once debt service coverage drops below 1.0x, our primary focus for the rating assessment becomes the recovery expected for bondholders if the bonds were to go into default. The expected recovery rate is calculated by comparing our assessment of cash flow projections against the cash flows promised to investors (e.g. expected recovery rate = 100% + (Present Value of Expected Loss/Total Bonds Outstanding). While this becomes a significant driver for the rating, we also assess additional factors, such as the likelihood of a cash infusion from a third party, to determine the final rating outcome.

In order to inform our assessment of future cash flows and debt service coverage we review historical audited financial statements as well as projections for both new and existing projects. We typically review pro forma cash flow statements that include base case and stress case scenarios at the initial rating and, if warranted, at subsequent reviews. In a base case pro forma scenario, expense and revenue inflation vary based on the type of project being financed, the market conditions, and the construction schedule, but are generally at the 2% to 3% inflation levels for each. In a stress case, we typically review scenarios that show no growth in revenue or expenses for the life of the project and/ or additional scenarios, such as higher levels of expense growth to revenue growth, as warranted.

For vacancy assumptions, we generally evaluate base case and stress scenarios with 8% vacancy although more severe vacancies may be assumed depending on the nature and history of the project. For example, in the case of a property under construction, we would check to ensure that the vacancy levels, at a minimum, match the construction schedule for units online plus additional vacancy stresses. We also review agreements that stipulate that in the event of a delay, tenants would be provided with alternate housing. For projects involving a combination of new construction and rehabilitation, we look to see whether the revenue from the minimum units online is able to cover debt service during the construction phase. In the case of a student housing project, we would haircut summer revenues significantly in order to account for the volatility of this revenue stream.

B. Liquidity and Reserves (20%)

Liquidity provides a project with the ability to withstand periodic disruptions in the receipt of revenues due to unforeseen circumstances, including operational and performance issues. One important factor in assessing the project's liquidity is both the size and quality of the available debt service reserve. The inclusion of a debt service reserve fund sized at a full-year of MADS is a standard liquidity feature in most housing project financings, and the lack of a debt service reserve fund equal to MADS, or a reserve lower than MADS, would drive a lower score on this factor. The quality of the reserve relates to the counterparty rating of the investment or surety bond provider. For example, a cash reserve invested in highly rated securities would be considered more reliable than a surety bond with a below investment grade counterparty.

A project may have additional funds and reserves available for debt service and operating expenses beyond a debt service reserve fund equal to a full-year of MADS. For example, a project could have additional operating reserves, construction reserves, surplus funds or contingent equity commitments. In military housing, a project reinvestment account may also provide liquidity in the event of operating disruptions such as unexpected expenses. However, these additional forms of liquidity will not replace the importance of having a dedicated MADS debt service reserve fund, particularly at the investment grade rating level.

C. Diversity and Sources of Revenue (10%)

The diversity and sources of housing project revenues impact the dependability of revenues over time and therefore are a key driver of financial position. For most projects, including military housing and student housing, the revenue stream is derived from leases with individual renters, which makes a project more susceptible to market forces. Lease terms, such as length, can also affect revenue volatility. For example, rental volatility is greater for student housing, because of its characteristic annual tenant turnover, than either military or affordable housing where the tenants often stay in the units for longer and leases are staggered with tenants moving in and out of the units throughout the year. In contrast, if a substantial portion of project's revenue stream were to come directly from a highly-rated entity, regardless of project occupancy, then the revenue stream would be highly reliable.

Ancillary revenues, such as dining revenue, parking revenue, penalty fees, or revenue from summer tenants, are typically more volatile than rental revenues. Projects relying heavily on such ancillary revenue sources are viewed as having weaker credit quality than projects that depend primarily on rental revenues.

Factor 1: Financial Position (65% Weight)

	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Debt Service Coverage Ratio	35%								
Privatized Military Housing		≥ 3x	2.00x - 2.99x	1.50x - 1.99x	1.30x - 1.49x	1.10x - 1.29x	1.00x - 1.09x	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%
Privatized Student Housing		≥ 4x	2.50x - 3.99x	2.00x - 2.49x	1.20x - 1.99x	1.10x - 1.19x	1.00x - 1.09x	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%
Affordable Multifamily Housing		≥ 4x	1.80x - 3.99x	1.70x - 1.79x	1.35x - 1.69x	1.10x - 1.34x	1.00x - 1.09x	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%
Subsidized Multifamily Housing		≥ 4x	1.70x - 3.99x	1.29x - 1.69x	1.10x - 1.29x	1.00x - 1.09x	< 1.00x with an expected recovery between 95% and 100%	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%
Liquidity & Reserves	20%	Substantial funds and reserves available for debt service and operating expenses, and debt service reserve funded at maximum annual debt service at closing with cash or invested in securities or with a highly rated surety provider.	Ample funds and reserves available for debt service and one year maximum annual debt service reserve that is cash funded or invested in securities or with a highly rated surety provider.	Modest funds and reserves available for debt service beyond one year maximum annual debt service reserve that is cash funded or invested in securities or with an investment grade surety provider.	No other funds beyond one year maximum annual debt service reserve that is cash funded or invested in securities or with an investment grade surety provider.	No funds other than at least one half-year maximum annual debt service reserve with a below investment grade/unrated surety provider.	Debt service reserve fund that has been drawn upon or a reserve with a below investment grade/unrated surety provider. No other funds are available for debt service.	Depleted debt service reserve or a reserve with a below investment grade/unrated surety provider. No other funds are available for debt service.	In default. No debt service reserve.
Diversity & Source of Revenues	10%	Over 90% of the revenue is directly from a Aaa-rated entity with no renewal risk.	Over 75% of the revenue is directly from a Aa-rated entity with no renewal risk.	The revenue is derived from individual renters with staggered lease terms in excess of one year and alternate housing options exist. Minimal reliance on ancillary revenue.	The revenue is derived from individual renters with the majority of leases expiring at the same time. Limited reliance on ancillary revenue.	The revenue is derived from individual renters but the majority of lease terms expire less than one year. Reliance on ancillary revenue.	The revenue is derived from a limited number of renters. Ancillary revenue required to meet operating expenses.	The revenue is derived from fluctuating and volatile revenue stream as substantial ancillary revenue required to meet operating expenses.	In default. The revenue is derived from fluctuating and volatile revenue stream as substantial ancillary revenue required to make debt service payments.

Factor 2: Market Position (20% weight)

Why it Matters

Our assessment of project finance housing transactions focuses heavily on an analysis of the project's market position which is a key driver of project revenues. In evaluating the market position of a property, we consider factors that impact project occupancy and revenue volatility. These include elements such as whether tenants are required to live in the housing, the ratio of eligible tenants to the number of units in the project, the project rent levels relative to market rents, and the size and geographic diversity of the projects in the financing.

How We Assess It for the Scorecard

A. Demand Drivers (10%)

The strongest driver of demand for projects is a requirement for tenants to live in the housing. For example, the requirement that a certain population of students live in a student housing project should lead to a very high occupancy rate and would be a strong credit positive for the project. In contrast, an affordable housing project might be highly exposed to competitive pressure from other multifamily projects as well as rental single family homes in the surrounding community. Competitive pressure can have a negative impact on both project occupancy and rent levels, leading management to decrease rent or provide rent concessions.

We also assess the relationship between the number of eligible tenants and the number of units in the project, where a high ratio demonstrates strong potential demand and a low or shrinking ratio will signal low or flagging demand. For example, in most student housing transactions the number of qualified renters greatly exceeds the number of rental units offered. Even if the ratio is high, offsetting factors can still sway demand including competition from market-rate apartments, the ability for students to live at home, or competition from other or on-campus housing.

The project's rent relative to market rents also affects demand. Lower rents are clearly more attractive to prospective tenants. Military housing project rents are pegged to market rents via the formulaic Basic Allowance for Housing (BAH), but student housing and affordable housing can vary much more widely relative to market. For new financings, we expect to review market studies that include rent levels at comparable housing in terms of size, location, desirability in the market area ("market comps"). For surveillance of existing projects, we may obtain information to evaluate comparable properties from third-party market research firms, our own research or property management.

B. Project Size (10%)

The size of the projects in the financing, as measured by total units, influences the ability of a project to absorb swings in occupancy and expenses. For example, smaller projects would be more vulnerable than larger projects to relative changes in project occupancy, expenses, or maintenance needs. In addition, higher numbers of units would help to buffer properties with greater levels of historical occupancy volatility.

Geographic diversity insulates projects from changes in real estate fundamentals that occur in individual markets. Thus a financing with projects spread across several states could have a lower risk profile than a financing with projects in one location. In military housing, for example, when the bonds are supported by revenue from housing in a variety of states, declines in the BAH rates for one location may be offset by increases in the BAH rates for another location.

Factor 2: Market Position (20% Weight)

	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Demand Drivers	10%	Tenant requirement to live at housing or eligible tenants to units is very high. Average rent levels >15% discount to market rents.	Tenant requirement to live at housing or eligible tenants to units is high. Average rent levels 10-14% discount to market rent.	Targeted tenant requirement to live at housing or eligible tenants to units is strong. Average rent levels 5-9% discount to market rent.	No tenant requirement to live at housing or eligible tenants to units remains favorable. Average rent levels at market rent.	Competitive market place. Average rent at market levels but physical condition needs improvement.	Competitive market place. Average rent levels above market and physical condition needs improvement.	Competitive market place. Average rent levels substantially above market and physical condition needs improvement.	Competitive market place. Average rent levels significantly above market and physical condition needs significant improvement.
Project Size	10%	Greater than 12,500 units and geographically diverse with projects in more than one state/region.	Greater than 7,500 units	2,500 - 7,499 units	1,000 - 2,499 units	750 - 999 units	500 - 749 units	250 - 499 units	Fewer than 250 units

Factor 3: Property Management (15% weight)

Why it Matters

The assessment of property management complements our quantitative ratios and provide further insight into the credit quality of the project financings. An experienced management team can reduce the likelihood of operating problems and speed up resolution when they occur, while poor quality may increase the likelihood and/or delay resolution. Likewise, affiliation with either a public sector entity or with a highly rated third party that provides support through certain guarantees or subordination of expenses can also bolster credit quality.

How We Assess It for the Scorecard

A. Ownership/Affiliation (10%)

Strength of ownership is primarily evaluated on the extent of a public sector entity's participation with and support of the project as well as the experience or track record of all participants. The presence of a public sector entity in the ownership structure with substantial financial resources is typically viewed as a credit positive. The level of experience a private owner has working with the product is also an important factor, as more experienced owners are likely to provide better oversight of the project and to ensure that the project has a strong management team. This type of ownership structure is the most significant when the public sector entity has either a financial or mission-driven incentive for the housing to be maintained and operated. For example, in the case of privatized student housing, universities not only have a mission driven incentive but frequently receive all or a portion of excess cash flow, which provides a strong financial incentive for the property to succeed. Conversely, affordable multifamily housing projects typically do not have a financially robust public sector entity in their ownership structure, and therefore may lack the ability to mitigate challenges they experience.

A high level of likelihood that the ownership would contribute financial support to the project demonstrates a very strong affiliation and would provide significant credit strength to the project.

B. Project Management (5%)

In order to assess the quality of the project manager, we review both management's track record and depth of experience with the product type. To assess management's track record, we evaluate its historic ability to conduct day-to-day operations, such as preventive maintenance, rent collection, unit turnaround, marketing, and implementation of safety measures. In addition, we also measure management's success in managing through up and down cycles over time. Finally, we evaluate management's ability to provide appropriate levels of financial and operational disclosure upon request.

We also determine whether management has experience with the type of housing being offered and/or in the particular market where the project it located. Key metrics in our evaluation are the number of units that it manages and the size of its footprint nation-wide. If a property manager does not have experience in a particular sector, it will likely be considered a negative credit factor. For example, our history with student housing transactions has demonstrated that managers without student housing experience are often less adept than those with prior experience. The same rule can be applied to military housing and affordable housing. A lack of experience in a specialized type of housing can be mitigated by substantial multifamily experience, but not completely.

Factor 3: Property Management (15%)

	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Ownership / Affiliation	10%	Private owner has substantial experience working with this product. Public sector entity with substantial resources, is a member in the ownership structure, and is likely to financially support the project.	Private owner has successful experience working with this product. Public sector entity with significant resources, is a member in the ownership structure, and may provide some financial support to the project.	Private owner has good experience working with this product. Public sector entity with strong resources, receives a portion of excess cash flows as the project's success advances its mission.	Private owner has limited experience working with the public sector on this product. Public sector entity with moderate resources, receives portion of excess cash flows as the project's success advances its mission.	Private owner is familiar with the product but has limited experience working with the public sector. Public sector entity involved has modest resources or does not have mission driven or financial stake in project's success.	Private owner has limited but satisfactory experience with the product. Public sector entity is a conduit and is not likely to get involved in property management or operations.	Private owner has limited experience and mixed results with the product. Public sector entity involved has demonstrated a lack of involvement in property management or operations.	Private owner has a poor track record with the product. Public sector entity has no involvement in property management or operations.
Project Management	5%	Successful track record and experience with multiple products. Has been very successful managing through various cycles and has a national footprint.	Successful track record and experience with multiple products. Has been very successful managing through various cycles.	Established track record and experience with multiple products. Has been successful managing through various cycles.	Established track record but has had some difficulty managing through cycles or does not have experience with particular product or market.	Track record is limited. Management has significant experience in other products or markets.	Track record is limited. Management has limited experience in other products or markets.	Weak track record as Management does not have experience with particular product or market.	Poor management or oversight of the program.

Other Credit Considerations

Ratings encompass a number of additional considerations. These include: market location, occupancy, essentiality, property characteristics, legal structure, and construction status.

Market Location

The location of the property can impact demand for its units and increase its competitive advantage. For example, projects with a targeted tenant base, such as military or student housing projects, would have a strong market location if they are on or in close proximity to the affiliated base or college. An affordable housing project with a strong market location would be situated in a desirable neighborhood with access to freeways and/or public transportation, located within commutable distance from employment and commercial centers and well-integrated into the community.

Occupancy

We analyze an existing property's physical and economic occupancy in order to assess the current and future rental revenue stream for the project. Factors we consider include occupancy trends, the ability to expand the eligible tenant pool, the history of bad debt and rent concessions, unit turnover, and market trends. We use this information to determine the assumptions that should be used in pro-forma financial projections for the projects. In the case of military housing, we also evaluate the potential for future troop deployments or reductions as well as whether the intended pay grade of troops is actually occupying the units. For student housing, we evaluate enrollment trends at the university as well as summer occupancy trends to inform our analysis.

In the event that a project has not yet been constructed, we review market studies, occupancy trends in the submarket, as well as information on the construction pipeline to evaluate the potential for future project occupancy.

Essentiality

We assess military base essentiality and the essentiality of student housing projects to their affiliated universities in order to understand how demand for the project may change over time. Privatized military housing projects are exposed to the risk of declines in the military families assigned to the base due to a Base Realignment and Closure (BRAC), a change in the primary mission of the base, or other forms of troop reductions. In order to assess this risk, we evaluate the essentiality of the base to the Department of Defense (DoD) mission. Bases with high essentiality are critical to national defense and provide a high level of support to the DoD mission, making base realignment or closure unlikely. Essential bases also tend to be large, situated in strategic locations, and have significant, critical infrastructure that would be difficult and expensive for the military to move to another location.

Similarly, we evaluate essentiality of student housing projects to the affiliated university. Housing would be viewed as more essential for universities where a residential life program is core to their market position and where existing facilities are already at full occupancy. Replacement housing on such campuses would also be viewed as essential. Undergraduate housing is typically viewed as more essential than graduate housing. Housing located on commuter campuses that did not previously have housing may be viewed as less essential.

Property Characteristics

We evaluate the physical condition, amenities and style of the project in order to assess how attractive it will be to potential tenants. Baseline property characteristics for an investment grade financing, unless risks are otherwise mitigated, include satisfactory physical condition, minimal deferred maintenance, and amenities that are comparable to the competition. Projects that have less attractive physical characteristics and amenities will need higher debt service coverage levels than newer properties to achieve the same rating and should incorporate higher costs of maintenance or capital repairs as determined by an engineer's report. In addition, direct deposits to the reserve and replacement account, per the legal documents, would be an important mitigant to concerns about ongoing maintenance.

Projects for niche audiences, such as military housing, student housing, or senior citizens, perform better if they have amenities and unit styles that reflect the particular needs and desires of that population. For example, projects targeted for students may feature study lounges, recreation areas, wireless internet, and suite-style rooms designed for sharing with roommates. In contrast, military housing projects typically feature single family or townhouse homes, community centers and health clubs, daycare facilities, and proximity to on-base offices, shopping centers, and schools. The desirability of the military housing is evaluated on a neighborhood-by-neighborhood basis, as property characteristics, such as number of bedrooms or the location of the housing, may cause performance of certain neighborhoods to lag. The location of the property is also important in considering the possibility of alternative uses for the property, particularly for those bases with low essentiality.

Legal Structure

We review legal documents that pertain to the repayment of debt to determine the pledge available to and the rights of bondholders under both normal and stress scenarios. We also look for any structural elements that may pose potential repayment risks. The types of factors that we evaluate include:

» Security pledge, including lien structure, revenue pledge, and collateral, such as a mortgage pledged to the bonds

» Flow of funds, including priority of debt service, replenishment of reserves, surplus fund release tests, additional bonds tests, and rate covenants

» Events of default and remedies, including cross-default provisions for senior and subordinate debt

» Ground lease terms, such as the length of the lease relative to the term of the bonds, early termination features, responsibilities of all parties related to payments, and limitations on eligible tenants

» Insurance requirements, such as hazard insurance, rental interruption insurance and other types of insurance

» Debt structure, including the proportion of fixed versus variable rate debt, length and type of bond amortization (level versus step-up or bullet amortization)

» Reserve and replacement requirements, typically $250 per year per unit for new multifamily projects or $175 per bed for student housing projects, with escalators over time

» For military housing with 40 to 45 year debt amortization, provisions related to project recapitalization for future financing of rehabilitation and replacement of units

Construction Status

Construction and lease-up risk can limit the rating level a project can achieve because of the risk that the project may not be completed on time (or at all) and that units will not be leased as projected. We review how construction risk will be managed and the array of protections put in place to defray risk in order to determine how the construction phase could impact bond payments. Examples of construction risk mitigants include:

» Letters of credit

» Existing occupied units conveyed to the project at closing, with a minimum number of units online, that have a history of producing net operating income that covers all debt service payments

» Construction guaranty from a rated entity such as a university or the federal government that guarantees the payment of debt service

» A fixed price construction contract or a guaranteed maximum price where the contractor is responsible for cost overruns

» Payment and performance bonds from a highly rated entity where the developer ensures the bonds are procured for the entire scope of construction and rehabilitation

» Capitalized interest during the construction period

Appendix: Global Housing Projects Scorecard

Financial Position (65%)

Debt Service Coverage Ratio	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Privatized Military Housing	35%	≥ 3x	2.00x - 2.99x	1.50x - 1.99x	1.30x - 1.49x	1.10x - 1.29x	1.00x - 1.09x	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%
Privatized Student Housing		≥ 4x	2.50x - 3.99x	2.00x - 2.49x	1.20x - 1.99x	1.10x - 1.19x	1.00x - 1.09x	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%
Affordable Multifamily Housing		≥ 4x	1.80x - 3.99x	1.70x - 1.79x	1.35x - 1.69x	1.10x - 1.34x	1.00x - 1.09x	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%
Subsidized Multifamily Housing		≥ 4x	1.70x - 3.99x	1.29x - 1.69x	1.10x - 1.29x	1.00x - 1.09x	< 1.00x with an expected recovery between 95% and 100%	< 1.00x with an expected recovery between 65% and 95%	< 1.00x with an expected recovery < 65%

		Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Liquidity & Reserves	20%	Substantial funds and reserves available for debt service and operating expenses, and debt service reserve funded at maximum annual debt service at closing with cash or invested in securities or with a highly rated surety provider.	Ample funds and reserves available for debt service and one year maximum annual debt service reserve that is cash funded or invested in securities or with a highly rated surety provider.	Modest funds and reserves available for debt service beyond one year maximum annual debt service reserve that is cash funded or invested in securities or with an investment grade surety provider.	No other funds beyond one year maximum annual debt service reserve that is cash funded or invested in securities or with an investment grade surety provider.	No funds other than at least one half-year maximum annual debt service reserve with a below investment grade/unrated surety provider.	Debt service reserve fund that has been drawn upon or a reserve with a below investment grade/unrated surety provider. No other funds are available for debt service.	Depleted debt service reserve or a reserve with a below investment grade/unrated surety provider. No other funds are available for debt service.	In default. No debt service reserve.

		Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Diversity & Source of Revenues	10%	Over 90% of the revenue stream is directly from a Aaa-rated entity with no renewal risk.	Over 75% of the revenue stream is directly from a Aa-rated entity with no renewal risk.	The revenue stream is derived from individual renters with staggered lease terms in excess of one year and alternate housing options exist. Minimal reliance on ancillary revenue.	The revenue stream is derived from individual renters with the majority of leases expiring at the same time. Limited reliance on ancillary revenue.	The revenue stream is derived from individual renters but the majority of lease terms expire less than one year. Reliance on ancillary revenue.	The revenue stream is derived from a limited number of renters. Ancillary revenue required to meet operating expenses.	The revenue stream is derived from fluctuating and volatile revenue stream as substantial ancillary revenue required to meet operating expenses.	Bond in default. The revenue stream is derived from fluctuating and volatile revenue stream as substantial ancillary revenue required to make debt service payments.

Market Position (20%)

	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Demand Drivers	10%	Tenant requirement to live at housing or eligible tenants to units is very high. Average rent levels >15% discount to market rents.	Tenant requirement to live at housing or eligible tenants to units is high. Average rent levels 10-14% discount to market rent.	Targeted tenant requirement to live at housing or eligible tenants to units is strong. Average rent levels 5-9% discount to market rent.	No tenant requirement to live at housing or eligible tenants to units remains favorable. Average rent levels at market rent.	Competitive market place. Average rent at market levels but physical condition needs improvement.	Competitive market place. Average rent levels above market and physical condition needs improvement.	Competitive market place. Average rent levels substantially above market and physical condition needs improvement.	Competitive market place. Average rent levels significantly above market and physical condition needs significant improvement.
		Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Project Size	10%	Greater than 12,500 units and geographically diverse with projects in more than one state/region.	Greater than 7,500 units	2,500 - 7,499 units	1,000 - 2,499 units	750 - 999 units	500 - 749 units	250 - 499 units	Fewer than 250 units

Property Management (15%)

	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Ownership / Affiliation	10%	Private owner has substantial experience working with this product. Public sector entity with substantial resources, is a member in the ownership structure, and is likely to financially support the project.	Private owner has successful experience working with this product. Public sector entity with significant resources, is a member in the ownership structure, and may provide some financial support to the project.	Private owner has good experience working with this product. Public sector entity with strong resources, receives a portion of excess cash flows as the project's success advances its mission.	Private owner has limited experience working with the public sector on this product. Public sector entity with moderate resources, receives portion of excess cash flows as the project's success advances its mission.	Private owner is familiar with the product but has limited experience working with the public sector. Public sector entity involved has modest resources or does not have mission driven or financial stake in project's success.	Private owner has limited but satisfactory experience with the product. Public sector entity is a conduit and is not likely to get involved in property management or operations.	Private owner has limited experience and mixed results with the product. Public sector entity involved has demonstrated a lack of involvement in property management or operations.	Private owner has a poor track record with the product. Public sector entity has no involvement in property management or operations.
		Aaa	Aa	A	Baa	Ba	B	Caa	Ca and Below
Management	5%	Successful track record and experience with multiple products. Has been very successful managing through various cycles and has a national footprint.	Successful track record and experience with multiple products. Has been very successful managing through various cycles.	Established track record and experience with multiple products. Has been successful managing through various cycles.	Established track record but has had some difficulty managing through cycles or does not have experience with particular product or market.	Track record is limited Management has significant experience in other products or markets.	Track record is limited Management has limited experience in other products or markets.	Weak track record as Management does not have experience with particular product or market.	Poor management or oversight of the program.

Moody's Related Publications

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

» contacts continued from page 1

Report Number: 1077122

Analyst Contacts:

NEW YORK +1.212.553.1653

Jonathan Garcia +1.212.553.2895
Associate Analyst
jonathan.garcia@moodys.com

Author
Geordie Thompson

Production Associate
Sunith Kashyap

MOODY'S
INVESTORS SERVICE