CREFC – PRINCIPLES-BASED UNDERWRITING FRAMEWORK

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I. Introduction

Commercial mortgages provide the capital and liquidity for real estate owners to build and operate the properties in which we live, work, and shop; the properties that house the businesses, large and small, that fuel our nation's economy. These loans are primarily made by banks and insurance companies, either to be held in portfolio or packaged and sold as commercial mortgage backed securities (CMBS). In all cases the lenders, through their underwriters, assess the risks of the loans by analyzing the operations of the properties being financed. The properties have revenues – primarily rent collected from tenants – and expenses – the costs of maintaining the properties – that generate the net cash flow required to service the contractual monthly principal and interest payments of the proposed loans. This business aspect of commercial mortgage finance distinguishes it from single family home lending, where the mortgage payments are funded through the earnings of the borrower, unrelated to the real estate collateral securing the loans.

Section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act enacted earlier this year directs the implementing federal banking agency regulators to – among other things – craft underwriting standards "that specify the terms, conditions, and characteristics of a loan within the asset class that indicate a low credit risk with respect to that loan." This paper encapsulates CREFC's views and suggestions on such standards and it therefore focuses on loans originated for CMBS, which are primarily collateralized by first mortgages on stable, cash flowing real estate including multifamily, office, retail, industrial, and hotel properties. Underwriting the financing of the acquisition and development of multifamily or commercial land, construction loans, or mezzanine financings typically originated by banks for their portfolios will not be addressed herein.

All loans have risk of default, and the underwriting process is designed to identify and enable lenders to mitigate those risks. A thorough underwriting process applies consistent standards across similar categories of properties and markets. As a general matter, however, the members of CREFC repeatedly have concluded that the heterogeneity of the loans securitized through CMBS do not lend themselves to the development or application of any objective underwriting standards that would indicate a lower credit risk with respect to such loans. All commercial properties are unique due to their competitive positions within their markets and in the quality of their physical plants, tenancy and management, and the risk analyses must therefore be property specific.

Accordingly, this paper outlines a framework of underwriting principles and procedures that we believe results in generating lower credit risk loans, but the uniqueness of each property requires lenders to appropriately customize their underwriting to reflect the facts and circumstances of each proposed loan. An underwriter's adherence to this framework and a disclosure regime that emphasizes the manner in which the underwriter has done so would help both to increase the integrity of the underwriting process and to enable investors to independently evaluate the decisions made during the underwriting process so that they can formulate their own conclusions regarding those decisions.

Generally, commercial mortgages with the following attributes have a lower risk of default:

- The value of the collateral is substantially higher than the loan amount to provide cushion in times of falling property values;
- The borrower or sponsor has significant cash equity in the property and is incentivized to keep the loan current through its term and repay the loan at maturity;
- The property is well managed by an experienced property manager;
- The property is located in a desirable market that attracts high quality tenants, and the property can effectively compete for those tenants through its location, quality of its space, and amenities;
- The property is fully leased by credit worthy tenants with leases that extend beyond the maturity of the proposed loan;
- The property generates cash flow from its operations that exceeds the periodic interest and principal payments of the proposed loan (the "debt service") by a sufficient margin to protect the lender from fluctuations in that cash flow due to unexpected economic and market events; and
- The loan is structured such that, depending on leverage, it either fully amortizes or has some level of amortization over its term, has reserves for re-leasing and capital expenditures, and employs other forms of credit enhancements appropriate to mitigate certain risks.

Not every property is a trophy asset in a top tier market, and therefore not all commercial mortgages will reflect all the attributes of a low risk loan. There is inherent risk in commercial mortgage lending. The goal of CMBS is to provide liquidity not just to trophy properties, but to all markets and properties while appropriately identifying and mitigating those risks. Therefore, it is critically important that lenders conduct a thorough underwriting process that identifies the risks of a proposed loan, sizes and structures the loan in consideration of those risks, and clearly discloses the risks and structural enhancements to investors. Such transparency will enable investors to understand and price the risk of commercial mortgage pools and regain confidence in securitization vehicles.

The ultimate test of an underwriter's conclusions and recommendations is the actual performance of a loan throughout its term and at maturity. An underwriter is challenged with determining a borrower's capacity to make timely payments of debt service and the ultimate repayment of principal at the maturity date. Accordingly, in underwriting commercial mortgages an underwriter considers the various types of defaults in making the credit decision:

a. **Term Default** – The risk of default during the term of a loan, from loan origination through loan maturity, is deemed the "Term Risk" of the loan. Several key parameters are utilized in measuring Term Risk with the most common metric being debt service coverage ratio (described more fully in Section III below).

   If property cash flows were evenly distributed over the loan term without volatility, assessing Term Risk would be simple. However, over time property cash flows often prove to be uneven due to lease turnover and variability of expenses. An underwriter therefore considers the impact of potential disruptions to the revenue stream, and requires a higher debt service coverage ratio and other structural credit enhancements, such as reserve funds, that will enable a loan to remain current during its term.

b. **Maturity Default** – The risk of default at the date when a loan is due is referred to as the "Maturity Risk" of the loan. Maturity Risk reflects the ability of a borrower to either obtain refinance proceeds sufficient to fully repay the matured loan or to sell the property and utilize sales proceeds to repay the loan. Common credit metrics used to assess Maturity Risk are debt constants, debt yield and loan-to-value ratio. An underwriter considers the relationship between lease termination and loan maturity to assess how a new lender will view the quality of the property's cash flow if the loan is to be refinanced at maturity. During periods when the availability of credit is scarce, interest rates are trending upward, and/or property values have fallen, there is risk that a loan can meet its debt service obligations up to maturity, but cannot meet its repayment obligation. An underwriter can mitigate such risk by lowering initial loan proceeds or requiring amortization of the loan during its term.

c. **Technical Default** – While term and maturity defaults are known as Monetary Defaults, defaults of a non-monetary nature are referred to as Technical Defaults. The term Technical Default should not be interpreted as a minor default because some technical defaults can result in severe losses to the lender if not cured by the borrower within a reasonable period of time. For example, if a borrower neglects to adequately insure a property, as required by the terms of the mortgage, the property and loan may be exposed to material adverse consequences and risk of loss. In determining the likelihood of a technical default, an underwriter evaluates the borrower's willingness and capacity to comply with the requirements of the loan agreements beyond payment terms.

Thorough underwriting designed to avoid default risk focuses on four key areas:

- The economic strength and supply and demand dynamics for other properties in the market in which the collateral property operates;
- The competitiveness of the collateral property in its market and its ability to generate cash flow to pay debt service during the term of the loan and be refinanced upon maturity;
- The equity contribution and management expertise of the borrower/sponsor; and
- The structure of the proposed loan to minimize and mitigate known risks.

To promote high quality underwriting with greater transparency, CREFC is offering the following principles-based underwriting framework relating to each of these analyses, as well as common definitions and computations for the key metrics used by lenders.

II. Market analysis

The dynamics of the market in which the property operates provides the foundation for the likely performance of the collateral. A comprehensive market analysis includes an assessment of macro and local economic and demographic trends, supply and demand factors impacting the property, and the positioning of the property relative to competitors.

By tracking and projecting market trends, an underwriter can reasonably predict the commercial viability of a particular property over the long-term - including the term of the loan and beyond the anticipated refinance period. A thorough understanding of overall market conditions allows an underwriter to more accurately assess underwritten cash flow and projected performance, and form a current and future value opinion for the property.

a. **Economic and demographic trends** – Over the life of a loan, commercial real estate fundamentals (e.g., rents, vacancies and absorption) are correlated to broad trends of the economic cycle, including GDP growth, employment growth, business investment, disposable income and consumer sentiment, and changing market demographics. Both economic and demographic trends influence the demand for space. On a local level, market-specific economic conditions can have a profound impact on local commercial real estate fundamentals. Local market conditions tend to be sensitive to factors such as trends in population growth, major area employers, local job formation, household formation, median income and disposable income. Hence, risk is reduced when the property operates in a robust market that generates space demand through increasing employment and other local attributes.

b. **Supply and demand** – Supply in a given market or submarket is determined by the current inventory of a particular property type or, more granularly, by a subtype of property within a given property type, plus new and planned development. Future supply can be assessed by reviewing local zoning and building codes as well as planned developments in the permitting or local building approval process. Population, economic diversity and growth drive demand for space for each type of property in the market. Market rents, vacancy rates, lease-up times, leasing concessions and tenant improvement allowances are the quantifiable impact of supply and demand dynamics on property performance (that is, cash flow). Sales prices, capitalization rates and discount rates are the quantifiable results of supply and demand on property valuation. Risk is reduced in markets where demand meets or exceeds current and anticipated future supply.

c. **Competitive set** – Ultimately an underwriter assesses whether tenants want to be in the particular property collateralizing a proposed loan. Accordingly, beyond understanding the supply and demand trends in a particular market, an underwriter also assesses a property's strengths and weaknesses relative to its competition. Comparative factors include location, size, property condition and age, parking ratios, ingress/egress, amenities, views, visual appeal and a host of other factors both quantifiable and non-quantifiable. The underwriting process must consider future changes to the competitive set, such as additions to supply or renovation and upgrades to a competitive property, which will likely impact the subject property's desirability and performance in terms of absorption, vacancy, and rental rates and concessions.

III. Property Cash Flow Analysis

a. Overview

A collateral property's current cash flow is the primary indicator as to whether a proposed loan's periodic debt service will be paid, and a property with stable and increasing cash flow will maintain the value required for repayment at maturity. Accordingly, detailed analysis of all property revenue and expenses is essential to underwriting and risk mitigation. Most loans that are securitized (particularly fixed-rate loans) are collateralized by stable properties; that is, properties that are fully or nearly fully leased to their market potential and have one or more years of operating history. As a result, an underwriter focuses on the property's current cash flow characteristics.

For an income producing property, Net Operating Income is defined as total revenue less total expenses; it is the income generated by the property from its usual operations, excluding expenditures likely to be capitalized rather than expensed by the borrower. Revenues generally include rental income from leases (or nightly room rates for hospitality property), contractual reimbursement of operating expenses, participation in tenant sales revenues (for certain retail properties) and other recurring revenue related to a property's operations. Expenses encompass costs associated with operating and maintaining the property, including management fees, franchise fees, utilities, routine maintenance, cleaning and landscaping, employee salaries, marketing, costs of goods sold (for hospitality property), insurance and real estate taxes.

Net Cash Flow is defined as Net Operating Income less the cost of capital improvements necessary to maintain the property in its current condition and, in the case of commercial property, the cost of re-tenanting space upon lease expiration, which may include both leasing commissions and tenant improvements.

In order to accurately analyze property cash flow, the underwriter obtains, at a minimum, the following information from the borrower:

- **Operating statements** – prior three calendar years (if available) and most recent year-to-date;
- **Operating budget** – current and future year operating budget; and
- **Current Rent Roll** – should include the tenant name, leased area, lease commencement date, lease expiration date, current rent, contractual rent increases during the lease term, operating expense reimbursements, renewal options, termination options, current or future concessions, and other pertinent terms or conditions such as co-tenancy provisions. Co-tenancy provisions are most often found in retail leases wherein the loss of a major tenant or combination of tenants creates additional rights to one or more remaining tenants. These rights most frequently take the form of reduced rental payments, rental payments calculated as a percentage of gross sales, or other concessions that would adversely impact the property cash flow. Such rights continue until new tenants are procured by the landlord/borrower and open for business. The landlord's inability to re-tenant the property within a specified time frame may give other tenants additional rights, up to and including early lease termination.

The above information should be certified by the borrower or sponsor who would be legally or financially liable to the lender for the accuracy of the information. Certain summary information from the historical and recent operating statements and rent rolls are generally disclosed to CMBS investors in the offering documentation. In addition, CREFC's Model Representations and Warranties include a representation from the Loan Seller that it has obtained historical rent rolls and operating statements for each property, and the Mortgage Loan Documents require the borrowers to provide such information on an ongoing basis. To further understand and verify the property cash flow, an underwriter obtains and reviews additional supporting information, which may include but is not limited to:

- Tenant leases;
- Management agreement;
- Utility invoices;
- Property tax invoices;
- Insurance policies;
- Service contracts;
- Equipment leases;
- Ground leases;
- Historical occupancy schedule;
- Borrower bank statements or collection reports;
- Historical capital expenses and leasing costs; and
- Reciprocal easement agreements, condominium agreements, PUD agreements and other documentation affecting property operations.

b. Historical Net Operating Income

To understand a property's cash generation ability, an underwriter first reviews net operating income during prior periods. Typically, the source for historical net operating income is financial statements prepared in accordance with generally accepted accounting principles (GAAP), which may or may not have been audited by a certified public accountant. The underwriter computes a Historical Net Operating Income, which is the actual net operating income the property has generated in previous years, excluding non-recurring or extraordinary items or non-property related items. For example, if a prior year's operating statement included significant investment income that was attributable to a borrower's investments rather than the property's operations, such income would be eliminated from revenue in computing Historical Net Operating Income.

Historical net operating income may be based on one or more prior 12 month periods, or from a partial year that has been annualized, if such annualization can be supported. In general, a property with one or more years of history of net operating income, especially if substantiated by audited financial statements, is considered less risky than a property with revenue and expenses that have not yet been fully determined or stabilized.

To the extent available, historical operating information for the past three years is generally disclosed in CMBS offering documentation. CREFC recommends the following fields be included in Annex A for the past three years: Effective Gross Income, Operating Expenses, Net Operating Income, Capital Expenses, Net Cash Flow and Occupancy Percentage.

c. Underwritten Net Operating Income

A critical component of arriving at a sustainable property cash flow is the underwriter's determination of a property's "Underwritten Net Operating Income," also referred to as "Normalized Net Operating Income." The Underwritten Net Operating Income is meant to reflect the stable and consistent net operating income of the property, eliminating any periodic anomalies. For example, if fuel costs were particularly high in the current year, an underwriter might average the fuel costs over the prior three years to derive a more appropriate indicator of "normal" performance. Accordingly, an underwriter considers trends in property income and expenses and how these trends may be impacted by current and anticipated market conditions.

Underwritten Net Operating Income is derived based on facts regarding the market and the property rather than speculative projections regarding the property's potential performance. In CMBS lending, significant assumptions are documented and disclosed to investors.

The Underwritten Net Operating Income is generally based on a current rent roll and Historical Net Operating Income with certain adjustments made to revenue and expenses to reflect known facts and circumstances regarding the property's current operations and market conditions which may include:

- Contractual increases in rent over the next six months for leases in place;
- Newly executed leases that may not have been in place during the previous period;
- Leases that have expired during the previous period;
- Leases that will expire in the next 12 months;
- Contractual increases/decreases in operating expenses;
- Real estate tax increases/decreases based on changes in assessed value or millage rate; and
- Any new revenue or expense items calculated based on adjustments to other revenues and/or expenses.

The calculation of Underwritten Net Operating Income involves a detailed look at each property-related revenue and expense item as described below. The following fields are recommended by CREFC to be included in Annex A to provide investors more detailed information regarding the underwriting assumptions: Revenues, Effective Gross Income, Operating Expenses, Replacement Reserves, Net Operating Income, Capital Expenses, Net Cash Flow and Occupancy Percentage.

Rental Income

An underwriter analyzes each line of the property's operating statement provided by the borrower. Perhaps the most important part of the analysis is assessing the sustainability of the property's rental revenue, which typically begins with an understanding of "in-place" rent, that is, the rent that the borrower is currently collecting from the property's tenants based on lease obligations, without underwriting adjustments.

As an underwriter assesses revenue more fully, the details of the analysis vary by property type. For multi-family properties, the analysis focuses on market trends and whether the collateral is achieving rents and occupancy levels consistent with market averages. Location, access, parking, proximity to employment and retail centers, services and amenities are all considered in assessing the property's ability to generate ongoing demand for tenants. For hotels, an underwriter focuses on the various components of revenue – rooms, and food and beverages – as well as the property's mix of business/leisure customers, flag (branding) and reservation system, and the management experience of the operator. An analysis of senior housing reflects the level of care provided to the tenants, which ranges from meals to full medical staffs, and whether the revenue is private pay or based on reimbursements from Medicare and Medicaid.

For an office, retail or industrial property, the analysis focuses more on the terms of individual leases and the creditworthiness of the tenants. Leases are reviewed to understand base rent, concessions granted to the tenants as inducement to rent, reimbursements of the property's operating expenses, and the terms of the leases and tenants' options to renew. On a property level, the percentage of space with expiring leases in each year – the rollover analysis – identifies potential disruption to cash flow during the term of the loan. The in-place rental rates are compared to the rental rates achieved at comparable properties in the market to determine if the building is competitive and if rental revenues may rise as leases expire (although such higher rents would generally be excluded from Underwritten Net Operating Income unless the new lease contracts have already been executed). An underwriter also assesses whether the in-place rental rates exceed the rental rates achieved at comparable properties in the market. Such a rental rate premium may result in the underwriter reducing the rental revenue when computing the Underwritten Net Operating Income if the underwriter is concerned that the premium is not sustainable.

If a property is not fully leased, an underwriter will typically withhold credit for future leasing, except in some instances in which a tenant has executed a lease but has yet to occupy its space. Other anticipated improvements in property performance are usually not factored into the underwritten cash flow. However, anticipated deterioration in rental income or negative events (e.g., excessive lease rollover during the loan term in a property with above market leases, or deteriorating market conditions) are addressed by employing more conservative underwriting assumptions and/or through the utilization of structural enhancements such as reserves or letters of credit discussed in Section V.

Repayment risk is mitigated by the creditworthiness of the tenants in combination with the lease terms, both key drivers of cash flow stability. Leases are contracts that typically cannot be terminated unless the tenant is in bankruptcy. Hence, having high-credit quality tenants on long-term leases significantly enhances the stability of the property's revenue over the term of the loan. In contrast, weak or insolvent tenants may not be able to meet their obligations and could trigger a lease default. Retail properties may further have co-tenancy clauses where the performance of one weak tenant affects the lease terms of another (potentially healthier) tenant.

Typical adjustments that may be made to Historical or In-Place rental revenue include:

- Rent in place with contractual rent increases over the next six months;
- Rent in place with index-related rent increases over the next six months;
- Rent for leases signed but tenants not yet in occupancy;
- Rent for dark/bankrupt tenants excluded;
- Mark-to-market based on prevailing market rents (including concessions);
- Mark-to-market based on occupancy costs (retail properties);
- Rent decreases due to co-tenancy provisions; and
- Adjustments for non-recurring concessions.

An underwriter's mark-to-market adjustments to rents and occupancy costs usually result in cash flow decreases and are only used to increase cash flow when facts and circumstances clearly support that conclusion.

Borrowers may execute leases for rental space in their own properties in order to increase contractual revenues and improve Net Operating Income. These intercompany leases, sometimes referred to as master or umbrella leases, provide for payments of rental income from one property owner controlled entity to another, regardless of whether or not the space is occupied. Future tenants may execute subleases with the master tenant, with any positive or negative difference in rental payments retained by the master tenant. Since master leases are not arm's length contracts, they may not reflect prevailing market terms, and could artificially inflate the Net Operating Income of a property. In a distressed situation, a borrower may withhold rental payments on a master lease. The revenue from master leases are not included in an underwriter's calculation of rental income unless the following are true: (a) the lease reflects market terms, (b) the master lease premises are either improved and ready for occupancy or have reserves set aside for tenant improvements, and (c) the master tenant is considered investment grade creditworthy, or has posted reserves to make rental payments.

The methodology used for determining underwritten rental income should be described in detail and disclosed to investors. The offering documentation contains information regarding the amount of revenue used in the underwriting of the loan and any revenue from master leases or ground leases will be separately noted.

Occupancy

Even if the property appears to be stabilized, an underwriter confirms occupancy because only occupied space generates revenue. Seemingly straight-forward, the occupancy rate may be computed in several ways, and impacts the likely cash flow to be generated and the risk of the proposed loan:

- **Physical Occupancy**: The amount of space on a square footage or unit (multifamily, hotel) basis that is currently occupied by a tenant divided by the total square footage or total units available for lease. This calculation represents the total space at the property that is occupied by a tenant on a percentage basis. In commercial properties, a tenant must be open for business and paying rent to be considered as an occupied tenant.
- **Economic Occupancy**: The total rent collected from the property divided by the total rent the property would achieve if it were 100% occupied. This calculation represents the total rent on a percentage basis that the property is achieving. If economic occupancy is less than physical occupancy, it could signal that the property is experiencing collection issues or achieving rents that are less than market rates. Conversely, if economic occupancy is greater than physical occupancy, the property may be benefitting from above market rents, which could negatively impact cash flow as leases expire and replacement lease contracts at lower rents are executed.
- **Leased Occupancy**: The amount of space on a square footage or unit basis that is currently leased divided by the total square footage or total units. To be considered a leased space, a signed lease must be executed; however, the tenant does not need to be physically in its space to be considered a leased tenant. Leased occupancy is used to determine how much space is remaining to be leased.

In CMBS lending, the methodology for computing occupancy should be documented and disclosed to investors. Annex A in the offering documentation should address current physical occupancy. Historical occupancy information should be provided by the borrower and disclosed in Annex A.

Percentage Rent/Overages

Certain retail property leases provide for the collection of a percentage of the tenant's sales ("percentage rent" or "overages") in addition to or in lieu of base rent. Percentage rents are inherently more volatile than contractual base rents due to the variability of consumer demand for the tenant's merchandise. Accordingly, an underwriter will typically evaluate percentage rent on a tenant-by-tenant basis. Depending on the historical stability and trend of percentage rent collected by the borrower, and current market rental rates relative to the "rent" the tenant is paying (including base rent, percentage rent and reimbursements), an underwriter determines an appropriate amount of percentage rent to underwrite. Often the percentage rent is underwritten at a discount or excluded altogether from the underwriting analysis due to its volatility.

Acceptable methodologies for calculating underwritten percentage rent include:

- Current year to date or trailing twelve month sales results;
- Previous year collections;
- Previous year collections plus adjustments (inflation/changes in tenancy);
- Previous year sales;
- Previous year sales plus adjustments (decreases in sales/inflation/changes in tenancy).

Expense Reimbursements

Many commercial leases, particularly for office, retail and industrial properties, require tenants to pay a portion of property operating expenses, which may include items such as utilities, repairs and maintenance, real estate taxes, insurance and in some cases management fees. The calculation of underwritten expense reimbursements can be complicated and may be presented in a number of different ways, including:

- Previous year collections;
- Previous year collections with adjustments (inflation/changes in tenancy);
- Individual lease terms and previous year operating expenses; and
- Individual lease terms and pro forma operating expenses.

Leases may specify certain percentage allocations for operating expense reimbursements, or may simply be based on a *pro rata* allocation. Often, tenants may only be required to pay for increases in expenses over those expenses incurred in a specific previous year (base year) or those expenses above a fixed amount.

Specific calculations of expense reimbursements, based on actual lease terms and supportable operating expenses (discussed below) are usually superior to simple estimates based on prior year actual expenses.

Effective Gross Income

To estimate total property revenue, an underwriter may also include other income from such sources as parking, laundry and other services, depending upon the type of and circumstances at the property. Other income is typically based on consistent historical collections over several periods, and may be adjusted to reflect actual or anticipated changes in occupancy or use of the property.

An underwriter often computes the gross potential rent of the property, that is, the maximum rental revenue that could be achieved if all the space were rented at market rates, and then deducts vacancy, below market rents, credit loss, and rental concessions to derive Effective Gross Income. Effective Gross Income underwritten for the loan is recommended to be included in Annex A.

Operating Expenses

An underwriter also reviews trends in the operating expenses of the property. Such expenses include employee salaries, utilities, maintenance and repairs, marketing, insurance and real estate taxes. Hotels and senior housing have unique expense categories mirroring their revenue components.

Fluctuations in certain expenses during previous periods are either normalized to determine the average monthly expenses or analyzed to determine how changes in occupancy over time impact the variable component of the expenses. In addition, underwritten operating expenses may reflect inflation adjustments, new operating contracts with service providers, changes in occupancy, changes in employee salaries, changes in utility rates, and efficiencies related to capital improvements. Underwritten operating expenses may be determined using alternative methodologies including:

- Previous 12 months;
- Previous 12 months with adjustments (inflation or changes in occupancy, etc.); and
- Forward budget.

Aggregate Underwritten Operating Expenses are recommended to be included in Annex A.

Management Fees

Another expense is the fee paid to the property manager. When the property is owner-managed without a management agreement or when the property's management company is an affiliate of the borrower, management fees are typically underwritten at market levels for that property type. Generally, an underwriter assumes a minimum management fee, which can range from 3-5% of Effective Gross Income. For very large properties, the gross amount of underwritten management fees may be capped at a specific dollar amount. Underwritten management fees may be determined using various methodologies including:

- Percentage of Effective Gross Income;
- Percentage of Effective Gross Income excluding certain line items (types of expenses);
- Cap at a maximum dollar amount per annum; and
- Actual management agreement.

Real Estate Taxes

Real estate taxes are underwritten to current levels when it is determined that these taxes reflect a full assessment of the property. If the property is not fully assessed or is benefitting from a tax abatement, underwritten taxes should be increased to reflect the market value and property tax rates within that jurisdiction unless the abatement is for an extended period of time past the loan maturity date, in which case taxes below full assessment can be used. If the assessment is being appealed by the borrower, the underwriter only uses the lower assessed value if the appeal has been successfully concluded. When the loan is financing a property acquisition, an underwriter also considers whether the sale will trigger a reassessment based on the sales price. Similarly, the underwriter may consider an increase in real estate taxes that may be triggered by a foreclosure or other property transfer related to the financing. Underwritten real estate taxes may be determined using alternative methodologies including:

- Previous 12 months;
- Previous 12 months with adjustments (inflation);
- Including/excluding tax abatements;
- Current tax bills; and
- Pro forma assessment and millage rate.

Insurance

During the past few years, there has been additional focus on insurance coverage, particularly the types of events and conditions that are covered by the policy/ies, and the related costs of the various policy/ies (see additional information relating to insurance in

Section V). In addition to standard coverage for hazards, liability and business interruption, coverage for terrorism is often required for collateral securing CMBS loans. Additionally, if the collateral is in a seismic or flood zone, or a region with a history of windstorms, an underwriter will typically require insurance covering damage from such events. An underwriter is also increasingly focused on the management of mold, termites, and other circumstances that may deteriorate the property's condition. Underwritten insurance expense may be determined using various methodologies including:

- Previous year;
- Previous year with adjustments (inflation); and
- Revised insurance quote.

The CREFC Model Representations and Warranties contain representations from the Loan Seller with respect to the insurance in place on the Mortgaged Property, including hazard, liability, business interruption, terrorism, flood and seismic (as appropriate).

Ground Rent

A mortgage loan may be secured by a borrower's fee interest in the land and improvements, or a leasehold interest whereby the improvements are owned by the borrower, but use of the land is pursuant to a ground lease between the borrower, as ground lessee, and the land owner, as ground lessor. In a typical ground lease, the ground lessee has full use of the property during the term of the lease, after which the right to use the land reverts back to the ground lessor. Since improvements on the leased land (including buildings, fixtures, paving and landscaping) cannot be removed, the use and ownership of the improvements will also revert to the ground lessor at the end of the ground lease term. Therefore, it is important to confirm that any mortgage debt secured by a leasehold property will be fully repaid prior to the final maturity of the ground lease.

Mortgages secured by properties subject to ground leases are considered riskier than those secured by fee simple interests because there is a third party entity with a financial stake in the real estate; the building owner has additional performance thresholds as detailed in the ground lease. Therefore, important considerations in underwriting a property subject to a ground lease include the following:

- **Term** – An underwriter compares the term of the ground lease to the term of the proposed loan and considers risk mitigants such as amortization to avoid repayment risk at the loan's maturity. Lenders often require that the term of the ground lease (including options) exceed the amortization period by a "buffer" period of 10-20 years.

- **Extension Options** – An underwriter researches whether the borrower (the ground lessee) has options to extend the ground lease including the conditions and terms associated with such an extension. The impact of ground lease extension terms on the property's cash flow may impact the borrower's ability to refinance the loan at maturity.

- **Changes in rental payments** – Since many ground leases terms are very long (50-99 years), they often provide for increases in rent during their term. The increases in rent may be based on a fixed amount, based on inflation (CPI or other indices), based on an updated appraised value of the land, or based on the cash flow generated by the improvements. An underwriter analyzes future changes in ground rent, and the impact of such changes on the property's ability to continue to service the proposed debt.

- **Subordination** – An underwriter determines whether the ground lease will be subordinate or superior to the mortgage loan. In a subordinated ground lease, the lender's lien on the property will take precedence over the ground lessor's interest; after a mortgage loan foreclosure, the ground lease will be cancelled and the lender will own the land and improvements. In an unsubordinated ground lease, the mortgage lender will foreclose on the property subject to the ground lease, and would continue to make ground rent payments after the foreclosure.

- **Other important considerations** include the lender's right to receive notices of, and cure, ground lease defaults, use of insurance proceeds, financing of the ground lessor's interest and assumability of the ground lease.

A ground lease may affect a property's value and its ability to generate cash flow to pay debt service on a mortgage loan. A capitalization rate ("Cap Rate") used to value the property may be increased to reflect the added risk and complication of the ground lease. Ground rent can be incorporated into property cash flow analysis in several ways; including but not limited to:

- Treating ground rent as an operating expense, a common approach when the ground lease is subordinate to the mortgage loan;
- Treating ground rent as a senior lien on the property by excluding the ground rent from the calculation of Net Operating Income and Net Cash Flow and instead adding the ground rent to mortgage debt service when calculating Debt Service Coverage Ratio.

Regardless of the terms of the ground lease itself, an underwriter may require a reserve for ground rent payments so any monetary defaults in a ground lease can be cured. Loan documents should give the lender, and therefore the servicer and investors, clear and specific notice and cure provisions relative to any unsubordinated ground lease. In addition, the CREFC

Model Representations and Warranties contain representations from the Loan Seller with respect to the key provisions of any ground lease.

d. Underwritten Net Cash Flow

Underwritten Net Cash Flow is Underwritten Net Operating Income less an allowance for ongoing capital expenses, including the cost of maintaining the property in its current condition and the cost of keeping existing tenants or attracting new tenants. Underwritten Net Cash Flow is an estimate of the cash available to make principal and interest payments on a proposed commercial mortgage, and is typically the numerator in the debt service coverage ratio.

Leasing Costs

While the expense of marketing to prospective tenants is treated as an ordinary operating expense, tenant improvements and leasing commissions are not considered part of Net Operating Income but are deducted to derive net cash flow. Tenant improvements are the costs for retrofitting a certain area of the building for a tenant in an office, industrial or retail property, and include such items as painting, carpeting, space partitioning, carpentry, light fixtures, restroom renovations, and other interior finishes. Tenant improvements are generally provided by the borrower as an inducement (or concession) to a prospective tenant to secure a lease. There is generally an inverse relationship between the cost of tenant improvement allowances provided to a tenant and the strength of the market (i.e., the greater the demand for space, the lower the tenant improvement allowance provided by the landlord). The borrower may also have to pay a leasing commission to the broker of the leasing transaction. An underwriter will typically calculate all costs estimated to lease vacant and re-lease expiring space for office, retail and industrial properties based on the anticipated lease rollover schedule over the term of the loan.

The cost of re-leasing space adds risk to commercial mortgages secured by properties with anticipated significant lease expirations during the term of the loan. To mitigate that risk, an underwriter may require that the borrower contribute excess cash flow from the property or the borrower's own funds to a reserve fund for tenant improvements and leasing commissions at closing and/or monthly over the loan term. The greater of the normalized re-tenanting expense amount or the required annual contribution is deducted from Underwritten Net Operating Income to calculate Underwritten Net Cash Flow.

Leasing costs are included in Capital Expenses and generally disclosed in Annex A of the offering documentation for both historical performance and underwritten assumptions.

Replacement Reserves/Engineering Report

Capital expenditures are costs incurred to maintain the collateral's physical condition and its competitiveness in the market. An underwriter engages an engineering firm to inspect the property and identify items requiring immediate repair (typically within 12 months) and items requiring attention over the loan term (the engineer's evaluation period is typically equal to the loan term plus two years). An underwriter typically requires that a portion of the loan proceeds be set aside in a reserve account at closing to cover the engineer's estimated cost of immediate repairs. The borrower is provided a time frame to complete these repairs (typically 6 to 12 months). The funds in the reserve account are then released to the borrower upon the lender's/servicer's satisfaction that the identified repairs have been completed.

An underwriter also often requires the borrower to set aside up-front loan proceeds or make monthly payments into a replacement reserve account in an amount at least equal to the needed reserves estimated by the engineer (average amount estimated over the engineer evaluation period). The borrower may draw upon these replacement reserves to complete capital repairs over the term of the loan.

An underwriter will typically underwrite an estimate for ongoing capital expenditures based on the greater of the firm's minimum guideline for the property type in question or the engineer's estimate. Like leasing costs, this estimated annual amount is deducted from Underwritten Net Operating Income to calculate Underwritten Net Cash Flow.

CREFC Model Representations and Warranties include a representation from the Loan Seller regarding the diligence performed with respect to the physical condition of the Mortgaged Property. Replacement Reserves underwritten in the calculation of Underwritten Net Cash Flow are generally disclosed in the offering documentation in Annex A. In addition, Annex A should include the amount of any upfront and ongoing reserve requirements for Leasing Costs, Replacement Reserves and any other required escrows.

Environmental Related Expenses

Due to federal regulations extending environmental liability to all owners in a property's chain of title, an environmental issue at the property will significantly limit the lender's ability to foreclose on the property in the event of default. Accordingly, the underwriter also engages a qualified environmental engineer to prepare a Phase I environmental assessment (as defined by the American Society of Testing Materials [ATSM]) of the property to identify areas of environmental concern. If issues of environmental concern are identified by the Phase I consultant, an underwriter may:

- require additional investigation in the form of a Phase II assessment (also as defined by the ATSM;
- require that the issues identified be remediated prior to or subsequent to loan closing (the underwriter generally requires the establishment at closing of an environmental escrow to cover the costs of any post-closing remediation);
- require that the borrower implement an operations and maintenance (O&M) program (in the case of properties with manageable asbestos or lead-based paint);
- implement an environmental insurance policy; or
- withdraw or reduce the amount of the proposed financing.

The cost of environmental remediation is typically reserved at closing; any ongoing monitoring or remediation cost is deducted from Underwritten Net Operating Income to derive Underwritten Net Cash Flow.

The offering documentation should detail the amount of any upfront or ongoing reserves required for environmental remediation. In addition, CREFC Model Representations and Warranties include a representation from the Loan Seller regarding the diligence performed with respect to the environmental condition of the Mortgaged Property.

f. Credit Metrics: Debt Service Coverage Ratio, Capitalization Rate, Debt Yield, and Loan to Value Ratio

The Debt Service Coverage Ratio (DSCR) measures how much cash flow the property is generating to fund the proposed loan's debt service that is, the monthly payments of interest and principal. The DSCR is calculated by dividing the Underwritten Net Cash Flow by the annual contractual debt service. A DSCR of 1.0x implies that the property generates just enough cash flow to service the debt. A higher DSCR means the property is generating more cash than needed to cover debt service and therefore less risk of payment default, so the higher the DSCR the more Term Risk is mitigated. The appropriate Debt Service Coverage Ratio varies by property type and the expected volatility of cash flow.

The Loan to Value Ratio (LTV) is computed by dividing the proposed loan balance by the value of the property. A lower LTV presents less risk to the proposed mortgage lender because in the event the value of the property declines it might still have sufficient collateral value to be able to repay the remaining balance of the loan. CMBS underwriters engage an appraiser to prepare a third-party valuation of the property. These valuations are governed by the Uniform Standards of Professional Appraisal Practice (USPAP) and, if the lender is a bank, the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA).

Appraisal methodology typically employs three approaches to value. The income approach is based on the property's net operating income and cash flow. The sales comparison approach is based on the sale prices of comparable properties, and the cost approach is based on the amount required to replace the property (including the value of the land) adjusted for depreciation. In support of the valuation, the appraiser provides information relating to the attributes of the property and the market in which it competes, including comparable sales and rental rates. Depending on economic and market conditions, the appraiser generally places most weight on the income approach when reconciling the final value. An underwriter typically computes the LTV based on the final value concluded by the appraiser. LTV is both an indicator of the borrower's ability to repay the loan at maturity as well as an indicator of loss severity in the event of default.

The Capitalization Rate (or Cap Rate) is the ratio between the Net Operating Income of a property and its value. Stabilized properties are often valued by dividing Net Operating Income by prevailing market Cap Rates; this valuation approach is used by appraisers as part of the income approach to value as discussed above.

Debt yield is calculated by dividing the Underwritten Net Operating Income or Net Cash Flow by the proposed loan amount. Higher debt yields imply less risk. A property with a $1 million Underwritten Net Operating Income and a $10 million loan balance would have a debt yield of 10%. In this example, as long as property could sell at a capitalization rate of less than 10%, the proceeds generated from the sale of the property would be sufficient to repay the loan. When the debt yield is reported, it should be clear whether the calculation is based on Net Operating Income (NOI Debt Yield) or on Net Cash Flow (NCF Debt Yield).

In CMBS lending, the issuer should disclose to investors which metrics were used to assess the creditworthiness of each commercial mortgage as well as how those metrics were calculated (i.e., the derivation of the numerator and denominator of each ratio). CREFC recommends disclosing Debt Yield and DSCR in Annex A using both Net Operating Income and Net Cash Flow calculations.

IV. Borrower Analysis

Commercial mortgages can be recourse or non-recourse (typical of mortgages included in pools securing CMBS issuances). Recourse loans are considered less risky than non-recourse loans. In a recourse loan, all of the borrower's assets and income (that is, in addition to the mortgaged property) may be relied upon by the lender to support the periodic loan payments of principal and interest as well as to repay any remaining principal balance upon refinance or maturity. Under a non-recourse loan, the lender may only rely on the income produced by the property and the value of the property for periodic payments and principal balance repayment. Furthermore, CMBS borrowers are typically Single Purpose Entities ("SPEs") with the property being the only asset of the entity. Therefore, there are no other assets or income sources to be relied upon by the lender in the event of default. (See Section V for further discussion of SPE and non-recourse loans, including recourse provisions previously known as "bad boy" carveouts.)

Despite the non-recourse status and SPE status of the borrower, the borrowing entity is ultimately owned by individuals or entities that are known as the "Sponsor/s." The actions of the Sponsor/s and their financial wherewithal can have a direct impact on the preservation and enhancement of the value of the property. To fully understand the risks associated with a loan, the evaluation of the Sponsor focuses on the Sponsor's equity in the transaction, the Sponsor/s' capability to manage the property and the reputation and integrity of the individuals making financial and asset decisions.

a. Equity

The equity a sponsor has in a transaction is simply the value of the property less the amount of debt encumbering that property. The more cash equity, the more the sponsor has "skin in the game" and the incentive to prevent the default of the loan and possible loss of that equity. Moreover, greater equity protects the lender from market downturns that result in lower property values.

While simplistic in calculation, a lender needs to evaluate not only the amount of equity, but the source and quality of that equity. Cash investment in a property, either at acquisition or through periodic improvements, clearly demonstrates the Sponsor's commitment to the collateral for the loan. A borrower with less cash equity may treat the real estate investment as merely an option to own the property if values increase, rather than having a true commitment to owning and operating the property as an ongoing business. Such a borrower is not as likely to maintain the property and ensure that the debt is repaid, and is thus considered of higher risk.

Even a large cash equity investment in the borrowing entity requires further analysis. The source of that cash must be considered, as well as whether the purchase of the property was based on a sound economic decision or a tax strategy, and whether the cash investment was sourced not from the borrower but from additional mezzanine debt masquerading as equity. While not a leverage technique per se, some sponsors will syndicate the equity in a real estate investment. Through this capital-raising activity, the sponsor will have a limited amount of its own money invested, and instead acts as an asset manager for disparate investors. Each of those investors has made an economic decision to invest and may have leveraged their own equity. In a type of syndication known as Tenants in Common and Delaware Statutory Trusts, the investors may have made tax-motivated decisions and may not be interested in or capable of making further capital investments in the property if its performance deteriorates. Such syndicated transactions, when there is no single interested party with skin in the game and good property management expertise, present higher risk for a lender.

Sometimes the equity is derived from an appreciation in the appraised value of the property over time rather than a recent cash infusion. Either through improving market conditions or specific efforts of the borrower to reposition and improve the marketing and management of the property (often referred to as "sweat equity"), the borrower has equity to lose and is therefore motivated to keep the loan performing. However, protecting implied, or sweat, equity is not as strong a motivation as preserving an actual cash investment in the property. Therefore, loans in which borrowers maintain a significant cash investment are considered less risky than those in which the borrower has already recovered its initial invested equity.

In periods of rising property values, the refinancing of a prior mortgage may provide the borrower with cash proceeds in an amount greater than the existing mortgage. If these excess proceeds reduce the borrower's cash equity, or in some cases are greater than the equity previously invested in the property, the motivation of the borrower to avoid default is diminished and the loan is considered more risky.

b. Management

The borrower is responsible for either managing the property directly or hiring a qualified property manager. Additionally, the borrower has the responsibility to make capital decisions for the property such as renovations, expansions and major repairs, as well as deciding how and when to refinance. Therefore, a lender must be comfortable with the sponsor's financial position and operating experience, particularly relating to the property type being financed and the market in which the property operates. Understanding the asset management and property management agreements is critical, with a full review of the budgeting process, prior financial performance, competitive positioning, and leasing track record.

c. Reputation/Credit

One of the more difficult aspects of credit underwriting is trying to discern the character of the individuals who will be making decisions on behalf of the borrower. Evaluating character has some objective elements, but is ultimately a subjective assessment. The critical question for an underwriter is how the borrower will behave if the collateral's performance deteriorates or payments on the loan cannot be made for some reason. In evaluating character, the underwriter considers the sponsor's prior behavior including late payments, credit disputes or judgments and major litigation. Other matters of public record include bankruptcy filings and foreclosure actions against other properties with which a sponsor may have been associated. To further reduce risk, an underwriter also complies with required searches relating to money laundering activities and terrorism using the Office of Foreign Assets Control (OFAC) database.

Obtaining third-party credit reports on the sponsor and significant equity stakeholders and checking credit references and prior lending relationships can expose potential problems. Sponsor distress can also be revealed by non-payment of taxes or a history of mechanic liens. If red flags appear, the underwriter then interprets the facts and circumstances to understand the borrower's intent and the potential risk involved in lending to that borrower. No loan structure or equity can be relied upon to effectively cure a problem loan when the borrower has no motivation or intent to work with the lender.

V. Loan Structure and Credit Enhancements

a. Special Purpose Entities (SPE's)

Loans to be securitized require certain protections not only of the lender, but also of the trust into which the loans will be deposited and to the investors in that trust. One form of protection is preventing entities related to the borrower from using the properties securing the loans or the cash flow from those properties for purposes other than the repayment of the loans in the trust. Accordingly, an SPE's organizational documents should include multiple covenants designed to keep the SPE and the real estate it owns legally and financially separated from the parent entity, enabling the SPE to be bankruptcy-remote from the parent. In forming the SPE, the inclusion of one or more independent directors who must vote on bankruptcy or other major matters is intended to provide added protection to the entity's bankruptcy-remote risk profile.

CREFC Model Representations and Warranties include a representation from the Loan Seller regarding the requirement that for a loan in excess of $10 million, each borrower must be an SPE.

b. Recourse Carveouts

The non-recourse nature of commercial mortgage loans originated for CMBS allows borrower's counsel to provide a legal opinion on the bankruptcy-remoteness of the SPE structure. To reduce the risk associated with a non-recourse loan, an underwriter seeks limited recourse carveouts (previously referred to as "bad boy" carveouts) for fraud, gross negligence, bankruptcy filings, property waste, transfer violations, misappropriation of funds, environmental losses and other misconduct that could potentially trigger recourse to a sponsor without calling into question the SPE structure. These carveouts should come from a credit-worthy parent entity or an individual with direct responsibility for property operations.

CREFC Model Representations and Warranties include a representation from the Loan Seller regarding the recourse carveouts and that the guarantor has assets other than equity in the related Mortgaged Property.

c. Amortization

The inclusion of amortization in a commercial mortgage loan lowers refinancing risk at loan maturity. In the event that interest rates increase or the value of the collateral decreases over the term of the loan, the reduced loan balance at maturity increases the probability that the borrower will achieve an adequate refinancing debt yield and debt service coverage and be able to repay the loan. The shorter the amortization period, the more the loan balance will be reduced during the loan term. In determining an appropriate amortization period for a specific loan, the underwriter considers the volatility of the property type, the remaining economic life of the asset, LTV and the duration of the tenancy. Loans with partial or full term interest only periods are inherently more risky than loans where amortization begins with the first payment.

Amortization is standard disclosure in Annex A of the offering documentation.

d. Reserves and escrows

A commercial property tends to be a capital-intensive asset that periodically requires new capital to maintain and improve the property's physical quality and to lease space to new tenants. Reserve funds are used to set aside such capital when the loan is originated and periodically during the loan's term. Additionally, to protect the lender's collateral throughout the life of the loan, the underwriter may require the borrower to escrow funds for property taxes and insurance, similar to single-family lending.

Annex A should disclose the amount of any upfront and ongoing reserve requirements for Leasing Costs, Replacement Reserves and any other required escrows.

e. Cash management

The primary source of commercial mortgage debt service payments is the rental revenue collected from tenants. Accordingly, to mitigate risk, an underwriter often employs various cash management techniques to control that cash. In the "soft lockbox" approach, cash revenues are deposited into a lender established account that is controlled by the borrower or, alternatively, periodically swept by the lender from a borrower controlled account. A more risk averse approach is the “hard lockbox” that requires the tenants to directly send rental payments to a lender controlled account. Underwriters also structure loans with a “springing lockbox” under which certain events, such as falling below a debt coverage threshold or a monetary default, will trigger a more stringent cash management system. If the threshold is default, the effectiveness of a springing lockbox in mitigating risk is weakened.

The application of proceeds in the lockbox can also be used to mitigate risk. Typically, property revenues are applied to property operating expenses, debt service and required reserves; the excess, if any, is remitted to the borrower. However, after certain trigger events or borrower defaults, the lender may require that excess cash be retained as additional collateral for the loan.

Annex A should disclose if a lockbox is required and the type of such lockbox.

f. Insurance

Insurance products utilized to protect the property collateralizing a commercial mortgage cover a wide range of potential perils, including but not limited to:

- Title insurance (typically covering at least the full first mortgage amount);
- Property and casualty insurance (typically requiring full replacement cost value of the property);
- Boiler and machinery;
- General liability (based on type of property); and
- Business interruption insurance.

On a case by case basis, depending on the location and attributes of the property, an underwriter may also require flood, earthquake, wind, environmental, law and ordinance, and terrorism insurance. The appropriate amount of coverage is as critical to mitigating risk as the type of coverage, and a loan underwriter works with the insurance underwriter and other advisors to determine adequacy of coverage for each loan.

The CREFC Model Representations and Warranties contain representations from the Loan Seller with respect to the insurance in place on the Mortgaged Property, including hazard, liability, business interruption, terrorism, flood and seismic (as appropriate).

g. Other forms of credit enhancement

In addition to the more standard risk mitigation tools previously described, an underwriter may use other forms of credit enhancement to mitigate specific risks associated with a particular transaction. These include letters of credit issued by creditworthy institutions, partial and full sponsor guaranties including principal and interest guarantees, performance and completion guarantees, and hyper-amortization whereby all excess cash flow after interest and principal is satisfied is used to reduce the loan balance.

Annex A should disclose the amount of any letters of credit which are additional collateral for the Mortgage Loan.

VI. Collateral Evaluation

As previously discussed, the majority of commercial mortgage loans, particularly those intended for securitization, are non-recourse. Therefore, the lender must rely primarily on the property itself for repayment of the loan. As part of the loan underwriting, the underwriter or his designee physically inspects the collateral property. The objectives of the site inspection include:

- Determining any physical risks or benefits of the property, in terms of access, visibility, physical condition and market competitiveness;
- Verifying the physical occupancy of tenants on the rent roll;
- Interviewing tenants to determine any potential issues affecting the marketability of the property to current or future tenants;
- Meeting with management and maintenance personnel to assess the quality of management;
- Identifying competitive properties and their relative strengths and weaknesses;
- Observing adjacent land uses or developments that may affect the property's operations or become a source of future competition; and
- Analyzing the overall market to determine demand generators and other external issues that impact the property.

A site inspection includes photographs of the property, the competitive properties and the surrounding area.

VII. Conclusion

Commercial mortgage loans securitized through CMBS do not lend themselves to the development of universally applicable objective criteria that would be indicative of having lower credit risk as envisioned under the Dodd-Frank Wall Street Reform and Consumer Protection Act or otherwise. This is because these non-recourse loans are collateralized by the income streams from an incredibly diverse array of commercial property types that cannot be meaningfully categorized in a way that would allow for the practical application of such objective "low credit risk" criteria. This heterogeneity, however – coupled with the fact the typical 30-80 CMBS loan pool that is a fraction of the size of other ABS loan pools – allows both CMBS loan underwriters and investors to carefully examine the facts and circumstances for each proposed loan in a CMBS loan pool, an extensive examination that could not be meaningfully performed in other ABS asset classes.

For this reason, the underwriting framework outlined above consists of underwriting principles and procedures characteristic of a thorough underwriting process, and a disclosure regime that focuses on the manner in which that underwriting process was performed. The CREFC membership – which includes commercial mortgage lenders, CMBS issuers and CMBS investors – believes that this principles-based underwriting framework can and will:

- Generate the underwriting of lower credit risk CMBS loans; and
- When combined with necessary and appropriate underwriting transparency – allow investors to make their own independent underwriting evaluation and thus be in a position to better evaluate the risk profiles of the loans included in the CMBS issuances in which they are considering investing.

Finally, it is critical to note that the majority of the underwriting principles and disclosures outlined above already are standard industry practices although they have never been as formally outlined or presented as they are herein. That said, CREFC continues to work to integrate and effectuate these underwriting principles and disclosures through the related representations and warranties process and in the formal issuance and monitoring disclosure documents.

Appendix A – Risk Considerations for Each Type of Collateral

The following key factors are considered by an underwriter in the analysis of properties that will collateralize a proposed mortgage loan:

Office Properties

- **Location** – accessibility to public transportation, especially in Central Business District ("CBD") markets; for the suburban sector, accessibility to major roads and highways, other suburban office parks, hospitals, area hotels, restaurants, banks, and shopping.
- **Employment growth** – current and historical trends in employment in the surrounding submarkets, including a review of the types of industries entering or vacating the submarket.
- **Occupancy** – a comparison of the building's occupancy and occupancy trends with those of its competitors, trends in office absorption, rental structure, and tenant profile.
- **Tenant roster (rent roll)** – the composition and credit quality of the national, regional, and local tenants in the building.
- **Credit versus non-credit tenants** – creditworthiness of tenants and impact on ability to meet lease obligations.
- **In place lease rates versus market lease rates** – below market rents incentivize tenants to remain at the property and provide a buffer for the property in the event rents in the market drop.
- **Amount of subleasing and sublease rates** – market versus sublease terms and impact on renewals and sublease assignments.
- **Management capabilities** – management's strength and strategy in tenant selection, lease negotiations, and relationships with tenants.
- **Competition** – supply and demand dynamics in the market and the potential for revenue erosion due to future competition.
- **Parking** – adequate parking to meet zoning requirements and tenants' needs.
- **Structure and design** – the building's exterior and interior design, configuration, aesthetic appeal, and its adaptability to support present and future electrical and technological demands.
- **Floorplate** – the size of floorplates (or floor area) and their ability to accommodate tenant needs and flexible workspace design.

Retail Properties

- **Location, visibility and elevation signage** – the center's accessibility, proximity to major roads and residential developments, its signage, first floor vs. second floor entry, adequacy of turning lanes for shoppers, and other qualitative factors that help to differentiate the property among its competitors and draw shoppers.
- **Layout and design features** – the physical appearance of the center, including any layout and design features that date the center, diminish its appeal to shoppers, or result in functional obsolescence over the loan term.
- **Occupancy** – the center's historical and current occupancy trends and the potential impact on future performance.
- **Demographic trends** – evaluation of the trends in the trade area's population growth, income patterns, and disposable income.
- **Trade area** – an analysis of the primary trade area, how the trade area has changed over time, its effect on the center's capture rate, and the identification of the capture rate in the secondary and tertiary trade areas.
- **Sales** – trends in sales for anchor tenants and major tenants, and overall sales trends at the center.
- **Tenant mix** – strength of tenants at the center and their deterrent effect on future competition in the market and whether or not the center can support re-tenanting or any changes in tenant mix.
- **In place lease rates versus market lease rates** – below market rents incentivize tenants to remain at the property and provide a buffer for the property in the event rents in the market drop.
- **Management** – management's operating history and competitive strategy, as evidenced by its experience with tenant selection, lease negotiations, and overall relationships with tenants; and its use of promotion, innovation, and marketing to enhance or maintain the center's viability.
- **Competition** – the supply and demand dynamics in the market and the potential for revenue erosion due to future competition. The presence of competitive and complementary retail formats in the surrounding area and the availability of land for future development.
- **Occupancy costs** – the impact of occupancy costs (the sum of base rent, percentage rent, and expense reimbursement divided by sales) on anchors and in-line tenants.
- **Co-tenancy or go-dark clauses** – any go-dark clauses (allow for termination if an anchor tenant closes) and other special co-tenancy agreements that may influence occupancy over the term of the loan.
- **Shadow anchors** – the role shadow anchors (the anchor tenant owns its store) play in drawing tenants to a center. Co-tenancy clauses of the in-line tenants with the shadow anchor, especially in those cases where the shadow anchor accounts for

25% to 30% of center's sales, are analyzed to determine the impact on cash flow viability.

- **Tenant bankruptcy** – bankruptcies among retailers is a concern in assessing retail properties since this development significantly heightens the vacancy potential at a center. In bankruptcy situations, the analysis will focus on the tenant's viability at the specific center and whether the tenant has affirmed its lease in the bankruptcy court. If a decision has not been made, then the tenant's sales at the center are compared with the total chain sales, since it is likely that a retailer will close the marginal stores as part of a reorganization plan. In addition, the tenant's current rental rate is evaluated against the market rents for similar space.

Industrial Properties

- **Location** – access to interstate highways and major road networks.
- **Occupancy** – the building's historical occupancy is assessed within the context of its current competitive environment, its rent structure, tenant profile, and current and future market trends.
- **Tenant roster (rent roll)** – evaluation of the composition of national, regional and local tenants at the building.
- **In place lease rates versus market lease rates** – below market rents incentivize tenants to remain at the property and provide a buffer for the property in the event rents in the market drop.
- **Management** – management's strength and strategy in tenant selection, lease negotiations, and relationships with tenants.
- **Competition** – supply and demand dynamics in the market and the potential for income erosion due to future competition.
- **Lease structure** – the impact on cash flow of lease outs and other abatement clauses, as well as the percentage of space that is leased by the owner or its affiliates.
- **Parking** – parking adequacy to meet zoning requirements and tenants' needs, especially for flex space facilities that have a large component of office users.
- **Loading docks and turning radii** – the adequacy of loading docks, number and depth of bays, and the adequacy of turning radii for truck loading and unloading are evaluated in relation to the likelihood of functional obsolescence at the structure.
- **Structure and design** – the structure and design, electrical supply and floor load capacity should be adequate and adaptable to meet tenants' requirements.
- **Space/ceiling heights** – design should accommodate high-volume receiving and delivery of bulk goods and fork lift usage, with sufficient truck-high and drive-in loading docks to service single or multi-tenant configurations.

- **Special purpose facilities** – build-to-suit and special-use facilities are analyzed to determine their adaptability to other uses and users in the event of the tenant's default or lease expiration before the loan term.
- **Additional environmental risks** – industrial properties by definition often involve industrial processes that can include the use, production and/or storage of toxic and /or explosive materials. An underwriter evaluates the nature of such processes, the ability of the tenant to manage those processes effectively, and the financial capacity of the tenant and borrower to deal with any unexpected adverse impacts.

Hotel Properties

- **Supply and demand dynamics** – the factors that drive demand for the hotel. The available supply within the sector and the impact of current and future supply are key determinants in assumptions used for adjusting each hotel's occupancy and Average Daily Rate ("ADR").
- **Competitive strength** – the strength of the franchise, the property's historical performance, and the hotel's ability to compete within its market and sector and possibly penetrate other sectors.
- **Economic growth and cycles** – the national, regional, and local economic trends and how they affect the hotel's demand. The local area employment trends compared with the broader economy. The interrelationship of office construction and hotel room availability.
- **Demand generators and market segmentation**– the historical market mix between business and leisure and how it has evolved over time. Changes in typical usage patterns and trends indicated by those changes.
- **Management/franchise agreements** – agreements with third parties or affiliates and the duration of those agreements, including termination rights.
- **Facilities** – the age, configuration, and other property aesthetics. The adequacy of the services and facilities to meet the users' needs, especially for hotels that target special users such as convention and conference hotels.
- **Seasonality** – the seasonal nature of the business. Hotels that suffer from large fluctuations in reservations due to seasonal trends will be expected to fund a reserve to ensure cash flow stability during the off season.
- **Location** – adequate access and visibility to interstate highways, and major road networks. Proximity to office developments are key considerations for the limited service and extended stay sector.
- **Parking** – adequate parking to meet zoning requirements and travelers' needs.

Multifamily Properties

- **Economic growth** – the strength of the area's economy, its dependence on any single industry, and the overall impact on income patterns and job prospects.
- **Demographic trends** – the area's population growth, changes in the average household size, and the composition of the entry-level market.
- **Amenities** – the competitiveness of the property's amenities within the market. If they are not competitive, do the rental rates compensate for their absence?
- **Competition** – the property's ability to withstand both temporary and protracted supply and demand imbalances.
- **Occupancy** – the building's historical occupancy within the context of its current competitive environment, its rent structure, tenant profile, and current and future market trends.
- **Asking rents versus market rents** – below market rents incentivize tenants to remain at the property and provide a buffer for the property in the event rents in the market drop.
- **Management** – management strength, maintenance staff and overall responsiveness to tenants' needs.
- **Location and access** – access to schools, shopping centers, interstate highways, recreation facilities, business parks, and major networks are key convenience factors for residents.
- **Curb appeal** – the appearance of the property and its visual appeal to attract potential tenants.
- **Ingress/Egress** – the ease or complexity of entering and exiting the property can impact interest in the property.
- **Visibility** – signage, maintenance of the grounds and overall curb appeal.
- **Parking** – minimum of two spaces per unit, with higher requirements to meet the ratio of two- and three-bedroom units within the complex.
- **Available land for future development** – the impact of possible new development on the current rent levels and building occupancy.
- **Home affordability** – a comparison of rental rates and prices for first time homebuyers in the area is paramount, as renters typically seek to become homeowners whenever possible.

Health Care Facilities

- **Economic analysis** – the strength of the state's economy and its effect on Medicaid reimbursement rates, reimbursement/payment history and the overall regulatory climate.

- **Reimbursement rates** – the impact of managed care capitation programs, state and federal reimbursement policy, waiver rules, and other regulatory challenges.
- **Management** – the strength, experience, philosophy and operating history of management within the specific elder care sector.
- **Location** – the stability of the facility in its locale, especially in rural markets, where the operator's strength and ability to draw residents from a broader geographic area may be important to the facility's success.
- **Facility layout and physical attraction** – the ability of the layout to foster socialization and easy access to service providers. Are there specialized facilities that support aging in place? Does the facility offer a continuum of care with a variety of specialized services? The overall maintenance of the facilities, grounds, and curb appeal are considered.
- **Competition** – the facility's services and amenities' competitiveness with the area's other operators, and whether the subject can withstand excess capacity at another facility. In addition, are there any Certificate of Need ("CON") moratoriums in the state (especially for nursing homes)? If it is not located in a CON state, do other limitations to new supply exist?
- **Payor Mix** – the breakdown between private pay and government pay to determine the exposure to reimbursement stress.
- **Consolidation** – the impact of smaller facilities being acquired by larger operators.

Self-Storage Properties

- **Location** – the property's accessibility from residential neighborhoods.
- **Competition** – proximity of competing facilities.
- **Security** – the fencing around the perimeter of the property and a gate limiting access to the property.
- **Climate control** – percentage of climate controlled units.
- **Ancillary services** – boxes and packing materials, truck rentals and outdoor storage for boats and recreational vehicles.
- **Management** – availability of 24-hour on-site management
- **Nearby undeveloped land** – self-storage is one of the least expensive commercial property types to develop. Undeveloped land nearby could be a potential site for new competition.