CMBS Model 2.0
Frequently Asked Questions

Market Data

- What are the sources for the market data? (i.e., CoStar, REIS, Real Capital Analytics, others)

  BlackRock sources historical and forward projections of macroeconomic data (Income, Employment, Inflation, etc.) from a widely utilized industry standard economic data provider, and data on CRE-specific factors (Historical Vacancy/Rent/Cap Rates and Historical/Forward Stock) from a widely utilized CRE data provider.

- How are you projecting forward vacancy and market rents? Are you starting with today's data and simulating various paths forward (based on various non-real estate economic factors) or are using actual forward projections (5 year? 10 year?) and then shifting that entire path?

  Vacancy and Rent Projections are derived using a BlackRock-developed econometric model which is based on a framework that establishes a link between market vacancy/rent levels and macroeconomic factors such as Employment, Income, and CRE Stock. Projections are generated for each Market and Property Type pair, using today's levels of vacancy and rent as a starting point. The levels of the macroeconomic factors vary by scenario (e.g., different projections of employment growth across Baseline, Conservative, etc.). The econometric projections of vacancy and rent also contain a random deviance factor to incorporate a simulation framework under which a series of vacancy and rent paths are projected for a given set of macroeconomic projections in each scenario.

- How are you projecting cap rates?

  Forward projections of cap rates and discount rates are utilized in a ten year discounted cash flow framework to calculate property value. These cap and discount rates are market, property type, and scenario specific. In order to ensure BlackRock's value projections are consistent with the NAIC's scenario-specific National CRE Price Index projections, BlackRock has created a process to calculate the forward trajectory of cap rates and discount rates, based on BlackRock projections of vacancy, rent, and the NAIC Price Index projections.

- For submarkets where no specific data is available but more generic data is available for a nearby city, are you using the closest large market available? For submarkets where no specific data is available at all, what data are you using?

  Markets are modeled at the CBSA level. If data is not available for a particular market or (or a specific property type within a modeled market) a regional (e.g. East, South) or national level model is used.

- Is there any adjustment for rental rates being above market because the asset justifies it? Or below market because it is a weaker asset? For example, does that best asset and the worst asset in a market (with identical roll schedules) get treated the same in terms of forward market rents and vacancies? If not, what factors determine their treatment?

  Starting property level rents are based on in-place rent. Rent in future periods is determined by applying the period over period growth implied by the applicable Market/Property type real rent projections and inflation. Properties that are flagged for review in BlackRock's monthly process

may have in-place rents adjusted to account for differences between in place and market rents, when required.

CMBS Collateral Data

- For the base assumptions, are you using only annual financial data provided by the servicer or are you also using any quarterly updates for actual revenue/expenses? If quarterly, are you annualizing or creating your own trailing 12 month revenue/expenses?

  To the extent available and sufficient, BlackRock will use any newly reported financial data by utilizing a blended cash flow methodology where the most recent reported financials are blended with previous year annual financials to derive an updated full year figure. If not available or insufficient, the most recently reported annual cash flow is used.

- Are you using only the top 5 tenants (provided in the data tape) or are you manually inputting rent rolls into your system? If the latter, is there a size cut off to do this extra analysis? What happens if a rent roll is not provided and/or it is not useable?

  When onboarding newly issued deals, BlackRock leverages the full information available in the original deal offering documents. This generally includes information on the top 10-15 tenants underlying the largest 10 loans in the deal, and information on the top 5 tenants for the remainder of the loans. Following deal issuance, monthly reporting includes detailed information only for the top 5 tenants. The remainder of the tenants are aggregated into five cohorts based on the annual rollover schedule, which shows the percent of the building tenants with leases expiring each year for the next five years.

- Are probabilities for renewal only market specific or is there any asset specific overlay?

  A dedicated team of CRE professionals supports the BlackRock CMBS model through quality assurance and loan underwriting / review activities. In addition to ensuring servicer and trustee reported data is accurately utilized, the team also conducts loan reviews and determines if manual adjustments to the model/data are necessary to account for property / tenant level idiosyncrasies that are not always captured by servicer reported data alone. While the probability of renewal depends upon projected market vacancy, as part of the monthly review process, BlackRock's CRE professionals may adjust renewal probabilities at the property level if necessary.

- In Component 2 of the modeling, it sounds like you are using more granular data (digging deeper than just revenue and expenses). How often are you doing this (annually, quarterly)? Are you doing this for all size properties? You mention such items such as expense reimbursements and taxes and insurance; are you adjusting these in any way or using borrower provided data in conjunction with your new revenue assumptions?

  Updated servicer reported property financial data is incorporated every month through an automated process. Depending on the level of granularity available, BlackRock may use the servicer numbers directly, or will otherwise allocate aggregate revenues and expenses to calculate each line item of financials based on market and property type specific average ratios. Growth rates for individual revenue items (excluding rent) and variable expense line items are a function of property occupancy and inflation, while growth in fixed expenses is a function of inflation. As such, while these items are broken out more granularly, the only impact from a modeling perspective is the distinction between fixed and variable expenses.

Specific Single Tenant Questions

- Many single tenant (ST) properties in CMBS have leases that are borderline co-terminus. How are these treated in the model, in that if you have a 10 year loan with ST rolling 6 months before maturity versus one rolling 3 months after maturity, would these be treated differently?

  Given that a ten year discounted cash flow framework is used for property valuation, and defaults use a combination of DSCR/LTV triggers, small differences in tenant expiry will not have a meaningful difference in the modeled loan outcome outside of small differences in default timing.

- To the extent you have a ST asset with a solid IG credit that rolls during the term, would its renewal probability and rental assumptions be the same as for the same scenario but a weaker credit?

  The renewal probability does not differ based on the credit quality of tenants.

- Are roll probabilities for any individual tenant influenced by the concentration of tenants on the rent roll or are they solely based on the market? By this, I mean would the tenant in a single tenant asset have the same probability of roll and new market-based rent as a tenant rolling in a multi-tenant asset?

  Renewal probabilities are solely a function of the vacancy level for the given market/property type. That said, the concentrated lease roll may add to risk in the form of higher LGDs when the tenant vacates in single tenant properties relative to multi-tenant properties.