

Automated Valuation Model

Methodology & Accuracy Testing



Green Street

Green Street Company Overview

Green Street is the preeminent provider of actionable commercial real estate research, news, data, analytics, and advisory services in the United States and Europe. For more than 35 years, Green Street has delivered unparalleled intelligence and trusted data on the public and private real estate markets, helping investors, banks, lenders, and other industry participants optimize investment and strategic decisions. The firm delivers exclusive market information, conclusion-driven insights, and predictive analytics through a SaaS platform. The company is headquartered in Newport Beach with offices in Summit, New York, and London.

Automated Valuation Models for Commercial Properties

Property valuations are central to commercial real estate investors' workflows, as they drive investment decisions, determine taxes and insurance, and impact financing options. Traditionally, appraisers have performed valuations, which can take days or even weeks to complete for a single property. Automated valuation models (AVM) have aimed to supplement and sometimes replace the traditional, labor-intensive appraisal process by using advanced models to generate "instant" property valuations. While AVMs are not new to commercial real estate, they have not achieved the widespread usage they enjoy in the single-family residential space. This is because current commercial AVMs lack accuracy and transparency. Despite the advanced algorithms many of these models employ, they are only as good as the data that drives them. Further, because many models tout artificial intelligence and machine learning as the backbones of their approaches, they can often be black boxes. Commercial real estate investors have been reluctant to adopt models they don't fully understand, and that produce valuation outputs they can't defend.

The Green Street AVM

Green Street's AVM aims to solve for the accuracy and transparency shortcomings of existing solutions. It is built on three well-recognized valuation approaches and powered by our comprehensive, high-quality data sets. The result is a system that provides transparent and accurate valuation estimates for individual properties and portfolios. Unlike traditional AVMs that primarily focus on the final value, the Green Street AVM places equal importance on the individual valuation inputs, the methodologies employed, and the property-specific adjustments used to arrive at an estimated value. While not always intended to replace a formal appraisal, the model can quickly produce a reliable valuation range based on Green Street's real-time data. Importantly and



Green Street's AVM*

1. Value Extrapolation
Using Green Street's proprietary CPPIs

2. NOI Capitalization
Using Green Street's proprietary cap rate estimates

3. SmartComps™
Using Green Street's proprietary transaction comp algorithm

*Patent Pending

consistent with everything Green Street produces, the inputs and outputs of the model are independent and unbiased.

Model Overview

Green Street's AVM incorporates three core valuation methodologies that are widely recognized by commercial real estate investors:

1. **NOI Capitalization:** This method involves applying a property-specific capitalization rate, estimated by Green Street, to the provided NOI stream to determine value.
2. **Value Extrapolation:** This approach adjusts a property's most recent sale price based on Green Street's Commercial Property Price Index® (CPPI) and considers any renovations to refine the valuation.
3. **SmartComps™:** This algorithm selects the most relevant comparable sales (comps) for the subject property from Green Street's comprehensive database of transaction comps.

The results from each method are then weighted based on a confidence scoring system to produce a final valuation estimate and a range of possible values. Notably, the model requires minimal inputs to generate a valuation, but users can provide additional property details to improve accuracy. The model also offers flexibility by allowing users to adjust the weightings of the three valuation methodologies as well as manually selecting comparable properties to customize the valuation outcome.

The following sections of this whitepaper provide more details about the model's operational mechanics and the methodologies used to test its accuracy.

Model Inputs

The Green Street AVM *requires only five inputs* to generate a value estimate:

- **Address** (across the top 384 U.S. Metropolitan Statistical Areas [MSAs]).
- **Property Sector** (Apartment, Industrial, Office, or Strip Center¹)
- **Size** (in units or square feet)
- **Net Operating Income** (entered as Last Twelve Months [LTM] NOI)
- **Occupancy** (entered as LTM average)

The model also allows the user to enter *optional* inputs to improve model accuracy:

- **Average Asking Rent**
- **Building Quality**
- **Weighted Average Lease Term (WALT)**
- **Tenant Credit Quality**
- **Mark-to-Market NOI Adjustment**
- **Last Sale Date**
- **Last Sale Price**
- **Date Renovated**
- **Renovation Cost**

Each property is assigned a unique ID, which can be the property's name. The unique ID defaults to the property's address if a name is not provided. If any data is entered in the incorrect format, or outside certain parameters, the user will be notified to correct the errors.

¹User can select neighborhood / community center or power center and specify with or without a grocer.

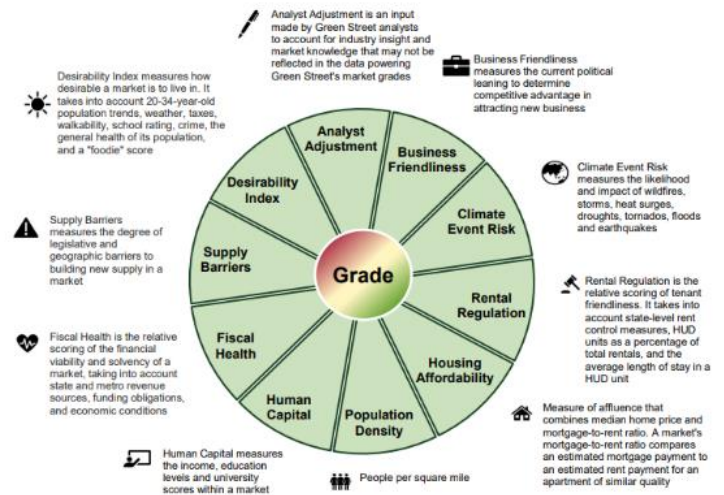
Approach #1: NOI Capitalization

Under the NOI capitalization approach, the LTM NOI the user provides is divided by a Green Street estimated cap rate for that specific property. This approach begins with selecting a cap rate estimate relevant to the property's sector and market. Green Street maintains a comprehensive, real-time database of cap rates for properties of "average quality" across all four major property sectors, covering 384 markets². "Average quality" refers to properties whose asking rents align with the average rents for the market they are located in. For properties within the top 50 markets, the "average quality" cap rate can be further refined based on these factors:

1. Location Adjustment Based on Market Grade:

Green Street assigns letter grades to evaluate each zip code within the top 50 markets, reflecting long-term rent growth potential. Each grade is comprised of ten variables specific to each sector – with a subjective adjustment if necessary – and a higher grade equates to better long-term growth. Each subject property is automatically matched to its corresponding zip code and market grade. If the subject property's assigned grade exceeds the market average, the nominal cap rate will be adjusted lower, and vice versa. You can learn more about Green Street's market grades [here](#).

Exhibit 1: Green Street Market Grade (Apartments)



2. Quality Adjustment Based on Direct User

Input or Asking Rents: The model will assess property quality based on one of two optional fields:

- 1) **Building Quality:** Users explicitly select one of five quality grades: **A+, A/A-, B+/B, B-/C+, and C.**
- 2) **Asking Rents:** Users input the current asking rents for the property. The AVM compares these rents with the average market rents to determine property quality. Higher-than-average asking rents indicate a higher quality asset, corresponding to a lower nominal cap rate and vice versa. When both the Building Quality and Asking Rent fields are provided, the model defaults to the grade specified by the user. If neither of these optional fields is used, the model assigns a cap rate based on an "average quality" institutional asset, corresponding to the "B+/B" quality bucket.

3. **Weighted Average Lease Term (WALT):** The Weighted Average Lease Term feature allows users to select from five groups of average remaining lease term lengths: **1-2 years, 3-5 years, 6-8 years, 8-12 years, and 12+ years.** Properties with longer leases from financially robust tenants typically command lower cap rates and higher valuations due to their stability and reduced risk of potential vacancies.

4. **Tenant Credit Quality:** The Tenant Credit Quality feature allows users to assess tenant creditworthiness across five levels, spanning the investment and non-investment grade spectrum: **Investment Grade – High, Investment Grade – Medium, Investment Grade – Low, Non-Investment Grade – High, and Non-Investment Grade – Low.** Tenants with strong credit ratings are more likely to fulfill their lease obligations, contributing to a stable and predictable income stream and deserving of a lower cap rate. The WALT and credit quality cap rate adjustments are influenced on observations from the net lease market, where the valuation impacts from tenant quality and lease term can be readily observed.

² Cap rates for apartments reflect market rents and exclude rent-regulated buildings with below-market rents.

5. **Mark-to-Market NOI Adjustment:** The Mark-to-Market NOI adjustment addresses potential revenue loss or gain when in-place rent deviates from the market average for similar properties. Users can specify the extent to which their in-place rents are above or below current market rents, allowing the model to adjust the assigned cap rate more appropriately. This adjustment works in concert with WALT, as in-place rents can't be marked-to-market until lease expiration.

In summary, these enhancements utilize custom cap rate metrics in the valuation, capturing idiosyncrasies about the property, market location, lease term, tenant quality, and the delta between in-place and market rents.

Forward NOI Adjustment

As Green Street cap rates are based on forward or next twelve months (NTM) NOI, the LTM NOI provided by the user is converted to an NTM NOI by utilizing a hybrid market/sector NOI forecast. This new NTM NOI is then divided by the derived property-specific cap rate to produce the valuation estimate.

$$\text{Value Estimate} = \frac{\text{LTM NOI} \times (1 + \text{NTM NOI growth})}{\text{Property Specific Cap Rate}}$$

Non-Stabilized Properties

The property's current occupancy is one of five required inputs for the AVM. This occupancy rate is automatically compared to the average occupancy of its submarket to determine if the property is stabilized. If the property operates below a stabilized occupancy level, a lease-up logic will be activated. This logic uses either user-provided or market-level rents and operating margins within the AVM. It is important to note that a below-market occupancy rate may result from either the asset being repositioned or being physically or functionally obsolete compared to similar buildings, which means vacancy should be elevated compared to the market for structural reasons. Therefore, the occupancy is not adjusted all the way back to the market average. Additionally, the "closing percentage," which indicates how closely the occupancy rate will approach the market average, is influenced by the building quality. Higher building quality generally results in a higher closing percentage, assuming all other factors are equal. The "closing percentage" ranges from **75% to 95% for apartments and industrial properties and 55% to 95% for offices and strip centers**, depending on building quality.

For instance, consider an average-quality apartment property currently at 70% occupancy in a market where the average occupancy is 95% - or 25% below market. To adjust for this difference, the final occupancy used for modeling purposes is calculated as follows: $70\% + (25\% \times 85\%) = 91\%$. In other words, the NOI is adjusted upward to reflect a property operating at 91% occupancy.

$$\text{Value Estimate} = \frac{(\text{LTM NOI} + \text{Non Stabilized NOI Gross Up}) \times (1 + \text{NTM NOI growth})}{\text{Property Specific Cap Rate}}$$

If the user disagrees with the stabilization logic and believes their property can achieve or surpass market average occupancy, they can input their estimate of stabilized occupancy and NOI in the LTM fields. However, it's important to note that the output would reflect a stabilized value at lease-up rather than the current market value, considering the associated costs and time required to reach stabilization.

Approach # 2 - Value Extrapolation

The Value Extrapolation approach represents the second key component of the AVM methodology. This method utilizes the Green Street Commercial Property Price Index® (CPPI) to adjust the price of a prior sales transaction, aligning it with the property's current market value. The AVM sifts through Green Street's extensive transaction database to identify the most recent property sale. Alternatively, users can manually input a sale date and price through an optional input field if a previous sale cannot be found. The calculation used for value extrapolation is straightforward:

$$\text{Value Estimate} = \text{Sale Price} \times \frac{CPPI_{\text{Current}}}{CPPI_{\text{Sale Date}}}$$

Green Street maintains CPPIs for different asset quality levels, and the AVM automatically selects the CPPI series that matches the subject property's quality. Building quality is determined based on either comparative asking rents versus the market or direct input from the user. For more information on why Green Street's CPPIs are recognized as the most accurate and up-to-date valuation indices in the market, please click [here](#).

Renovations

Green Street's CPPI represents changes in the value of stabilized assets, which excludes appreciation specific to properties undergoing significant renovations. To address this, the AVM allows users to provide details on the timing and financial scope of any recent renovations. Because renovations are sometimes just deferred maintenance in disguise, and oftentimes experience rapidly decaying return on invested capital, a haircut on renovation amount is applied based on sector and time since the renovation was completed.

$$\text{Value Estimate} = \text{Sale Price} \times \frac{CPPI_{\text{Current}}}{CPPI_{\text{Sale Date}}} + (\text{Renovation Amount} \times \text{Renovation Credit}) \times \frac{CPPI_{\text{Current}}}{CPPI_{\text{Renovation Date}}}$$

Approach # 3 - SmartComps™

The third component of the AVM is based on analyzing transaction comparables. Green Street has curated a comprehensive and accurate database of verified transaction comparables and employs an algorithm called SmartComps™ to identify the most relevant comps for a subject property. SmartComps™ uses a decision tree logic that factors in metrics such as:

- Recency of the transaction
- Pricing bands
- Distance to subject property
- Similarity in property characteristics, specifically the size of the building

The weighting of these four metrics has been finely tuned through an optimization process. Properties are screened based on specific upper and lower bounds, and each eligible property is assigned a numeric score, with the top 10 most relevant comparables selected. Of those 10, only those surpassing a predefined score threshold are considered in the valuation process and are marked with a checkmark for easy identification in the interface. These selected properties are then assigned standardized weights, reflecting the quality of the match. For each of the best comps selected, the price per unit / sq ft is "brought current" based on its last sale date and multiplied by its corresponding unit / sq ft. The final value estimate is calculated as a weighted average of the adjusted prices per unit or square foot for the chosen comparables.

$$\text{Value Estimate} = \sum_{i=1}^N \text{Subject Property units|sq. ft} \times \text{Current Price per unit|sq. ft}_i \times \text{Match Quality Weight}_i,$$

where i is selected comp and N is total number of selected comps

Users also have the option to select their own comparables from the top 10 identified by the model, adjusting the valuation in real time as they add or remove comparables. In this scenario, all chosen properties receive equal weighting:

$$\text{Value Estimate} = \frac{\sum_{i=1}^N \text{Current Price per unit|sq. ft}_i}{\text{Number of Properties Selected}} \times \text{Subject Property units|sq. ft}$$

where i is selected comp and N is total number of selected comps

Users can revert to the model's default selection anytime by clicking the reset icon. This allows experimentation with various comps to understand their impact on the valuation without concern over losing the model's initial recommendations. See Exhibit 2.

Exhibit 2

Model recommended comps which the user can remove if they choose.

Additional comps the user can add.

Alcott		GS Cap Rate	GS Est. Value	Est. Value Range	Report Date
2424 Alcott St, Denver, CO 80211, USA		4.17%	\$97,300,000	\$82.7M - \$112M	3-Jun-2024

Rank	Address	Date	Size	Distance	Submarket	Price	Price / Unit	Buyer	Seller
1	1850 Wewatta Street, Denver, CO, 80202	9-Jan-2024	287 Units	0.8 mi	Downtown	\$125.5M	\$437,282	Griffs Residential	Clarion Partners; Los Angeles...
2	1550 Platte Street, Denver, CO, 80202	12-Jan-2024	339 Units	0.6 mi	Downtown	\$145.5M	\$429,204	Mesrow Financial	Hotman LLC
3	1780 North Marion Street, Denver, CO, 80218	20-Oct-2023	254 Units	2.5 mi	Central	\$111.0M	\$437,008	Jackson Square Partners	Alliance Residential
4	3299 Brighton Boulevard, Denver, CO, 80216	10-Aug-2023	417 Units	2.2 mi	Northeast	\$182.0M	\$436,451	Mill Creek Residential Trust	Carnel Partners
5	2710 Bruchez Parkway, Westminster, CO, 80234	20-Jun-2022	232 Units	9.4 mi	Westminster	\$94.0M	\$405,172	MKG Real Estate	Sagegate Properties
6	8400 East Yale Avenue, Denver, CO, 80231	10-Nov-2023	168 Units	8.9 mi	Far Southeast	\$58.1M	\$345,833	Aveneth Capital Management	MKG Real Estate
7	8911 Niagara Street, Denver, CO, 80237	28-Feb-2023	310 Units	10.4 mi	Far Southeast	\$123.5M	\$398,387	Sepolis Equities	Crescent Real Estate
8	11001 West 15th Place, Lakewood, CO, 80216	23-Feb-2023	230 Units	5.6 mi	Lakewood	\$77.0M	\$334,783	Bloom Group	Aveneth Partners
9	8400 South Syracuse Street, Denver, CO, 80237	27-Oct-2023	316 Units	10.3 mi	Far Southeast	\$95.3M	\$301,434	MKG Properties Group	LaSalle Investment Management
10	7901 East Bellevue Avenue, Denver, CO, 80237	8-Oct-2023	298 Units	10.9 mi	Far Southeast	\$88.0M	\$344,981	Jackson Square Properties	Blackstone Group Inc.
Average			324 Units	1.5 mi		\$141.0M	\$434,986		

Dynamic Weightings – How the Three Approaches Are Combined

Green Street's AVM uses three methods to estimate property values: NOI Capitalization, Value Extrapolation, and SmartComps™. The AVM calculates a final valuation estimate by combining the results of each approach through dynamic weighting. The weight given to each method is determined by its confidence score. Therefore, the emphasis on each valuation approach can vary significantly from one property to another, depending on the property's unique characteristics and data availability.

Confidence Scoring Overview

- **NOI Capitalization:** Properties closer to a stabilized occupancy level receive a higher confidence score. The score is also enhanced if the user inputs either an asking rent or a quality grade to provide a more accurate estimate of the property's quality.
- **Value Extrapolation:** Recent sales greatly increase the confidence score. In cases where a property recently sold, the AVM may assign a weight of up to 99% to this approach, as the recent transaction offers a clear insight into the property's current value³. Furthermore, providing information about renovations, including the amount spent and the completion date, further increases the confidence score.
- **SmartComps™:** Confidence scores are higher for properties with recent and robust comparable transaction activity. This reflects greater reliability in the valuation derived from transactions that closely resemble the subject property in terms of timing and characteristics.

The Value Range

In addition to providing an estimated value, the AVM also calculates a value range. This range is established by applying a predefined percentage (±15%) to the estimated value or by using the highest and lowest values generated by the three valuation methods. This approach ensures that users have a comprehensive understanding of potential valuation outcomes and accommodates the uncertainties in real estate valuation.

³ A recent sale may not reflect true market value if the sale represents the exercise of a pre-negotiated purchase option, or the property price was negotiated many months before closing in a rapidly moving market. In these instances, the output of the value extrapolation prong should be discounted.

AVM

Green Street

Alcott

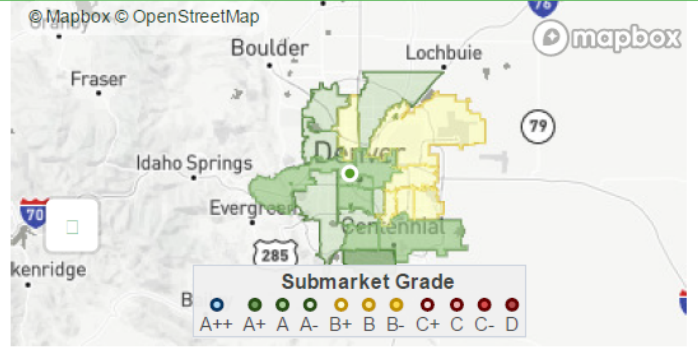
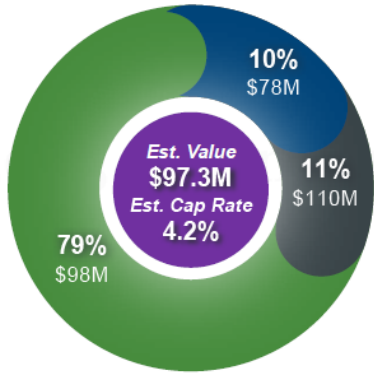
2424 Alcott St, Denver, CO 80211, USA

6/3/2024

Units : 248	Est. Value : \$97,259,153	Est. Value Range : \$82.7M - \$112M	Est. Cap Rate : 4.17%
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PROPERTY OVERVIEW

● Value Extrapolation ● SmartComps® ● NOI Capitalization

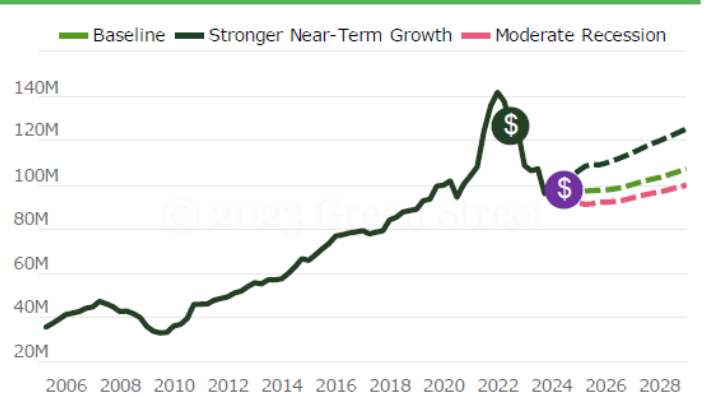
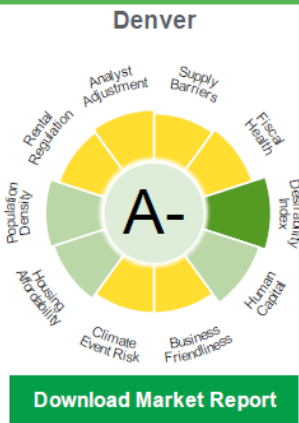


Sector	Apartment	Last sale date	13-Jul-2022
Units / Square Feet	248	Last sale price	\$126,000,000
LTM NOI	\$4,024,742	Weighted Lease Term	-
LTM Occupancy	92.7%	NOI Mark-to-Market	-
Average Asking Rent	\$2,254	Tenant Quality	-

AUTOMATED VALUATION MODEL

VALUE EXTRAPOLATION - 79% WEIGHTING	NOI CAPITALIZATION - 10% WEIGHTING	SMARTCOMPS® - 11% WEIGHTING
Last Sale Date: 13-Jul-2022	LTM NOI: \$4,024,742	Number Of Comps: 4
Last Sale Price: \$126,000,000	Next-12-Month NOI Growth: 0.7%	Comp Quality: High
Last Sale Price Per Unit: \$508,065	Next-12-Month NOI: \$4,053,370	Avg. Price: \$141M
Renovation Date: -	Denver Cap Rate: 5.3%	Range Of Prices: \$111M - \$182M
Renovation Cost: -	WALT and Tenant Adjustment (bps): -	Avg. Price Per Unit: \$435k
Denver CPPI® 13-Jul-2022: 264	NOI Mark-to-Market Adjustment (bps): -	Range Of Price Per Unit: \$429k - \$437k
Denver CPPI® Present: 205	Location Adjustment (bps): -17	Average Distance of Comps: 1.5 mi
Change: -22%	Quality Adjustment (bps): 10	Avg. Age Of Comp (Months): 7
Change (Quality Adjusted): -22%	2424 Alcott St,... Cap Rate: 5.2%	CPPI® Growth Since SmartComps®: 0.9%
Estimated Value: \$98.1M	Estimated Value: \$77.6M	Estimated Value: \$109M
Estimated Value Per Unit: \$395,680	Estimated Value Per Unit: \$312,982	Estimated Value Per Unit: \$438,989

MARKET GRADE	SUBMARKET GRADE	FORECAST SCENARIOS CPPI®
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Sources: Green Street. Note: The AVM output does not constitute a formal appraisal. Tertiary markets outside the top 50 MSAs don't include market grade information. See expanded disclosure on the back page of this report and at <https://www.greenstreet.com/disclosure>.

As shown in Exhibit 3, the AVM output is simple and transparent and displays the:

- Final value estimate
- Value Range
- Value estimates from the three individual approaches
- Weightings applied to each approach
- Build-up of value within each approach
- Property cap rate applied with location, quality, lease, tenant, and MTM adjustments shown
- Market grade applied
- Listing of comparable properties used
- Market and submarket grades where property is located
- Forecasts of value under different economic scenarios

If the user disagrees with the algorithmically determined weights, they can manually adjust the weights for each valuation component. As is the case with the selection of property comparables, the reset button allows users to experiment with different weightings to see the impact on valuation without worrying about losing the model's initial weighting recommendations.

As an added feature, the output report also takes the final value estimate and provides both a property-specific historical price index, and 5-year forecasts for values under different economic scenarios. These forecasts are driven by Green Street's Forecast product, which you can learn more about [here](#).

AVM Library Page & Output Metrics

The updated AVM interface features a comprehensive library of all single- and multi-property valuations conducted. The dashboard-style interface displays key output metrics, including the zip code grade where the property is located, the estimated cap rate, the estimated value, and the year-over-year price change based on Green Street's Commercial Property Price Index® (CPPI), as shown in Exhibit 4.

Exhibit 4

My Valuations

Analysis Name	Type	Download Reports	Valuation Date	# Props	Units	Sq. Feet	Zip Code Grade	Est. Cap Rate	Total Value	Value / Unit	Value / Sq. Ft.	CPPI Change YOY	Actions
SAMPLE Strip Center Raleigh-Durham	Property		4-Jun-2024	1	-	202,235		7.9%	\$40.3M	-	\$199	-	
SAMPLE Office San Jose	Property		4-Jun-2024	1	-	77,000		6.7%	\$86.7M	-	\$1126	-	
SAMPLE Industrial Philadelphia	Property		4-Jun-2024	1	-	150,000		4.6%	\$23.5M	-	\$156	-	

AVM Accuracy Testing

To ensure the model's accuracy, comprehensive testing using multiple valuation methods was conducted:

- Sales Transaction Comparison:** This method involved evaluating 1,700 properties by comparing the AVM estimations made prior to the sales transaction with the actual prices at which the sales occurred.
- Impact of Building Quality and Rent on Office Properties:** This analysis demonstrates the value of integrating additional data points, such as building quality and rent, into the AVM.
- Impact of Full Inputs on Industrial and Strip Center Properties:** This approach examines a subset of properties where optional inputs, such as Weighted Average Lease Term, Tenant Credit Quality, and NOI mark-to-market, were available.
- Apartment REIT Cap Rates:** This approach compares the cap rates implied by the AVM with those determined by our analysts in Green Street's NAVs, using a sample of approximately 600 REIT-owned apartment assets.

Assessing Model Performance

The model's accuracy in estimating property values was determined using three key error metrics:

- Median Absolute Percent Error (MdAPE):**
 - MdAPE is the median value of the absolute percentage errors between the model's value estimates and the actual values. A MdAPE of 10% indicates that 50% of the property valuations are within 10% of their actual sale prices, either above or below.
- Mean Absolute Percent Error (MAPE)**
 - This metric computes the average of the absolute percentage errors in the AVM value estimates. A MAPE of 10% suggests that, on average, the model's estimations deviate by 10% from the actual transaction prices.
- Median Percent Error (MdPE)**
 - MdPE measures the median of the percentage errors, providing insight into whether the AVM has a tendency to overestimate or underestimate property values systematically. A MdPE of 0% indicates no such bias, suggesting an evenly balanced accuracy across the portfolio.

By employing these three metrics, we can achieve a comprehensive assessment of the AVM's accuracy. This analysis evaluates the distribution and average magnitude of errors and identifies any systematic biases in the valuation estimates.

Baseline Accuracy - Sales Transaction Price vs. AVM Value Estimate

To evaluate the AVM's accuracy, each property's value was estimated just before their sale transactions. These AVM-generated valuations were then compared with the actual sales prices, and the discrepancy between them was quantified using error metrics detailed in Exhibit 5. This method provides a systematic evaluation of the model's predictive accuracy. According to Exhibit 5, the AVM exhibits a median absolute percentage error (MdAPE) of 12.2% and a mean absolute percentage error (MAPE) of 15.8% across all transactions. The median percentage error (MdPE) is around 0%, indicating a balanced model without significant tendencies toward overestimating or underestimating property values.

Exhibit 5

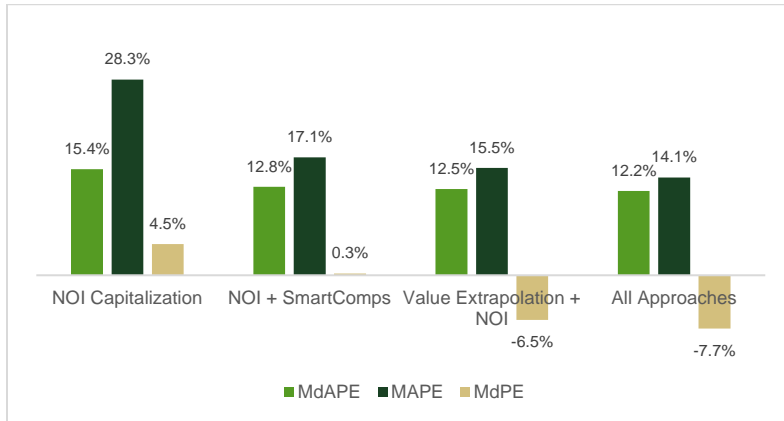
Sector Level Accuracy	Property Count	MdAPE	MAPE	MdPE
Overall	1726	12.2%	15.8%	0.0%
Apartment	644	10.1%	11.0%	-1.6%
Industrial	414	17.2%	21.9%	10.1%
Office	265	14.5%	18.0%	-6.5%
Strip Center	403	12.4%	15.9%	-0.7%

Multiple Valuation Approaches Accuracy

Incorporating additional inputs and utilizing multiple valuation approaches, particularly in markets with significant sales transaction activity, typically enhances the accuracy of valuation estimates. This improvement is evident from the metrics across various methods, as shown in Exhibit 6.

It is important to note that only required input fields were used for the purposes of this accuracy assessment. Typically, AVM users might fill out additional optional fields, improving the model's accuracy. Therefore, the results presented should be considered to represent the model's **baseline or minimum accuracy**.

Exhibit 6

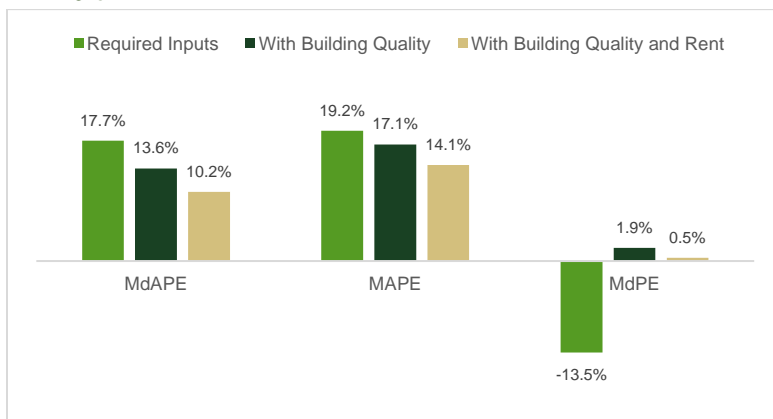


Impact of Building Quality and Rent Input on Class A and C Office Properties

The introduction of building quality as a feature in the AVM allows users to select from a predefined set of categories, which include A+, A/A-, B+/B, B-/C+, and C. This enhancement allows the AVM to assess property values across different quality tiers accurately.

Exhibit 7 highlights the effect of incorporating the building quality input and rent on the valuation accuracy for class A and C office buildings. Approximately 40% decrease in MdAPE was observed, which were previously outliers. This analysis across 114 properties for each input scenario underscores the value of integrating additional data points like building quality and rent into the AVM.

Exhibit 7

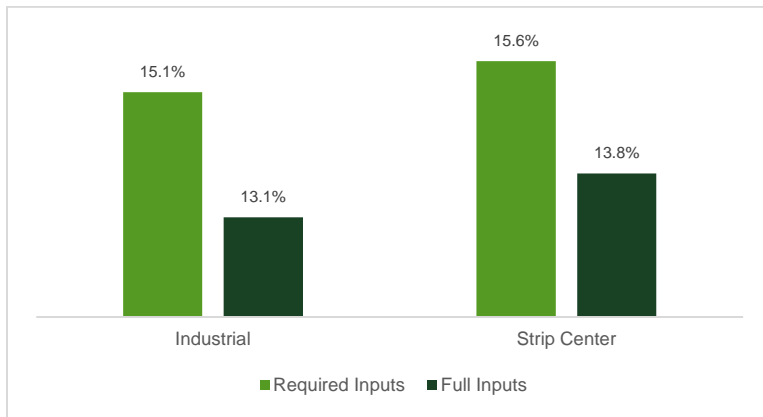


Impact of Full Inputs on Industrial and Strip Center Properties

This analysis evaluates the impact of including all available data inputs for the property, such as Weighted Average Lease Term, Tenant Credit Quality, and NOI mark-to-market, on valuation accuracy. These factors

are critical as they can significantly influence property valuations. By examining subsets of properties where full optional inputs were available, as shown in Exhibit 8, we observed a notable improvement in median accuracy.

Exhibit 8

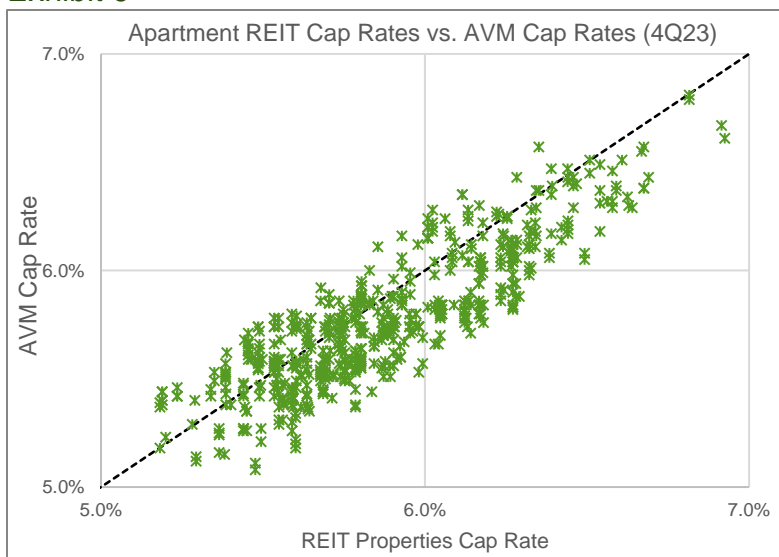


Green Street Apartment REIT NAV Cap Rates vs. AVM Suggested Cap Rates

As another check to the model, a comparison was made between the apartment property cap rates used for REIT-owned assets in our NAV models, to the cap rates that would be generated by the AVM for those assets. The comparison was made to the property cap rate as opposed to the property value, because most REITs don't disclose property-level NOI.

Exhibit 9 shows the scatterplot of cap rates on apartment REIT properties assigned by Green Street's analysts on the X-axis and AVM suggested cap rates on the Y-axis. Each dot in the chart represents an individual property. While the AVM estimated cap rate is not as accurate as that of a Green Street analyst who has the benefit of reviewing tenant lists, credit quality, lease terms, and who – in most cases – has physically toured the assets, the AVM estimated cap rate is still quite accurate considering it can be generated instantly with only a few required inputs.

Exhibit 9



Andrew McCulloch, CFA
Daniel Wijaya
Wilkie Ma