

Property Insights

Atlas: Relative Valuation in Real Estate Markets

March 8, 2018

RMZ: 1,044 | DJIA: 24,895 | 10-Year T-Note: 2.86%



Executive Summary

Commercial real estate investing, in its most basic form, is the search for markets and properties that offer the best combination of current yield and growth. The challenge is that only one of these components is truly known – the current yield – and growth is, at best, an educated guess. Better access to information has provided investors the opportunity to improve the quality of their growth forecasts, but many financial models still suffer from a garbage in, garbage out problem. While growth is often used as a “plug” to make a deal pencil, even those investors attempting to develop realistic assumptions face a seemingly infinite amount of market data on supply and demand onto which to base their forecasts. To help investors with this daunting challenge, Green Street has developed Atlas, a platform that funnels the flood of data into an analytical framework that can help systematically evaluate growth prospects across sectors and geographies.



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The Evolution of Commercial Real Estate Analytics: Commercial real estate has long been a data driven business. Before the explosion of smartphones, cloud computing, and machine learning, however, access to data – especially high-quality data – was extremely hard to come by. When Green Street was first founded in the mid ‘80s, those with the best rolodex and Lotus 123 skills commanded the informational advantage. The world has changed a lot since then. Industry contacts and on-the-ground knowledge are still extremely important, but real estate investors now have access to a steady stream of localized data on the economy, demographics, property-market fundamentals, and transaction activity. What was once like sipping a cup of tea, is now like drinking from a fire hose. The problem today is no longer access to data, it’s gathering the vast amount of data that exists, cleansing it, standardizing it, filtering out all the noise, and ultimately, translating it all into usable intelligence. It was with this ultimate goal that Green Street developed its Real Estate Analytics research offering for property investors, and what has led to our newest product: Atlas – an interactive mapping and analytics platform.

Green Street’s IRR-based sector allocation framework has always relied on thoughtful inputs. While no model is fool-proof, our framework has proven valuable in identifying mispricing among property sectors. As an example, those investors that jumped on our “overweight” calls on self-storage and manufactured home parks over the past decade have been handsomely rewarded. Given the successes at “sector picking,” we have long aspired to extend our valuation framework down to the market level to help our clients make bets geographically. Until the development of Atlas, we never felt comfortable enough with the inputs – specifically long-term NOI growth forecasts – to make statements such as “New York office is mispriced relative to West LA office.” We do now.

While it may seem presumptuous to second-guess a market as active and liquid as the private real estate market, the maturation of our Real Estate Analytics product line and data infrastructure now make it possible to systematically assess growth prospects and private market real estate valuations across MSAs. To be clear, this is not just about assessing where valuations currently are, it is about assessing where they should be. We began employing these market-level insights behind the scenes last summer in our REIT Implied IRRs (as a supplement to our NAV-based valuation model), and are now rolling out those insights and data in our Atlas interface.

Getting Granular: Company-level IRRs, which reflect the long-term return prospects associated with each REIT's portfolio, help to spot instances where private-market pricing and, therefore, NAV may be amiss. Each REIT's long-term growth is built-up using market-level NOI growth forecasts, adjusted for zip code-level grading provided by Atlas, and in select cases receive a subjective adjustment from the analyst where warranted. A similar approach could easily be employed by private market participants when underwriting property portfolios.

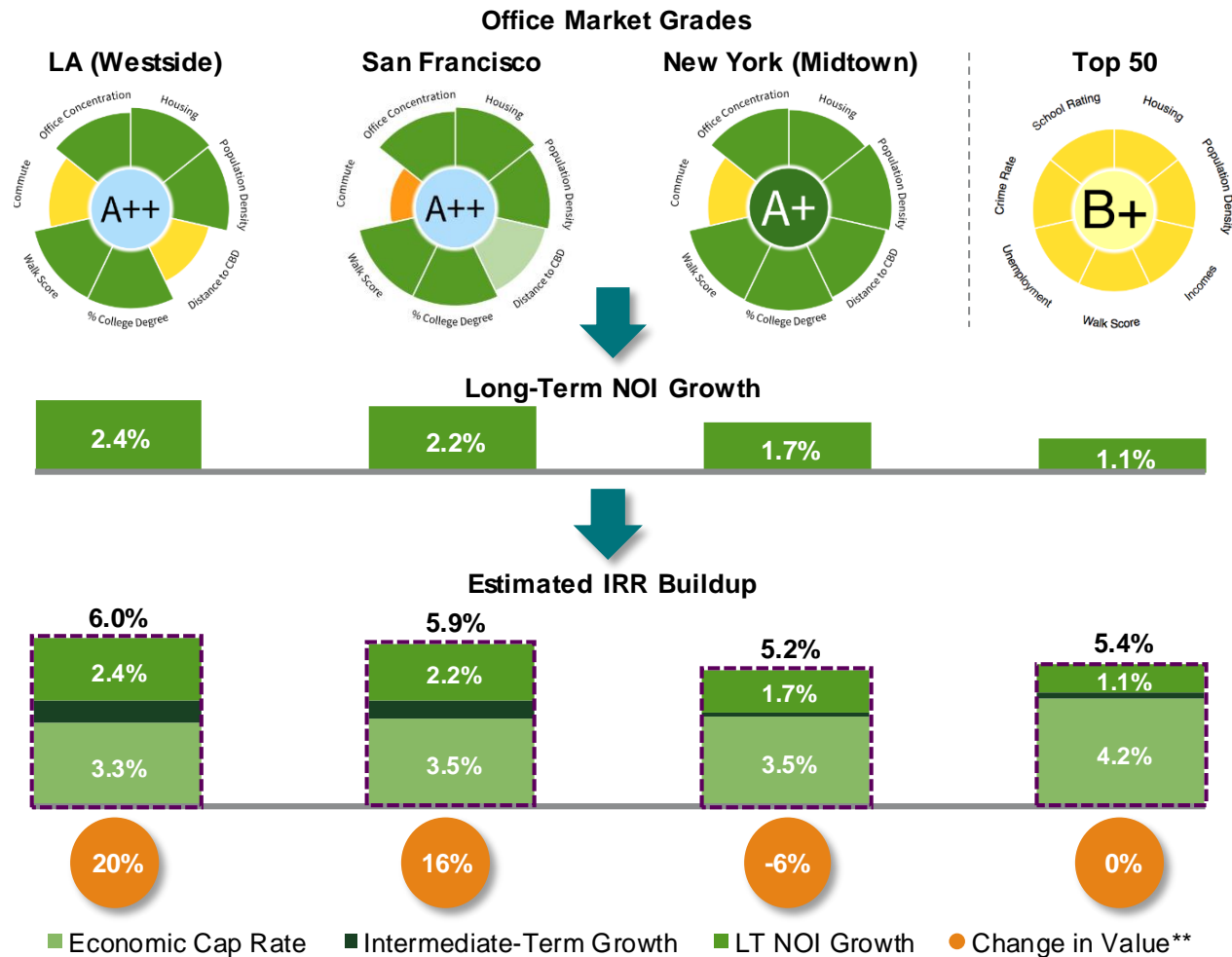
Long Term NOI Growth by Grade											Est. LT NOI Growth*	Avg. Grade	
Grade	A++	A+	A	A-	B+	B	B-	C+	C	C-			
LT Growth	3.1%	2.7%	2.2%	1.8%	1.3%	0.9%	0.5%	0.3%	0.0%	-0.3%			
% of Asset Value by Zip Code Grade													
EQR	41%	26%	18%	11%	2%	2%						2.6%	A+
ESS	25%	22%	25%	21%	5%	2%						2.5%	A
AVB	30%	21%	22%	20%	6%	1%	1%					2.4%	A
AIV	24%	17%	11%	27%	15%	4%	2%					2.1%	A
UDR	26%	16%	19%	15%	11%	7%	4%	1%			1%	2.1%	A
CPT	8%	11%	17%	24%	21%	11%	6%	1%	1%			1.7%	A-
MAA	5%	11%	10%	18%	24%	16%	10%	6%	1%			1.5%	B+

*All REIT assets are assigned a zip code grade and long-term (LT) growth rate. Values are rolled up, and weighted by asset value.

The objective of any commercial real estate investor in the selection of property markets is to find the best risk-adjusted returns. IRR-based valuation models have always been among the most analytically sound techniques, but they are only as good as their inputs. Historically, the quality of the inputs available in the real estate marketplace has been suspect, and underwriting has placed an outsized emphasis on historical performance and “rules of thumb.” As any avid reader of Green Street research knows, we believe the world is ripe with disruptors that will make the future very different from the past in certain corners of the real estate world. By way of example, the “high-barrier” or “supply-constrained” monikers that have long preceded any reference to New York residential, hotel, and office markets have become wholly inappropriate, and anyone expecting this market to deliver NOI growth as impressive as was the case in prior cycles is going to be disappointed. Additionally, many of the industry’s “rules of thumb” around items such as capital expenditures are...well...just wrong. This creates mispricing among sectors and markets. With compelling evidence that inefficiencies are on display in private-market valuations, those investors armed with the best data and analytical framework can reap outsized returns.

The Atlas platform takes several decades of Green Street’s proprietary data and insights on public and private real estate markets, and integrates it with macroeconomic and demographic data, as well as information on operating fundamentals licensed from numerous, best-in-class third-party data providers. While Atlas is our most sophisticated product offering to date from a technology standpoint, and a quantum leap forward in our analytical platform, the forecasts

Calculating IRRs to Spot Relative Mispricing: The Atlas grading system, which grades roughly 6,000 zip codes on the metrics believed to be the dominant drivers of rent growth, allows a systematic way to assess relative growth across markets. These growth forecasts can be paired with Green Street's economic cap rates (i.e., after cap-ex) to gauge expected returns. At today's pricing for example, New York office looks 20% overpriced relative to major West Coast markets.



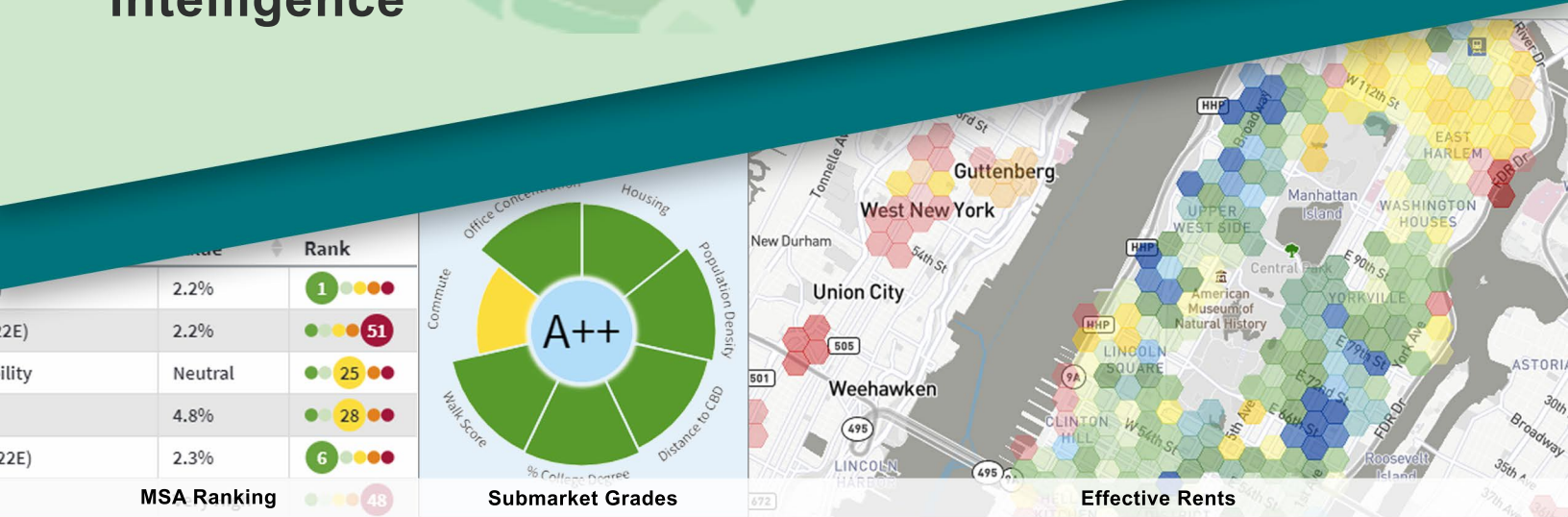
**Change in value based on the cap rate change required to set expected return equal to the Top 50 Market average.

and conclusions still contain a healthy dose of analyst subjectivity. Atlas, like all Green Street's products, is equal parts art and science, as intuition and experience often trump even the most advanced financial models. Green Street will be developing new modules and functionality for the Atlas interface in the coming years, but the launch of Atlas Version 1.0 should prove to be a powerful tool for investors in comparing investments across geographies and property sectors. Happy hunting. [Explore Atlas](#)

Andrew McCulloch
Joi Mar
Austin Maleki

Green Street ATLAS

Interactive Mapping,
Analytics, and
Property
Intelligence



Atlas is an interactive mapping and analytics solution for commercial real estate professionals. The platform seamlessly integrates Green Street's proprietary data on fundamentals and valuation with a myriad of macroeconomic, demographic, and property-specific intelligence to help investors easily compare investments across geographies and property sectors.

Intuitive Interface
Covering the Top 50
Markets, 700
Submarkets, and
6,000 Zip Codes

Market Overviews
Providing Grades,
Cap Rates, Rent and
Occupancy Levels,
Expected Returns,
and More

Sales Transaction
Database for Over
200,000 Transactions
Going Back 15+
Years

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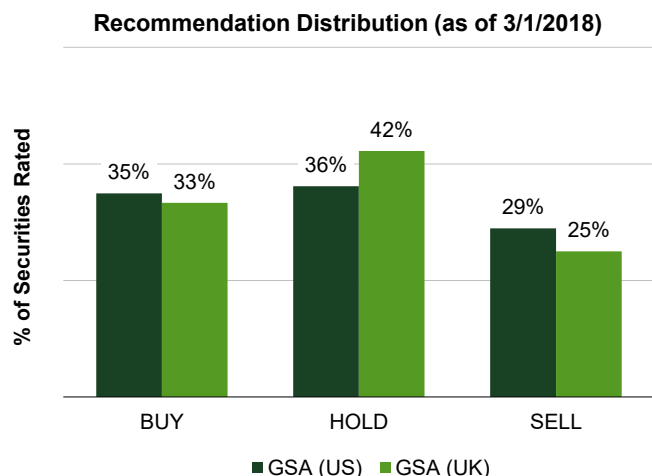
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Total Return of Green Street's Recommendations^{1,2}

Year ³	Buy	Hold	Sell	Universe
2018 YTD	-10.8%	-11.0%	-11.6%	-11.1%
2017	6.4%	0.2%	2.1%	2.6%
2016	14.9%	14.7%	13.1%	14.4%
2015	8.3%	0.9%	-1.7%	2.4%
2014	41.6%	31.5%	27.3%	33.3%
2013	4.1%	0.6%	1.7%	2.2%
2012	24.5%	24.7%	18.9%	23.0%
2011	18.9%	7.6%	-4.7%	7.6%
2010	43.3%	32.8%	26.6%	33.8%
2009	59.0%	47.7%	6.0%	37.9%
2008	-28.1%	-30.9%	-52.6%	-37.3%
2007	-6.9%	-22.4%	-27.8%	-19.7%
2006	45.8%	29.6%	19.5%	31.6%
2005	26.3%	18.5%	-1.8%	15.9%
2004	42.8%	28.7%	16.4%	29.4%
2003	43.3%	37.4%	21.8%	34.8%
2002	17.3%	2.8%	2.6%	5.4%
2001	34.9%	19.1%	13.0%	21.1%
2000	53.4%	28.9%	5.9%	29.6%
1999	12.3%	-9.0%	-20.5%	-6.9%
1998	-1.6%	-15.1%	-15.5%	-12.1%
1997	36.7%	14.8%	7.2%	18.3%
1996	47.6%	30.7%	18.9%	32.1%
1995	22.9%	13.9%	0.5%	13.5%
1994	20.8%	-0.8%	-8.7%	3.1%
1993	27.3%	4.7%	8.1%	12.1%
Cumulative Total Return	15060.8%	1032.0%	17.4%	1223.7%
Annualized	22.2%	10.2%	0.6%	10.8%

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Green Street will furnish upon request available investment information regarding the recommendation



North American Team

Research		
Strategic Research	Mike Kirby, Director of Research Dave Bragg, Managing Director Peter Rothemund, CFA, Senior Analyst Zane Carmean, Associate	mkirby@greenst.com dbragg@greenst.com prothemund@greenst.com zcarmean@greenst.com
Company and Sector Research	Cedrik Lachance, Director of U.S. REIT Research	clachance@greenst.com
Health Care/Net Lease	Michael Knott, CFA, Managing Director Andrew Suh, Senior Associate	mknott@greenst.com asuh@greenst.com
Industrial/Towers	Eric Frankel, CFA, Senior Analyst	efrankel@greenst.com
Lodging/Data Centers	Lukas Hartwich, CFA, Senior Analyst David Guarino, Senior Associate	lhartwich@greenst.com dguarino@greenst.com
Manuf. Homes/Self-Storage/Student Housing	Ryan Burke, Senior Analyst Ryan Lumb, Senior Associate	rburke@greenst.com rlumb@greenst.com
Office	Jed Reagan, Senior Analyst Chris Belosic, Senior Associate Daniel Ismail, CFA, Senior Associate	jreagan@greenst.com cbelosic@greenst.com dismail@greenst.com
Residential	Conor Wagner, CFA, Analyst John Pawlowski, CFA, Analyst	cwagner@greenst.com jpawlowski@greenst.com
Retail	Daniel Busch, Managing Director Vince Tibone, CFA, Analyst Spenser Allaway, Senior Associate	dbusch@greenst.com vtibone@greenst.com sallaway@greenst.com
Research Generalists	Paulina Rojas Schmidt, Senior Associate Ryan Miller, Senior Associate Chris Darling, Senior Associate Chris Harraka, Associate	projasschmidt@greenst.com rmiller@greenst.com cdarling@greenst.com charraka@greenst.com
Quantitative Analytics	Matt Larriva, CFA, Senior Analyst Garrett Wiegele, Analyst Stephen Pazzano, Senior Associate Michael Eynon, Associate	mlarriva@greenst.com gwiegele@greenst.com spazzano@greenst.com meynon@greenst.com
Real Estate Analytics	Andrew McCulloch, CFA, Managing Director Joi Mar, CFA, Senior Analyst Rob Filley, Senior Associate Matt Dolins, Associate Jack Basalari, Associate Hunter Hite, Associate Austin Maleki, Associate Weston Mui, Associate Nick Fromm, Associate	amcculloch@greenst.com jmar@greenst.com rfilley@greenst.com mdolins@greenst.com jbasalari@greenst.com hhite@greenst.com amaleki@greenst.com wmui@greenst.com nfromm@greenst.com
Executive		
Craig Leupold, Chief Executive Officer Jeff Meister, Chief Financial Officer	cleupold@greenst.com jmeister@greenst.com	
Account Management		
Damon Scott, Managing Director Seth Laughlin, Senior Vice President	dscott@greenst.com slaughlin@greenstreettrading.com	
Sales		
Kris Hoffman, Managing Director Kevin Johnson, Senior Vice President	khoffman@greenstreettrading.com kjohnson@greenst.com	
Green Street Trading*		
Michael Vranich, Managing Director	mvrnich@greenstreettrading.com	
Advisory		
Jim Sullivan, President Dirk Aulabaugh, Managing Director Phillip Owens, CFA, Managing Director David De La Rosa, Senior Vice President Justin Brown, Senior Vice President	jsullivan@greenst.com daulabaugh@greenst.com powens@greenst.com ddelarosa@greenst.com jbrown@greenst.com	
Marketing & Media Relations		
Rosemary Pugh, Vice President Katie Clemons, Media Relations	rpugh@greenst.com kclemons@greenst.com	

Green Street Advisors, LLC
660 Newport Center Drive, Suite 800
Newport Beach, CA 92660
T 949.640.8780

Green Street Trading, LLC
2828 North Harwood Street, Suite 1200
Dallas, TX 75201
T 800.263.1388 (Trading) 214.855.5905 (Sales)

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