

Should All Real Estate Investors Be Value Investors?

An exploration of momentum investing in real estate markets



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Last year, the Commercial Real Estate Finance Council invited graduate and under-grad students to participate in its inaugural CRE Finance World® Award competition. Students throughout the United States submitted article entries related to commercial real estate finance to be reviewed by the CRE Finance World Editorial Board. Below is the winning entry authored by Akash Shivashankara, a graduate student at Columbia Business School. Akash has been awarded a \$2,000 scholarship, sponsored by Amherst Securities Group LP, and complimentary admission to the CREFC June 2014 Annual Conference in New York City.

Second place was awarded to Martin Kielmanowicz, Columbia Business School and third place to Yating Fang, New York University, Schack Institute of Real Estate.

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As commercial real estate investors, we are told time and again by investing legends that the key to long-term success is value investing — buy during times of uncertainty and pessimism, and sell during periods of “irrational exuberance.” In the words of Oaktree founder Howard Marks, “The herd applies optimism at the top and pessimism at the bottom. Thus, to benefit we must be sceptical of the optimism that thrives at the top, and sceptical of the pessimism that prevails at the bottom.” We all aspire to invest like Ronald Perelman, snapping up tens of billions of assets during the height of the Savings and Loan Crisis. Or to be Lone Star’s John Grayken, pulling the trigger on Merrill Lynch’s housing-backed CDO portfolio for \$0.22 on the dollar in July 2008. In both cases the investors reaped massive payouts for their bets placed during the height of market fear.

We all know that value investing works, but is it the only effective strategy for commercial real estate investing? Should all real estate investors be value investors?

One strategy known to be effective in other asset classes is momentum investing, or trend following¹. Momentum investing can often feel like the opposite of value investing and a seemingly irrational strategy: buy when asset prices have gone up, and sell when prices have gone down. However, it has proved a winning strategy in everything from traditional asset classes such as stocks and bonds to newer asset classes such as commodities.

This article sets out to test the idea of employing a momentum-based investing strategy in commercial real estate. Further, the article compares the strategy to value investing, and analyzes possible synergies in combining the two strategies in real estate portfolio construction.

Data and Methodology

The first question in this analysis was selection of an appropriate real estate index. I surveyed the Datastream US REIT index (monthly), the NCREIF National Property Price Index (quarterly), and the Green Street Commercial Property Price Index (monthly). While I understand that US REIT prices do not provide a complete representation of private market real estate prices, I have chosen to present analysis based on the US REIT index given the significantly higher data quality and longer period of data availability than the other indices. Furthermore, I found that the effectiveness of momentum not only held for the NCREIF and Green Streets indices but was in fact more pronounced. Please see Appendix 1 for results from these alternative indices.

I used extremely basic metrics to define value and momentum as outlined below.

Value

I used the 10 year inflation-adjusted price-earnings ratio (Shiller PE) as my measure of value. I considered the use of dividend yields as a value signal, but abandoned this measure after considering that dividend yields increased steadily for the 20-year period between the early 1980s and early 2000s, despite multiple valuation cycles occurring during this period. The increase in dividend yields over time was more likely attributable to other factors such as increasing investor preference for yielding properties.

I determined mean Shiller PE by looking back over the previous 5 years on a rolling basis. Standard deviation of this mean was also determined on a rolling 5-year basis. When the current Shiller PE ratio was lower than 0.5 annual standard deviations below the mean, a buy signal was given and the strategy invested in the real estate index. This represents the concept of buying when real estate valuation levels are low.

The value strategy stayed invested until the index value was 0.5 annual standard deviations above the rolling mean and a sell signal was given. This represented the concept of selling when valuations are high. After divesting, the strategy held cash until the next buying opportunity and valuations were low.

Momentum

The rules for the momentum strategy were even simpler than the value strategy. When the current level of the index was greater than the average of the previous 12 months, a buy signal was given. This represented the concept of buying when momentum is positive. The strategy stayed invested until momentum turned negative, or when the current index level was lower than the average of the previous 12 months. When momentum was negative, the strategy invested in cash. A simple smoothing mechanism was added to avoid quick switches between positive and negative momentum, which would be unrealistic to implement for a private market real estate investor.

US REIT data was available from December 1973 to August 2013. The value strategy as outlined requires 15 years of lead data before signal generation, putting the start date of the study period at December 1988. Both the value strategy and momentum strategy were long only, representing the inability of commercial real estate investors to take short positions in hard assets. The only leverage considered was the inherent leverage in the underlying REITs themselves. Finally, all returns are presented on an inflation-adjusted basis and before transaction costs. I ran simulations under reasonable-assumption transaction cost environments², and found that the momentum strategy remained effective. However, given the highly subjective nature of transaction costs, I have chosen to present my analysis on a pre-cost basis.

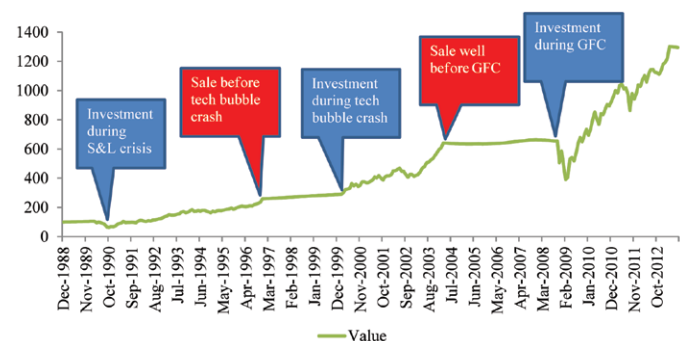
Value Works

Howard Marks was right: value works. Over the test period, use of the value strategy outlined above produced, on average, annual returns of 2.6% in excess of a strategy that simply bought and held real estate (hereafter "Buy and Hold"). Furthermore, the return improvement was even more impressive on a risk-adjusted basis, as the Sharpe Ratio³ improved from the 0.41 of the Buy and Hold strategy to 0.67 for the value strategy. Finally, value investing improved risk as measured by maximum 12-month drawdown, with a figure of 41% for the value strategy compared to 58% for the simple buy and hold.

Beyond the numbers, these results seem in line with the behavior and performance we would expect from successful value investors in real estate. As can be seen in Chart 1 below, the investors go through long periods of holding cash before deploying capital at opportune times, such as during the Savings and Loan (S&L) Crisis, the Tech Bubble, and the most recent Great Financial Crisis.

Also apparent is that in every case value investors enter before the market bottoms out and exit a few years before the next crash takes place.

Chart 1
Value Strategy Performance Graph

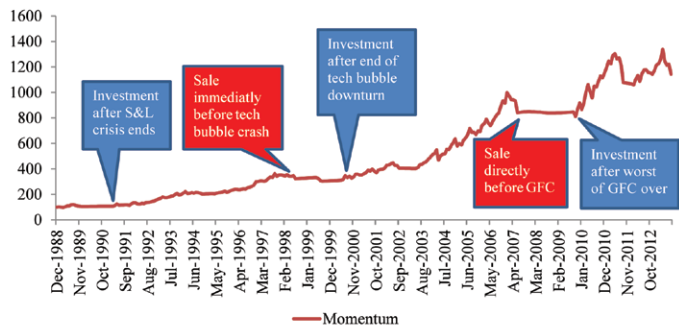


Momentum Works Too

Perhaps more surprising is the fact that momentum investing has worked, and by some metrics, even better than value. Return improvement over the Buy and Hold strategy was also strong, at 2.1%. More striking is the fact that the Sharpe Ratio doubled from 0.41 for the Buy and Hold strategy to 0.82 for the momentum strategy. Maximum drawdown showed the most dramatic improvement, dropping all the way to 16.6%.

Imagining a successful momentum investor is actually not as hard as it first seems. The momentum investor would have waited until the end of the S&L Crisis and sentiment turned positive before making any acquisitions. While this investor missed the best bargains during the crisis, she also avoided throwing cash in to a downward spiralling market. On the other end of the cycle, the momentum investor stays invested long after the value investor has left the market, exiting shortly after the market peak (see Chart 2 below). In the recent cycle, Blackstone Real Estate served as a good example of momentum investor behavior. Blackstone continued its acquisition spree through early 2007⁴ before selling the majority of its real estate holdings before the end of the year. While value investing competitors such as Grayken's Lone Star began buying in late 2008 and early 2009, Blackstone waited until late 2009 (when momentum was once again positive) to re-deploy capital⁵.

Chart 2
Momentum Strategy Performance Graph



Charts 3 and 4 below summarize the comparative performance of the different strategies:

Chart 3
Real Estate Strategy Performance Comparison

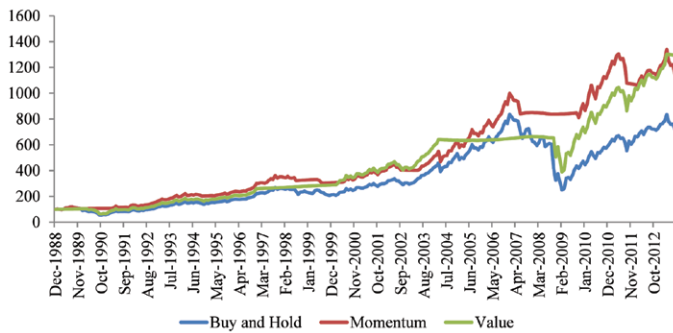
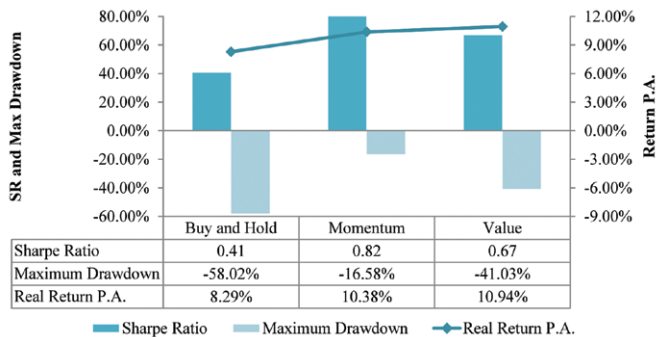


Chart 4
Real Estate Strategy Performance Comparison



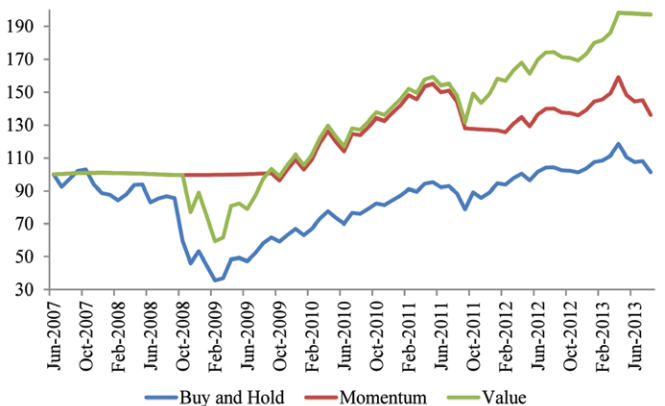
Value and Momentum Working Together

Now that we know that both value investing and momentum investing have worked in the past, it is interesting to analyze how they work, particularly in regards to key real estate investment considerations such as time horizon, liquidity (geography and asset size), and leverage.

Time horizon

Value investing relies on mean revision, which can often take several months (or even years) to materialize. This requires great fortitude, as the investor sees his positions decline rapidly and property net operating income (NOI) fall before seeing the thesis eventually play out. One example is the recent Global Financial Crisis. After a long period of over-valuation leading up to the financial crisis, valuations finally started to appear attractive from October 2008 (following the collapse of Lehman Brothers). However, this purchase was not rewarded immediately, as the strategy suffered a 40% drawdown before rebounding strongly in the recovery to outpace momentum (see Chart 5 below).

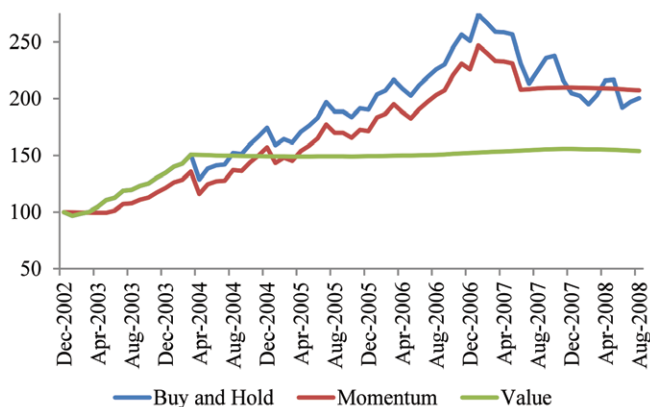
Chart 5
Comparative Performance During Financial Crisis



Meanwhile, momentum is a metric that is agnostic to intrinsic value, and a predictor only of short-term returns. This can be beneficial during periods of general overvaluation, where strong buying demand pushes prices higher. For example, during the period leading up to the Great Financial Crisis, value signals would have

called for the value investor to liquidate his positions by March 2004 and return to cash. However, this seemingly prudent decision would have cost the value investor over 100% of returns captured by the trend-following momentum investor over the subsequent four years. It is also important to note that momentum signals turned negative in June 2007, allowing the momentum investor to divest when the real estate market was still liquid. This would have allowed her to avoid the massive drawdown that occurred shortly afterward (see Chart 6 below).

Chart 6
Comparative Performance Leading up to Financial Crisis



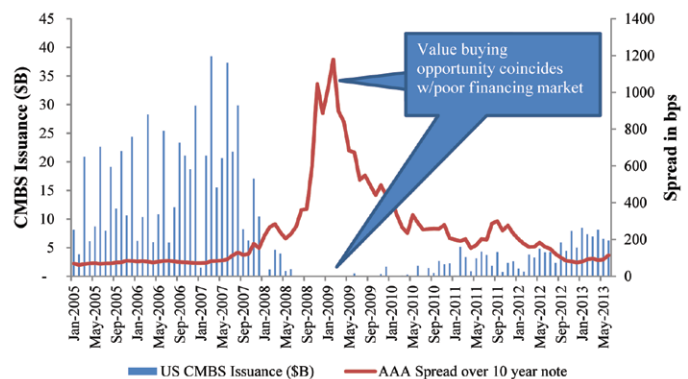
Liquidity

Assets that work best for value investing are the opposite of those that work best for momentum investing. Most often, the best deals are found in illiquid assets that other investors cannot fairly value. For example, a vacant suburban office building outside Dallas is more likely to be subject to mispricing than a Class A trophy office property in Manhattan. On the other hand, momentum investing requires the ability buy assets quickly as price trends show positive signals, and conversely to liquidate assets rapidly as soon as prices begin to decline. The result of employing both value investing and momentum investing is a portfolio diversified both in geography and asset size.

Leverage

By its very nature, value investing requires deploying capital when economic outlook is bleak and other investors have left the market. Unfortunately, this also means that real estate lenders are unlikely to provide financing during these times. As we saw in 2008, not only did CMBS issuance dry up completely, but spreads widened massively, making any bank financing available extremely expensive.

Chart 7
CMBS Spread and Issuance Data



Source: Commercial Mortgage Alert and Morgan Stanley

Momentum investing, however, requires buying only after asset prices have shown an upward trend, generally indicating both positive investor and lender sentiment. Therefore, it is more likely that assets will be acquired in times when financing is more readily available. However, as in all strategies, the use of leverage must be approached with prudence. Aggressive financing could lead to forced liquidation in the event that an investor is not able to divest positions quickly enough as momentum turns negative and prices begin to fall.

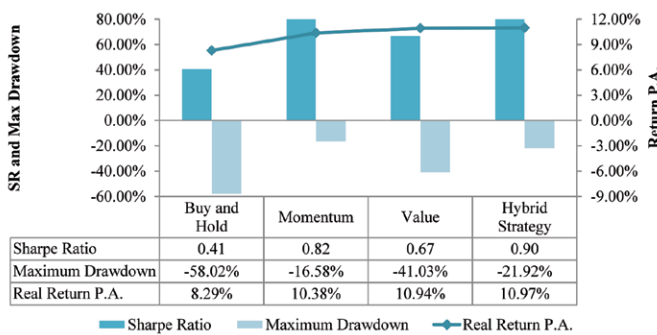
Potential Portfolio Implementation

Given that value investing and momentum investing work in such different ways, I explored the idea of creating a real estate portfolio that respected both. This strategy would take advantage of value cycles in markets while simultaneously remaining sensitive to price trends. To implement this, I created a hypothetical portfolio manager that started with \$100 million to invest in real estate in December 1988. This manager allocated \$50 million to a value investing team and then \$50 million to a momentum investing team. These managers followed the simple value and momentum rules outlined in the Data and Methodology section. Once a year, the portfolio manager rebalanced capital between the two groups.

The performance of this hybrid portfolio was quite striking. Returns over the period were 11% on average, with an impressive Sharpe Ratio of 0.90. The maximum drawdown also showed massive improvements over the Buy and Hold and value investing strategies, nearly reaching the risk reduction levels of the momentum strategy. Diversifying across these two simple strategies would have resulted in a portfolio worth \$1.3 billion by June 2013. In contrast, if the manager had allocated to private value-add and opportunity fund

managers⁶, he would have been left with a mere \$300 million by June 2013, or roughly one quarter of the returns.

Chart 8
Real Estate Strategy Performance Comparison



Conclusion

Before adopting any investing strategy, it is important to think about the reasons why such a strategy has provided excess returns, and to consider whether it was a fluke of past market conditions or will continue to prove successful. For financial markets in general, several behavioral explanations have been given, including the herding nature of investors, inability to process data, and tendency of investors to extrapolate into the future based on the recent past. The tendency to extrapolate is particularly true in commercial real estate where cap rates are used as the standard measure of value. As the economy continued to look rosy through the mid-2000s, investors extrapolated on recent rent growth to forecast unreasonably aggressive future NOIs, thereby creating higher and higher real estate valuations. As long as real estate investing decisions continue to be made by human investors, it seems likely that these momentum-producing phenomena will continue.

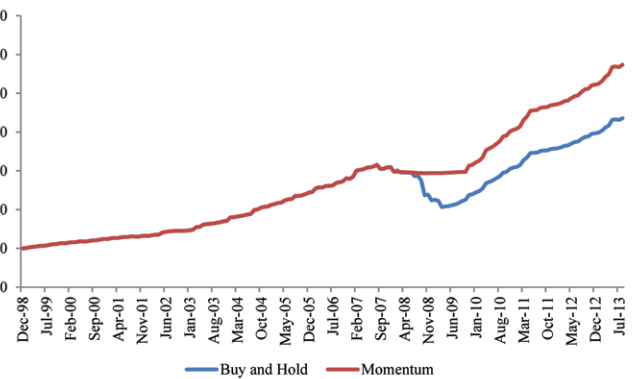
One important factor specific to commercial real estate is the debt financing cycle. Unlike publicly traded securities, the majority of real estate investors rely on debt to finance acquisitions. Throughout several cycles, we have seen financing most active and lending terms most lenient at the height of the market. On the other hand, debt becomes unavailable and expensive at the market trough. The result is a debt market that promotes pro-cyclical real estate investing. As long as this behavior continues, there will be benefits to an investment strategy that exits the market when financing terms are the best and re-invest after lenders begin to trickle back in.

It is impossible to replicate the investing genius of real estate legends through a simple set of rules and a short backtest. The

inherently idiosyncratic nature of real estate investing will always leave room for outsized returns to those investors who can source off-market transactions and underwrite properties more accurately than other market investors. However, I believe this study provides a starting point for the inclusion of momentum in commercial real estate investing.

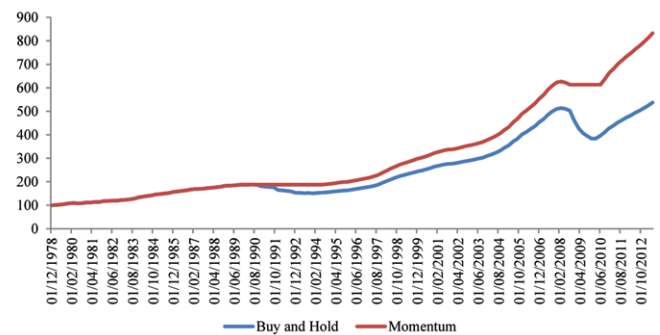
Appendix 1 – Alternate Index Performance

Green Street Real Estate Index



	Return	Sharpe Ratio	Maximum Drawdown
Buy and Hold	10.55%	1.56	-30.06%
Momentum	12.64%	2.80	-6.74%

NCREIF Index



	Return	Sharpe Ratio	Maximum Drawdown
Buy and Hold	4.99%	1.21	-21.49%
Momentum	6.33%	2.50	-2.09%

Note 1: High Sharpe Ratios and low drawdown figures for both Green Street and NCREIF are likely the result of the appraisal based nature of these indices.

Note 2: No consistent value signal was available for either NCREIF or the Green Street Index.

Appendix 2 – Sub-Period Returns

Period			Returns P.A.				Return Improvement over B&H			
Period name	Start date	End date	Buy and Hold	Momentum	Value	Hybrid Portfolio	Buy and Hold	Momentum	Value	Hybrid Portfolio
Inception through end of S&L Crisis	Dec-1988	Mar-1991	-10.73%	3.52%	-4.38%	1.21%	0.00%	14.25%	6.35%	11.93%
End of S&L Crisis through end of Tech Bubble	Mar-1991	Nov-2001	13.27%	12.78%	15.18%	14.04%	0.00%	-0.49%	1.91%	0.77%
Beg. of 2000s to Start of GFC	Nov-2001	Dec-2007	13.26%	13.63%	8.28%	11.19%	0.00%	0.38%	-4.98%	-2.06%
Start of GFC to Present	Dec-2007	Aug-2013	2.38%	5.39%	12.52%	9.08%	0.00%	3.01%	10.15%	6.70%
Entire Study Period	Dec-1988	Aug-2013	8.29%	10.38%	10.94%	10.97%	0.00%	2.09%	2.64%	2.67%

Period			Sharpe Ratio				Sharpe Ratio Improvement over B&H			
Period name	Start date	End date	Buy and Hold	Momentum	Value	Hybrid Portfolio	Buy and Hold	Momentum	Value	Hybrid Portfolio
Inception through end of S&L Crisis	Dec-1988	Mar-1991	(0.41)	0.34	(0.19)	0.10	0.00	0.74	0.21	0.51
End of S&L Crisis through end of Tech Bubble	Mar-1991	Nov-2001	0.94	1.05	1.31	1.22	0.00	0.10	0.36	0.28
Beg. of 2000s to Start of GFC	Nov-2001	Dec-2007	0.84	0.97	1.19	1.29	0.00	0.14	0.35	0.45
Start of GFC to Present	Dec-2007	Aug-2013	0.12	0.42	0.77	0.75	0.00	0.31	0.65	0.63
Entire Study Period	Dec-1988	Aug-2013	0.41	0.82	0.67	0.90	0.00	0.41	0.26	0.49

1 See Time Series Momentum (Moskowitz, Ooi, Pedersen), Global Tactical Cross-Asset Allocation: Applying Value and Momentum Across Asset Classes (Blitz and van Vliet), etc.

2 Assumed public market transaction costs for the REIT index, higher hard asset transaction costs for the NCREIF and Green Street private market indices

3 Sharpe Ratio as defined by annual return / annual standard deviation

4 Culminating with its landmark acquisition of Equity Office Properties

5 Per company website (<http://www.blackstone.com/businesses/aam/real-estate>)

6 Data from Cambridge Associates, June 30, 2013