BUILDING RETURNS

INVESTING IN SUSTAINABILITY PAYS OFF

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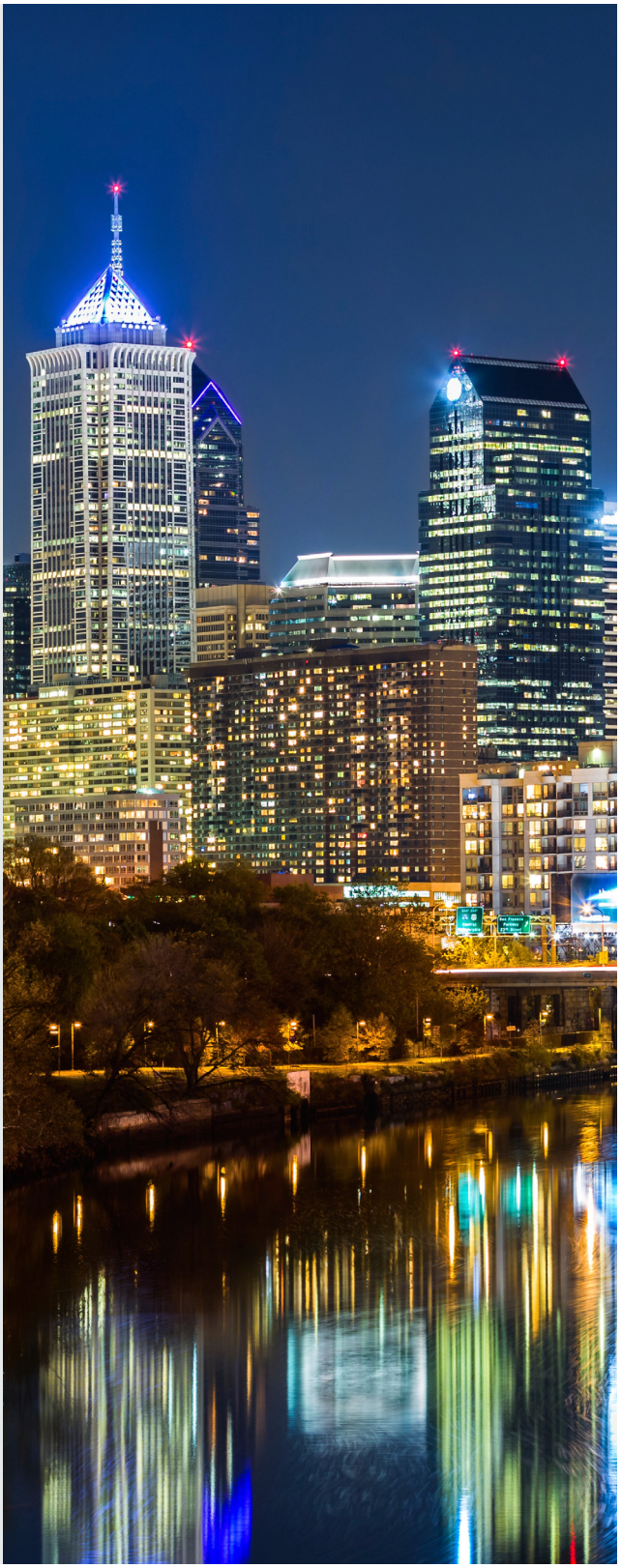
HIGHLIGHTS

The University of Cambridge's recent study, *The Financial Rewards of Sustainability: A Global Performance Study of Real Estate Investment Trusts*, commissioned by Carbon War Room, explores the relationship between investing in sustainability and financial returns of real estate investment trusts (REITs). Key findings include:

- A higher sustainability ranking in the annual GRESB REIT survey correlates to superior financial performance. Both the returns on assets and returns on equity of REITs with high GRESB scores outperform their peers.
- Adjusted for risk, there is a significant link between portfolio sustainability indicators and REIT stock market performance.
- The study establishes for the first time that investing in sustainability pays off for investors in REITs, enhancing operational performance and lowering risk exposure and volatility.
- There remains significant room for improvement in the sustainability performance of REITs. Despite improvements in the REIT ratings in recent years, the median score of rated real estate companies in 2014 was 58 out of 100, underlining the vast untapped potential for further optimization of most REITs' sustainability practices.

There is now a substantial body of evidence that demonstrates that building owners who invest in improving the sustainability performance of their properties also improve their financial performance. For real estate assets to maintain their competitive positioning, it is critical that their owners invest in measures that improve their sustainability.



INTRODUCTION

The search for effective strategies to reduce building-related emissions and a building's overall environmental footprint began many years ago at the individual asset level with a range of voluntary and compulsory measures such as green building labelling (e.g., BREEAM, ENERGY STAR, Green Star, LEED), mandatory Energy Performance Certificates, and building energy consumption reporting. In addition to these individual building-level measures, there is an increasing awareness that crucial decisions about the ownership and operation of buildings are frequently made at a higher level, for example in the context of managing a real estate investment portfolio.

It is in this context that in 2009 several large pension funds launched GRESB, the Global Real Estate Sustainability Benchmark, in order to achieve a more comprehensive understanding of their total exposure to environmental, social, governance, and energy risks. GRESB conducts an annual survey of real estate portfolio owners including private equity firms and publicly-traded real estate investment trusts (REITs), collecting company-specific data on seven core aspects of sustainability, and has become standard practice for the world's leading real estate investment and asset management companies. GRESB aggregates these aspects to generate the overall GRESB score, expressed as a percentage of the maximum, for each company. In 2014, GRESB benchmarked real estate companies with assets worth USD $2.1 trillion. Further details on the GRESB rating system can be found in Appendix 1 of the academic study accompanying this report.

ASSESSING THE LINK BETWEEN SUSTAINABILITY AND FINANCIAL PERFORMANCE OF REITs

In late 2014, the University of Cambridge undertook a first-of-its-kind study to investigate whether the "sustainability" of a REIT portfolio, as reflected in the benchmark rating provided by GRESB, is associated with that REIT's financial performance. Specifically, the study sought to answer two questions of critical importance to REIT executives and investors:

1. How do investments in sustainability affect key financial indicators such as return on assets (ROA), return on equity (ROE), and stock performance (total returns, alphas, and betas)?
2. Are specific indicators or dimensions of sustainability such as Measurement & Performance, more predictive of financial performance than less tangible aspects such as Management & Policy?

The core dataset provided by GRESB for this study, covering the 2011–2014 time period, includes 442 detailed sustainability ratings for global REITs. This data is a subset generated from responses to a survey of over 1,000 listed property companies and private equity real estate companies who submitted their data to GRESB over this time frame. The survey covered 56,000 buildings with an aggregate value of USD $2.1 trillion. For comparison, the FTSE EPRA/NAREIT Global Index has a combined market capitalization of approximately USD $2 trillion.

There are a number of reasons to expect a positive association between sustainability and financial metrics:

- The value of the additional transparency provided by the GRESB assessment may increase the attractiveness of a listed real estate company, which in turn should result in higher demand for its stock.

- A lower environmental impact has been shown in previous studies to positively affect cash flows at the property level,[1] which should also affect the aggregate operational financial performance as measured by returns on assets (ROA), returns on equity (ROE), and thus the stock market performance of listed property companies. Higher cash flows are transmitted to investors through a number of channels, ranging from rental premiums to higher occupancy rates at the asset level and lower cost of capital for real estate companies with "greener" assets and management processes.
- Both the increased level of transparency and the lower exposure to environmental, energy, and regulatory risk should alter the risk-return profiles of participating companies over time. All else equal, companies with higher GRESB ratings could be expected to achieve higher investment return metrics per unit of risk.

While sustainability performance is measured by GRESB,[2] this study considered financial performance in two different ways, based on data provided by Thomson Datastream and SNL:

- operational performance, which includes ROA and ROE
- stock market performance, represented by the annualized stock market return as well as alphas and betas.

Each of these financial performance metrics (ROA, ROE, stock returns, alphas, and betas) are modelled as a function of several attributes of REITs (e.g., total assets, debt-to-asset ratio, price-to-book ratio, age of REITs, investment growth rate, market capitalization, geographic focus, and property types) and the GRESB score.

[1] For example: Fuerst, F., & McAllister, P. (2011): Green noise or green value? Measuring the effects of environmental certification on office values. *Real Estate Economics*, 39(1), 45-69.
Eichholtz, P., Kok, N., & Quigley, J. M. (2010). Doing well by doing good? Green office buildings. *The American Economic Review*, 2492-2509.
[2] While GRESB calculates a sustainability score, the data on which it is based is self-reported by the survey participants.

TRENDS

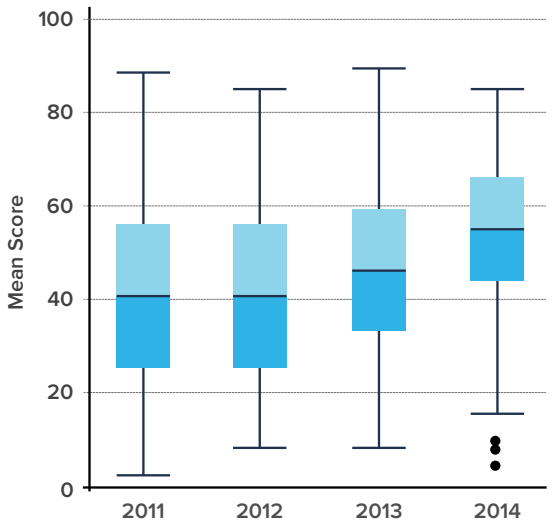
Table 1 contains summary statistics on the GRESB and financial performance variables used in this study, comparing the average financial performance of GRESB participants to non-participants. While GRESB participants exhibit somewhat higher returns for some metrics in more recent years, there is no immediate indication of systematic differences in financial performance between the GRESB sample and the control sample.

TABLE 1:
AVERAGE FINANCIAL PERFORMANCE OF GRESB VERSUS NON-GRESB PARTICIPANTS
(% ANNUAL RETURN)

	2011	2012	2013	2014
Non-GRESB ROA	3.193	3.599	3.696	3.335
GRESB ROA	3.618	2.683	3.055	3.711
Non-GRESB ROE	5.994	7.577	6.607	7.465
GRESB ROE	7.949	6.267	7.011	8.515
Non-GRESB Return Index (RI)	-0.55%	7.48%	2.77%	4.13%
GRESB Return Index (RI)	-2.44%	6.16%	4.21%	4.08%

The boxplots in Figure 1 demonstrate that the average sustainability performance of rated real estate companies has improved since GRESB's inception in 2011 and the spread of performance ratings has narrowed. Although the number of GRESB participants has grown considerably and the number of monitored sustainability criteria has increased, variation in scores has markedly decreased, possibly due to a standardization of processes and adoption of best practices across real estate investment companies. The largest improvements between 2011 and 2014 were made in the Management & Policy dimension (2011: 35 points, 2014: 50 points) while Implementation & Measurement has also improved (2011: 53 points, 2014: 60 points). The convergence of scores was similar in both of these dimensions.

FIGURE 1:
BOXPLOT OF DISTRIBUTION OF OVERALL SCORE



ASSOCIATION WITH KEY FINANCIAL INDICATORS

ROA and ROE have a significant positive association with the overall GRESB score. ROA is shown to increase by roughly 1.3% for each 1% percent increase in the GRESB score. So for example, assuming an average annual 5% ROA and a GRESB rating of 50 at baseline, a GRESB score of 55 (10% above baseline) is associated with an ROA that is 67 basis points higher, while a GRESB score of 60 (20% higher) yields an ROA that is 133 basis points higher. The association with ROE is more pronounced, with an increase of 3.4% for each 1% increase in the GRESB score. It should be noted that the financial effects of an individual REIT's efforts to improve its score may deviate from these general estimates.

The link between stock market performance and sustainability is less clear. The fixed effects estimation shows an insignificant relationship between a REIT's GRESB score and stock performance. However, when adjusted for risk, a significant and positive effect on stock market returns and GRESB scores is found. This

means that REITs with higher GRESB ratings do, on average, deliver higher returns per unit of risk.

One possible explanation for the difference between operational performance (ROA and ROE) and non-risk-adjusted stock market performance is that REIT investors are not fully informed about a REIT's sustainability activities as this information is often unavailable, unstructured, intangible, and opaque; thus investors are unable to factor this information into investment expectations. Conversely, management performance of a REIT as described by its sustainability activities is generally known to investors but behaves in a relatively stable and predictable manner and is hence already priced into stock prices, hence no outperformance will be observed.

The seven core aspects that make up the overall GRESB score are divided into two dimensions: Implementation & Measurement and Management & Policy. The data—available in Table 5 of the academic study accompanying this report—reflects that actual Implementation & Monitoring of sustainability measures is a vastly more significant and more powerful driver of financial performance than the Management & Policy metric. This seems to indicate that the outperformance of REITs with higher overall GRESB scores may be driven by the more tangible measures captured in the Implementation & Measurement score.

CONCLUSIONS

This study on real estate investment trusts (REITs) by the University of Cambridge on the association between sustainability indicators and key financial indicators is additional evidence that investing in sustainability makes good business sense. REITs with stronger performance on indicators such as energy use, greenhouse gas emissions, water consumption, waste management, labor conditions, and anti-corruption have higher returns on equity, higher returns on assets, and stronger risk-adjusted stock performance.

This study complements the numerous other studies that reach similar conclusions, listed for convenience below. The message has never been clearer: in real estate, smart business managers are investing in sustainability.

RELATED RESOURCES

Tying sustainability and financial performance:

The Relationship Between Corporate Sustainability and Firm Financial Performance
Conlon and Glavas, 2012
Looks at the effects of LEED certification on the financial performance of PNC Bank branches.

The Impact of LEED Certification on Hotel Performance
Walsman, Verma, Muthulingam, 2014
Explores the impact of LEED certification on hotel business performance.

Doing Well by Doing Good? Green Office Buildings
Eicholtz, Kok, Quigley, 2010
Looks at 10,000 subject and control buildings to determine trends in the performance of green buildings.

Portfolio Greenness and the Financial Performance of REITs
Eicholtz, Kok, and Yonder, 2012
A significant precursor to the Fuerst study summarized above. Looks at the effects of sustainability on REIT financial performance using LEED and ENERGY STAR.

"Can Investing in Corporate Social Responsibility Lower a Company's Cost of Capital?"
Cajias, M.; Fuerst, F. Bienert, S., *Studies in Economics and Finance*. 31/2, 202-222, 2014.

"Do Responsible Real Estate Companies Outperform Their Peers?"
Fuerst, F.; Cajias, M.; McAllister, P.; Nanda, A., *International Journal of Strategic Property Management.* 18/1, 11-27, 2014.

"Green Noise or Green Value? Measuring the Effects of Environmental Certification on Office Values"
Fuerst, F. and McAllister, P., *Real Estate Economics.* 39/1, 1-25, 2011.

Proving the advantage of green buildings:

The Business Case for Green Building
World Green Building Council, 2013

Linking Energy to Health and Productivity in the Built Environment
Carnegie Mellon University, 2003

How to Calculate and Present Deep Retrofit Value
Rocky Mountain Institute, 2014

Sustainable real-estate investments in the news:

In 2014, Regency Centers Corp. became the first US real estate investment trust to issue a green bond (10-year, $250 million)

Vornado Realty Trust followed Regency's lead by assembling a 5-year, $450 million green bond

Fannie Mae will provide lower interest rates to multifamily properties with green building certifications like LEED