

THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

DEPARTMENT OF RISK MANAGEMENT

Initial Market Reaction to Green REITs

CHASE BISIGNARO
SPRING 2021

A thesis
submitted in partial fulfillment
of the requirements
for a baccalaureate degree
in Accounting
with honors in Risk Management

Reviewed and approved* by the following:

Dr. Brent Ambrose
Professor of Risk Management
Thesis Supervisor and Honors Adviser

Samuel Bonsall
Professor of Accounting
Faculty Reader

* Electronic approvals are on file.

ABSTRACT

While there have been numerous studies testing REIT portfolio greenness and its relation to financial performance, using a “shock date” and event study approach, there is limited research that uses IPO date as the “shock date.” In order to fill this void in existing research, an event study was coordinated to determine the financial performance of selected firms one year following IPO date, determined the “greenness factor” for each firm and analyzed the results. The “greenness factor” in this study is defined as property-level LEED and Energy Star certification percentage. A major challenge presented during the data collection phase was to retroactively identify REIT portfolios at the time of IPO. Through a series of analyses, the ultimate objective is to determine if there exists a positive relationship between green REITs and positive financial returns shortly after initial public offering.

TABLE OF CONTENTS

LIST OF TABLES	iii
ACKNOWLEDGEMENTS	iv
Chapter 1 Introduction	1
What is Greenwashing?	1
The Role of Green Certifications in Real Estate and Finance	2
Chapter 2 Literature Review	4
Chapter 3 Data	7
Chapter 4 Methodology	10
IPO Portfolio and Green Certification	10
Returns Event Study	11
Regression Analysis.....	11
Chapter 5 Results	14
Chapter 6 Conclusion.....	18
Appendix A: Regression Inputs	20
Bibliography	21

LIST OF TABLES

Table 1. Subject REITs and IPO Dates.....	9
Table 2. Analysis Data Summary	13
Table 3. Regression Results (1 Year)	16
Table 4. Regression Results (1 Month).....	17

ACKNOWLEDGEMENTS

Foremost, I would like to thank Dr. Brent Ambrose for the ongoing support throughout the process, from idea brainstorming, to execution, and through to the final review stages. It has been an honor and a pleasure to be able to work with directly with you throughout the process. I would additionally like to thank Dr. Samuel Bonsall for partaking in the proposal and review stages of this project. Finally, I would like to thank all other Real Estate faculty members whom I may have been in contact with for sparking my interest in this topic area.

Chapter 1

Introduction

Numerous reports and articles have been written through the recent years stressing the importance of sustainability in real estate development of the future. The substantial buzz around this topic has certainly caught eyes, but it begs a very important question: is there any substance behind these claims, or is the perceived future of sustainable development for optics only? The concept of “greenwashing” describes the case in which institutions promote a product as sustainable, only to appeal to potential buyers or investors. As consumers evolve and become more conscious of sustainable corporate practices, will investors follow suit? The true test is to identify if investors are willing to pay a higher price for a “greener” investment opportunity or in this case, a collection of real property in the form of a Real Estate Investment Trust. To an investor, a higher price up front is not so attractive, unless, of course, the long-term performance of the asset yields great returns. Only time will tell if the trend of sustainable development continues but analyzing previous activity can certainly provide insight into what the future holds (American Bar).

What is Greenwashing?

Greenwashing misleads external stakeholders, convincing them that the given product, service, or investment is sustainable, or “green,” while in reality the claims are exaggerated or even false. Most recently, the European Union has taken steps against these practices, particularly related to investment funds. When the EU formally introduces the Sustainable Finance Disclosure Regulations, investment managers will face new regulations aimed to tackle

these exaggerated or false claims. The EU plans to require these funds to evaluate their portfolios based on a set of 18 criteria, ensuring that claims of sustainability and social responsibility accurately represent reality. While these rules are being phased in, the EU will require firms to publish this data by June of 2023. Generally, data related to sustainability and corporate social responsibility is unregulated. This is rapidly changing as this data becomes more influential in both the consumer and investment markets across the world. As multinational firms begin to comply to these EU regulations, it will be exciting to see if other jurisdictions begin adopting similar regulations, combatting “greenwashing” (Holger, Ochoa).

The Role of Green Certifications in Real Estate and Finance

The first green certification system was introduced in 1990 with the Building Research Establishment's Environmental Assessment Method. The introduction of LEED from the US Green Building Council would follow in the years to come. LEED quickly became the gold standard for sustainable building certification and has developed into an influential symbol for the real estate sector and beyond. While it can be said that these certifications have promoted green development and renovations, others have argued that the certification systems are flawed and have created undesirable consequences (Vierra).

These green certification systems have also served as the basis for numerous studies focusing on sustainability and real estate. “Perspectives on the LEED System as a Green Certification Standard” (Tolksdorf, Peterson, Ulferts) details both the strengths and shortcomings of the LEED certification system as an industry standard. LEED certified promise lower operating costs and to be more friendly to the environment in which they sit. While these

benefits certainly sound promising, this particular report highlights firms' tendency to "game" these systems. In order to manipulate the system, developers would focus their efforts on simply checking boxes and not on the most impactful areas that would effectively make the building more sustainable. This results in inauthentic certifications, a false sense of sustainability, and potentially flawed asset valuations. It was noted that recent iterations of the LEED system have been reconfigured in order to discourage this behavior (Tolksdorf, Peterson, Ulferts).

The American Bar Association studied both the current state and future of LEED certification amid the economic recovery in 2011. While this topic does not have direct implications on today's environment, there certainly could be parallels drawn, especially when it comes to specifically struggling asset groups in today's commercial real estate market. The ABA noted that prior to the financial crisis of 2008, LEED certification was growing rapidly. As demand shrunk, the USGBC changed to system to evolve with the current environment. From its beginnings, LEED was designated for new construction. During this period, its scope was reimagined to include renovations and specific metrics on property carbon footprint. Version 3 was updated in order to go beyond the original certification. Instead, the continued certification of the asset depends on the continued high performance and low carbon footprint standards. These changes go above and beyond to provide robust assurance that the subject property is indeed a sustainable piece of property (American Bar).

Chapter 2

Literature Review

The topic of sustainability and financial returns, at large, has been widely discussed and researched over the last decade. This is likely due to the rise in popularity and demonstrated investor interest in corporate social responsibility efforts. With this said, a general consensus has not yet been met as to the effectiveness of green investments at achieving higher overall investment returns. The sub-topic of REIT portfolio greenness and financial performance, however, has a far more limited set of academic research. There are several noteworthy studies related directly to this topic, namely “Portfolio greenness and the financial performance of REITs” (Eichholtz, Kok, Yonder) and “Are Green REITs Valued More?” (Sah, Miller, Ghosh). While these two studies provide reasonable evidence that a positive correlation does exist between green portfolio and financial performance, there is far more research needed to fully develop viable conclusions (Eichholtz, Kok, Yonder; Sah, Miller, Ghosh).

“Portfolio greenness and the financial performance of REITs (Eichholtz, Kok, Yonder) examines portfolio greenness and financial performance, using LEED certification as a measure of greenness and the four-factor Fama / French model as a measure of financial returns. This study comes to the determination that a green portfolio varies directly with stronger financial output for the firm. This research, conducted through Maastricht University in the Netherlands, very specifically strived to control for “endogeneity issues” that the study suggests stem from higher performing REITS being able to invest more into sustainability, yielding inconsistent results. Much of the data from the study, including the financial and the sustainably data, originate from the SNL Real Estate Database (now, S&P Global Market Intelligence). “Are Green REITs Valued More?” (Sah, Miller, Ghosh), the aforementioned study, used a different

methodology and definition of greenness. As a notable difference, the definition of greenness, this study identified corporate-level strategic initiatives, as opposed to focusing on property-level data. With this said, this study was able to draw very similar conclusions, regarding a positive correlation (Eichholtz, Kok, Yonder; Sah, Miller, Ghosh).

“US REITs and Sustainability: A Returns Analysis” (Turezyn), used an event study approach to determine if green REITs yielded stronger financial performance. As a measure of greenness, Turezyn focused on firm-level partnerships with the US Green Building Council (USGBC). The start date of the partnership was used as the “shock event” in the event study. Limiting factors of this study include limited access to property-level data, as well as an incomplete picture of REIT sustainability efforts. The results of this study found that generating a partnership with the USGBC created a negative impact on financial returns. These results disproved the stated hypothesis (Turezyn).

The conclusion from “The Financial Performance of Green REITs Revisited” (Coën, Lecomte, Abdelmoula) presented a sound opportunity for future research that I plan to explore in this particular study. The research states that previous work has indicated that a “shock effect” would be necessary to properly study the impact of sustainability on the performance of REITs. The said “shock effect” allows for more visibility into the REITs performance, as an equilibrium point will not yet have been met within the short period of time following the event. A suggestion for future study was represented in the conclusion; “analyzing newly listed green REIT performance at the time of an IPO versus non-green REITs (*ceteris paribus*) would help characterize the impact of greenness on U.S. REITs’ financial performances.” In order to build on this recommendation, I have decided to analyze REIT stock performance immediately

following the date of initial public offering. This would adequately create the “shock effect” needed to analyze financial performance of the firms (Coën, Lecomte, Abdelmoula).

While much existing research does provide reasonable evidence for positive correlation, to my knowledge, there has been no research conducted that used IPO date specifically as the “shock effect” to subsequently gauge financial performance. Through this study, I hope to bring a new perspective to the topic at hand, building upon previous work in this area and future research recommendations specifically stated in: “The Financial Performance of Green REITs Revisited” (Coën, Lecomte, Abdelmoula). Through this research and analysis, I hope to determine if green REITs outperform non-green REITs within the first year following date of initial public offering (Coën, Lecomte, Abdelmoula).

Chapter 3

Data

The selection of subject firms was compiled using the Nareit Real Estate Investment Trust (REIT) listing database. To add context, REITs are often used in real estate-related studies as they provide a sufficient amount of data, especially compared to privately owned real estate assets. By using REITs as subject firms, data was able to be collected in order to adequately conduct this study. A set of 17 REITs were identified within in the same industry (lodging and hospitality), for the sake of consistency in the analysis. Of the 17 firms selected, 3 were removed due to a lack of property-level data, resulting in a sample of 14 lodging and hospitality REITS.

Date of initial public offering for this sample of 14 firms was identified using the Wharton CRSP database. These dates will be the respective starting points for the event study to be conducted, using financial returns data, once year following IPO date. Using the query parameter FIRST_DATE allowed the database to locate the first detected activity for each firm on the public stock market. Although this method is quite indirect, it provided a reasonable method to identify appropriate IPO dates.

Firm portfolio data at date of IPO originated from the S&P Global Market Intelligence database. This robust source provided both acquisition and disposition data for each subject REIT. From here, I was able to indirectly arrive at each firm's portfolio at IPO date. S&P's report builder streamlined the data collection process, allowing detailed filters and parameters, resulting in more precise collection. Property-level green certification data also originated from the S&P Global Market Intelligence database. This data was aggregated on a historical basis and refined for each firm's IPO date.

Historical financial return data was sourced via Yahoo Finance, using the monthly adjusted close prices for each REIT. By collecting this data on a monthly basis, it would allow for maximum flexibility to analyze each firm following date of IPO. The Fama / French monthly dataset was also obtained in order to determine historical risk-free rates for the subject months of each property. This data would set a market-wide baseline by which firm returns would be compared to in the event study.

Table 1. Subject REITs and IPO Dates

REIT Name	Ticker	IPO Date
Apple Hospitality REIT Inc.	APLE	5/18/15
Ashford Hospitality Trust*	AHT	8/26/03
Braemar Hotels & Resorts Inc.	BHR	4/24/18
Chatham Lodging Trust*	CLDT	4/16/10
CorePoint Lodging	CPLG	5/31/18
DiamondRock Hospitality Company	DRH	5/26/05
Hersha Hospitality Trust	HT	1/21/99
Host Hotels & Resorts Inc.	HST	4/18/06
MGM Growth Properties LLC*	MGP	4/20/16
Park Hotels and Resorts	PK	1/4/17
Peddlebrook Hotel Trust*	PEB	12/9/09
RLJ Lodging Trust	RLJ	5/11/11
Ryman Hospitality Properties, Inc.	RHP	10/1/12
Service Properties Trust	SVC	9/25/19
Sotherly Hotel Inc.	SOHO	4/22/13
Summit Hotel Properties Inc.	INN	2/9/11
Sunstone Hotel Investors, Inc.	SHO	10/21/04
Xenia Hotels & Resorts, Inc.	XHR	2/4/15

This table summarizes the subject firms selected for this study via the Nareit database. Along with firm name, ticker symbol and IPO date are included. This data is a foundation for subsequent data, analysis, and findings, as much of the research conducted is based on these defined IPO dates. It can also be noted that firms marked with (*) were removed from the study due to lack of data.

Chapter 4

Methodology

The objective of the study is to determine if a greener property portfolio leads to stronger financial returns. It was settled that a quantitative analysis combined with an event study would be the optimal approach to investigate the posed hypothesis. This would entail identifying REIT portfolios at the property level as of IPO date, compiling and allocating green certification data, conducting a stock returns event study, and finally initiating a regression analysis to then commingle all aspects of the study to eventually arrive at a conclusion. As discussed in the data section above, preliminary steps were taken in order to both determine the sample set of 15 REITs and identify corresponding IPO dates.

IPO Portfolio and Green Certification

Establishing a property-level portfolio at IPO data posed a significant challenge, as the historical data was not directly accessible. In order to arrive at a portfolio, the S&P Global Market Intelligence database integrated report generator was utilized to produce a list of all acquisitions and dispositions for each firm year-over-year. Using this report generator, the date parameter was set to only include transactions that occurred prior to IPO date. First, a list of acquisitions was compiled. From this list, asset dispositions were manually removed from the master list. These steps were repeated for each subject firm. This resulted in a complete list of all properties acquired pre-IPO, less disposed properties.

The S&P database provided a comprehensive list of all LEED and Energy Star certified properties, historically. Properties listed as certified were subsequently matched with properties

from the IPO list. Date of green certification was determined via a manual search process within S&P. Once this data was aggregated, the “greenness” factor was calculated as a percentage of the full portfolio for each of the subject firms. This aggregated data will define one of the two independent variables for the regression analysis.

Returns Event Study

Once the property-level portfolios and corresponding green data were defined, the event study will follow, in order to determine firm-level financial returns. This would define the dependent variable for the regression analysis. Monthly adjusted closing prices were collected via Yahoo Finance for each of the subject firms. A date parameter was used to pull the data for 12 months following the identified IPO date. Returns were then calculated on a monthly logarithmic basis. Risk-free rates via the Fama / French database were aggregated and aligned for the same 12-month period, for each firm. This would establish a baseline to which returns would be compared. Excess return was calculated by subtracting the risk-free returns from the corresponding firms returns. Cumulative excess returns were calculated by accumulating the totals from the excess returns. The cumulative return figures at both the 1-month mark and 12-month mark would then be transferred to be used in the regression analysis as the dependent variables.

Regression Analysis

The final step before arriving at a conclusion is the analysis. The analysis conducted was a regression analysis aimed to determine if there is significant correlation between portfolio

greenness and stock performance. In this analysis the dependent variable was defined as firm-level cumulative financial returns. The first independent variable is the greenness factor, as defined as a percentage in the section above. A secondary independent variable was also created in order to control for firm size. This factor would use asset book value at year-end of the IPO year in order to mitigate any bias related to firm size in the analysis. In order to interpret the results from the above regression analysis, the focus was directed toward p-value and the coefficient associated with the greenness independent variable.

Table 2. Analysis Data Summary

REIT Name	IPO Date	1-yr Cum. Return	Percent Green
APLE	5/18/15	-0.055310999	1.73%
BHR	4/24/18	-1.508052744	7.69%
CPLG	5/31/18	-2.54226762	0.64%
DRH	5/26/05	-2.750823765	0.00%
HT	1/21/99	-3.673299219	0.00%
HST	4/18/06	-3.527360978	13.49%
PK	1/4/17	-0.597300811	3.70%
RLJ	5/11/11	0.028821193	0.71%
RHP	10/1/12	0.082347623	0.00%
SVC	9/25/19	-1.753506336	2.44%
SOHO	4/22/13	0.491219136	0.00%
INN	2/9/11	-0.053390249	0.00%
SHO	10/21/04	-1.965271323	5.00%
XHR	2/4/15	-0.391028153	4.17%

Table 2 displays a summary of data collected, highlighting single-year cumulative returns and portfolio green percentage. This dataset summarizes the inputs for the regression analysis (the full inputs are listed in Appendix I). As stated, the single-year cumulative returns were used as the dependent variable, while the percent green and asset book value fields would be defined as independent variables.

Chapter 5

Results

Following the data collection and documented methodology, the regression analysis yielded results for the study. The objective of this study was to determine if a green portfolio of real estate assets resulted in increased financial performance, by way of IPO date. As a result of the analysis via regression, it has been determined that there is a definitive negative relationship between firm greenness and financial returns, disproving the presented hypothesis for this study. After analyzing the initial regression analysis, it was found that the coefficient for the greenness factor was definitively negative. This means that firms with green portfolios actually yielded substandard financial performance. Additionally, the results were determined not to be statistically significant, as the p values exceeded the standard threshold of statistical significance of 0.05.

These results came after controlling for firm size using asset book value at IPO year-end, obtained via corporate balance sheets in respective IPO years. This prevented any bias that would stem from firm size. For example, a small firm may have fewer resources to invest in green initiatives. Additionally, two separate analyses were conducted, one using returns 1-year after IPO and the other using returns only 1-month after IPO. This was done in order to test the hypothesis on two different levels.

Table 3 and table 4 below depict the results of the regression analysis. As shown, table 3 displays the regression analysis results using financial returns after 1-year. Table 4 displays the analysis results using returns 1-month following IPO date. Inputs of this analysis can be referenced above in table 2. The results from these two separate analyses largely yield the same conclusions, as negative green coefficients were present in both cases. Since both yielded similar

results, it can be determined that the set time after IPO is not causing an adverse impact on the analysis. Using a timeframe beyond one-year would eliminate the “shock effect” required for a successful event study, as changes in share price could be attributed to a variety of other unrelated factors.

Table 3. Regression Results (1 Year)

<i>Regression Statistics</i>	
Multiple R	0.380058185
R Square	0.144444224
Adjusted R Square	-0.011111372
Standard Error	1.428644568
Observations	14

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	2	3.790468795	1.895234397	0.928569771	0.423999947	
Residual	11	22.45127833	2.041025303			
Total	13	26.24174712				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.950010928	0.540381985	-1.758035898	0.106495369	-2.139383657	0.239361801	-2.139383657	0.239361801
Asset Value at IPO Year	2.5067E-11	1.31829E-10	0.190148299	0.852656519	-2.65086E-10	3.1522E-10	-2.65086E-10	3.1522E-10
Percent Green	-16.18041955	13.6674322	-1.183866823	0.26141762	-46.26223501	13.90139591	-46.26223501	13.90139591

Table 4. Regression Results (1 Month)

<i>Regression Statistics</i>	
Multiple R	0.122056501
R Square	0.014897789
Adjusted R Square	-0.164211703
Standard Error	0.158165627
Observations	14

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	0.004161572	0.002080786	0.083176995	0.920761422
Residual	11	0.275180022	0.025016366		
Total	13	0.279341594			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.096264357	0.059825836	-1.609076677	0.135899049	-0.227940134	0.03541142	-0.227940134	0.03541142
Asset Value at IPO Year	-4.50912E-12	1.45948E-11	-0.308954491	0.763129048	-3.6632E-11	2.76138E-11	-3.6632E-11	2.76138E-11
Percent Green	-0.032795494	1.513125123	-0.021674013	0.983096158	-3.363161434	3.297570447	-3.363161434	3.297570447

Chapter 6

Conclusion

As discussed in the results section, the conclusions developed in the analysis disproved the presented hypothesis. With this said, there are key takeaways and opportunities for future research that were brought to light. While this particular study focused on hospitality and lodging REITs, expanding the subject set to other property uses or asset types could yield different results in the end. Additionally, it is important to continue to study this topic, as corporate sustainability efforts are constantly changing, as are industry regulations, and consumer and investor preferences.

One major limiting factor in this study was sample size. Due to the level of effort necessary to acquire the IPO portfolio and portfolio green data, the scope of the study was limited. A larger sample size of more firms from a diverse set of industries could have yielded varied results. Additional limitations could be due to the limited industry set of the selected firms. Subject firms in this study focused on the same industry. Subjects from a variety of industries could have eliminated some degree of bias, if any was introduced due to this stated limitation.

Another consideration is market condition, related to firm IPO date. Market conditions could impact firm performance in a way that is unrelated to the defined greenness factor. Market conditions could be determined via S&P 500 returns on a cumulative monthly basis. By adding this factor, firm returns would be compared to market returns and adjusted accordingly, in order to account for any market cycle changes or irregularities. It is plausible that by incorporating this fourth factor into the study, the results could be entirely different.

As for possibilities of future study, there is certainly a need for more research in this particular area. As stated previously, there have been numerous studies attempting to relate sustainable practices to increased financial performance, in a broader sense. Identifying the key “shock event” as IPO date, as done in this study, has not received as much attention. One particularly interesting direction of a future study could entail using a different metric to determine greenness, as opposed to individual property certifications. While difficult to quantify, firm sustainability initiatives could be an alternative way to define greenness. Building performance could also be used. This can even be integrated into the framework of the IPO “shock event” if the initiative occurred prior to IPO date. As sustainability and corporate social responsibility gain traction in the world of real estate and finance, data transparency and public accessibility will evolve alongside and become a priority, making future studies more reliable and plentiful.

Appendix A: Regression Inputs

REIT Name	IPO Date	IPO Date (MONTH)	1-yr Cum. Return	1-mt Cum. Return	Percent Green	Asset Value at IPO Year
APLE	5/18/15	6/1/15	-0.055310999	-0.034162948	1.73%	\$ 3,722,775,000
BHR	4/24/18	5/1/18	-1.508052744	-0.093557583	7.69%	\$ 1,636,487,000
CPLG	5/31/18	6/1/18	-2.54226762	-0.340288042	0.64%	\$ 2,455,000,000
DRH	5/26/05	6/1/05	-2.750823765	-0.15135013	0.00%	\$ 966,012,282
HT	1/21/99	2/1/99	-3.673299219	-0.410597269	0.00%	\$ 56,382,000
HST	4/18/06	5/1/06	-3.527360978	-0.250582916	13.49%	\$ 11,808,000,000
PK	1/4/17	2/1/17	-0.597300811	-0.024481517	3.70%	\$ 9,714,000,000
RLJ	5/11/11	6/1/11	0.028821193	-0.003986634	0.71%	\$ 3,290,018,000
RHP	10/1/12	10/1/12	0.082347623	-0.170616288	0.00%	\$ 2,543,139,000
SVC	9/25/19	10/1/19	-1.753506336	-0.175137346	2.44%	\$ 9,033,967,000
SOHO	4/22/13	5/1/13	0.491219136	-0.011299141	0.00%	\$ 94,232,244
INN	2/9/11	3/1/11	-0.053390249	0.130886919	0.00%	\$ 554,004,994
SHO	10/21/04	11/1/04	-1.965271323	-0.019689465	5.00%	\$ 1,253,745,000
XHR	2/4/15	3/1/15	-0.391028153	-0.031178119	4.17%	\$ 2,955,751,000

Bibliography

- Apple Hospitality REIT Inc. (2015). Annual Report, 2015.
- Braemar Hospitality Trust. (2018). Annual Report, 2018.
- Coën, A., Lecomte, P., & Abdelmoula, D. (2018). *The Financial Performance of Green Reits Revisited*. <https://doi.org/10.1080/10835547.2018.12090009>.
- Corepoint Lodging. (2018). Annual Report, 2018.
- DiamondRock Hospitality Company. (2005). Annual Report, 2005.
- Eichholtz, P., Kok, N., & Yonder, E. (2012). *Portfolio greenness and the financial performance of REITs*.
- Hersha Hospitality Trust. (1999). Annual Report, 1999.
- Holger, D., & Ochoa, F. (2021, March 05). Fund managers brace for Europe's new ANTI-GREENWASHING RULES. Retrieved March 07, 2021, from <https://www.wsj.com/articles/fund-managers-brace-for-europes-new-anti-greenwashing-rules-11614960383>
- Host Hotels and Resorts Inc. (2006). Annual Report, 2006.
- Kenneth R. French - Fama/French Factors. Retrieved March 28, 2021, from https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/f-f_factors.html
- NAREIT. REIT Directory. Retrieved from <https://www.reit.com>
- Park Hotels and Resorts. (2017). Annual Report, 2017.
- REITS and Environmental Stewardship*. ESG Environmental | Nareit. <https://www.reit.com/investing/reits-sustainability/reits-and-environmental-stewardship>.
- RLJ Lodging Trust. (2011). Annual Report, 2011.
- Ryman Hospitality Properties. (2012). Annual Report, 2012.
- Sah, V., Miller, N. G., & Ghosh, B. (2013, May). *Are Green REITs Valued More?*
- Service Properties Trust. (2019). Annual Report, 2019.
- Sotherly Hotel Inc. (2013). Annual Report, 2013.

Summit Hotel Properties. (2011). Annual Report, 2011.

Sunstone Hotel Investors. (2004). Annual Report, 2004.

S&P Global Market Intelligence. Green property data. Retrieved from <https://platform.marketintelligence.spglobal.com/web/client?auth=inherit&ignoreIDMContext=1#news/home>

The legal and business case for LEED certification in the POST-RECESSION WORLD. (n.d.). Retrieved March 07, 2021, from https://www.americanbar.org/groups/business_law/publications/blt/2011/01/03_mergens/

Tolksdorf, Peterson, Ulferts. (2012). *Perspectives on the LEED System as a Green Certification Standard*.

Turezyn, C. (2016). *U.S. REITS and Sustainability: A Returns Analysis*.

Vierra, S. (2016, February 8). *Resource Pages*. WBDG. <https://www.wbdg.org/resources/green-building-standards-and-certification-systems>.

Vierra, S. (2019, May 08). Green building standards and certification systems. Retrieved March 07, 2021, from <https://www.wbdg.org/resources/green-building-standards-and-certification-systems>

Wharton School of Business. *Wharton Research Data Services*. Retrieved from <https://wrds-web.wharton.upenn.edu/wrds/>

Xenia Hotels and Resorts Inc. (2015). Annual Report, 2015.

Yahoo Finance. Stock Prices. Retrieved from <https://finance.yahoo.com>

Academic Vita

Chase BisignaroEducation

The Pennsylvania State University, Schreyer Honors College
Bachelor of Science, Accounting
Undergraduate Certificate, Real Estate Analysis and Development

*University Park, PA
May 2021*

Professional Experience

Paramount Realty USA

Business Development Intern

*New York, NY (remote)
Aug. 2020 - Jan. 2021*

- Initiated a broad-based business development campaign, targeting brokers across the United States, focusing on individual residential and commercial properties
- Implemented business development strategies, including direct solicitation and correspondence
- Built-out a potential lead database with broker contacts from across the United States

PricewaterhouseCoopers

Assurance Intern

*McLean, VA (remote)
Jul. 2020 - Jul. 2020*

- Engaged with innovative digital tools; Alteryx, Tableau, and UI Path, gaining insight as to how to use these tools to present data and automate work.
- Advanced relationships across the firm's lines of service, while engaging in conversations surrounding the firm's efforts and diversity and inclusion.
- Leveraged online trainings in agile project management and data-driven storytelling, while earning a badge in human-centered design.

Marriott International

Global Finance Intern

*Bethesda, MD
Jun. 2019 - Aug. 2019*

- Streamlined existing tools and designed slide decks contributing to an internal consulting project for an overarching global corporate financial process alignment effort.
- Facilitated conversations among managers from various disciplines within the organization, while recording insights and building strong rapport across corporate departments.
- Pursued supplementary learning opportunities, including attending speaking engagements, initiating networking coffee chats, and providing insight in focus groups.