

FIRM PERFORMANCE EXAMINATION OF LODGING REITS AND  
SPECIALTY REITS COMPANIES

A Project Paper

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## ABSTRACT

This study investigated the performance of lodging and specialty real estate investment trusts (REITs) over a 11-year period from January 2007 to December 2017. The results of the study indicated that, overall, specialty REITs companies outperformed the market portfolio, which was not the case for lodging REITs' performance compared to the market portfolio. In terms of comparison with specialty REITs, lodging REITs performed significantly differently based on firm size, profitability, and leverage ratio.

## BIOGRAPHICAL SKETCH

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To my dearest family.

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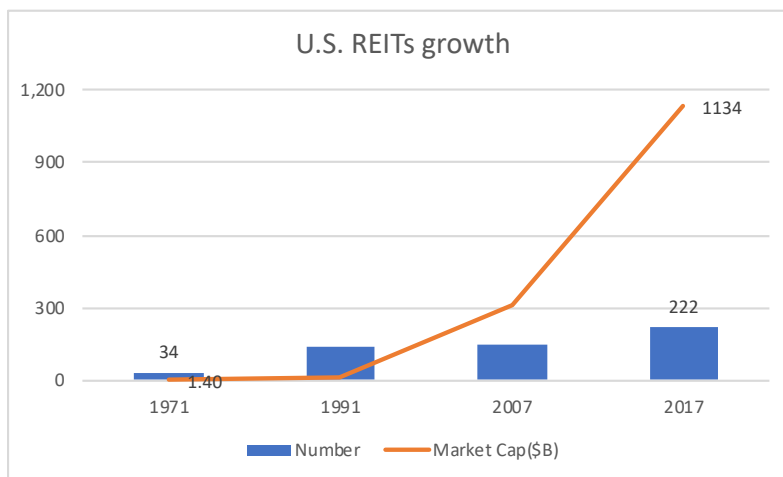
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## CHAPTER 1

### INTRODUCTION

The public REIT market has undergone rapid, almost exponential, growth throughout the last four decades, which have seen the industry expand from 34 publicly traded REITs with a market capitalization of \$1.4 billion in 1971, to 152 with a market capitalization in excess of \$312 billion at the end of 2007. REITs deserve attention not only because they are the third largest asset class available to investors (behind bonds and stocks) (Imperiale, 2002) but also because they can help investors to better understand the true value of hotel properties and related investment trends.

Figure 1 U.S. REITs Growth



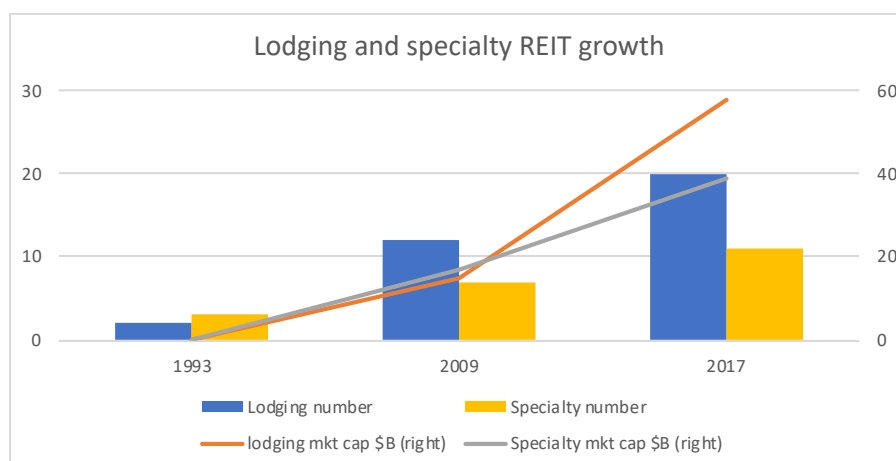
Hotels constitute a unique investment asset class as they operate both housing and retail activities (including food and beverage services, accommodation, health spas, banqueting facilities, and recreational amenities) inside their properties. Hotel REITs, also known as lodging REITS, focus on developing, managing, acquiring, or financing hotels and hospitality-related properties, which



can range from budget inns located on the side of forgotten highways and state roads to five-diamond prestige resorts in the entertainment, gambling, and population capitals of the world, such as those owned by Marriott International, Inc. In contrast, specialty REITs focus on properties that do not fit neatly within conventional REIT sectors. Examples of properties owned by specialty REITs might include movie theatres, casinos, farmland, and outdoor advertising sites.

Lodging REITs, one of the most popular REITs sectors, existed as early as 1969; however, it has attracted more attention since the 1990s as the sector grew significantly both in terms of numbers and market value at that time. In 1993, there were 2 lodging REITs companies, with market capitalization values of \$0.1 billion, trading publicly; by 2017, more than 20 lodging REITs companies, with capitalization values of \$58 billion, were traded. Specialty REITs as a sector has also made an increasing contribution to the equity REIT market; this sector increased from 3 companies in 1993 to 11 companies, with market values adding to almost \$40 billion, in 2017 (Figure 2).

Figure 2 Lodging and Specialty REIT Growth



REITs overall are companies that are publicly traded on the major US stock exchanges, the New York Stock Exchange (NYSE) and the National Association of Securities Dealers Automated Quotation (NASDAQ). In order to become established and operate as a REIT company, a firm must follow certain regulations and meet set criteria. These requirements include restrictions and requirements in terms of organization, operation, income generation, income distribution, and compliance (Table 1).

Table 1 Real Estate Investment Trust Legal Requirements

Requirement	Specific stipulation
Organization	<p>Must be formed in one of the 50 states or the District of Columbia as an entity taxable for federal purposes as a corporation.</p> <p>Must be governed by directors or trustees and its shares must be transferable.</p> <p>Beginning with its second taxable year, a REIT must meet two ownership tests: it must have at least 100 shareholders (the 100 Shareholder Test) and five or fewer individuals cannot own more than 50 percent of the value of the REIT's stock during the last half of its taxable year (the 5/50 Test).</p>
Operation	<p>At least 75 percent of the REIT's annual gross income must be from real estate-related income such as rents from real property and interest on obligations secured by mortgages on real property.</p> <p>An additional 20 percent of the REIT's gross income must be from the above-listed sources or other forms of income such as dividends and interest from non-real estate sources (like bank deposit interest).</p> <p>No more than 5% of the value of assets may comprise securities of any one issuer if the securities are not includable under the 75% test.</p>
Income generation	<p>At least 75% of gross income must be derived from rents, interest on obligations secured by mortgages, gains from the sales of certain assets, or income attributable to investments in other REITs.</p> <p>No more than 30% of the REIT's gross income can be derived from the sale or disposition of stock or securities held for less than six months or real property held for less than four years except, for property involuntarily converted or foreclosed on.</p>
Income distribution	Distribute at least 90 percent of their taxable income to their shareholders annually (this was changed by the REIT modernization Act of 1999 from 95%).
Compliance	In order to qualify as a REIT, a company must make a REIT election by filing an income tax return on Form 1120-REIT.

The two types of REITs generally available in the market are publicly traded REITs and non-publicly traded REITs. Publicly traded REITs include equity REITs and mortgage REITs, while non-publicly traded REITs refers to both public non-listed REITs and private REITs (Table 2). Equity REITs represent the most common type of REIT firms in the U.S. market; such firms

comprise 94% of all REITs market capitalizations and 81.53% of all REITs companies by number (Figure 3 and 4).

Table 2 Real Estate Investment Trust Types

Publicly traded REITs	Equity REITs	A company that owns or operates income-producing real estate.
	Mortgage REITs	Mortgage REITs provide financing for income-producing real estate by purchasing or originating mortgages and mortgage-backed securities and earning income from the interest on these investments.
Non-publicly traded REITs	Public Non-listed REITs	Companies that registered with the SEC but do not trade on national stock exchanges.
	Private REITs	Private REITs are offerings that are exempt from SEC registration and whose shares do not trade on national stock exchanges.

Figure 3 Equity REITs and Mortgage REITs Market Capitalization

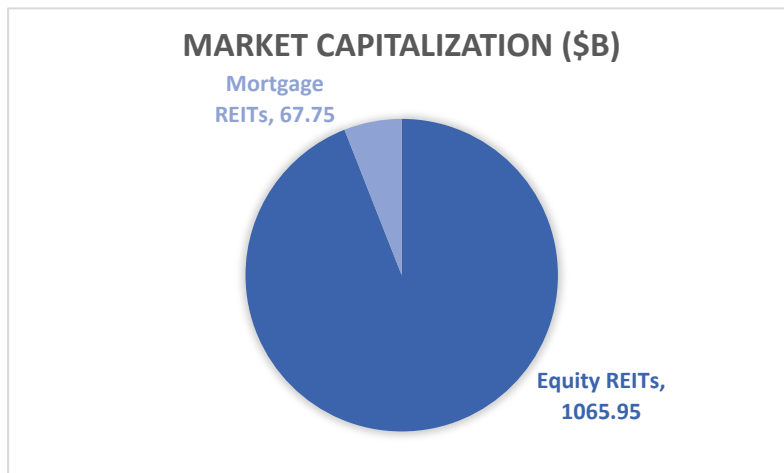
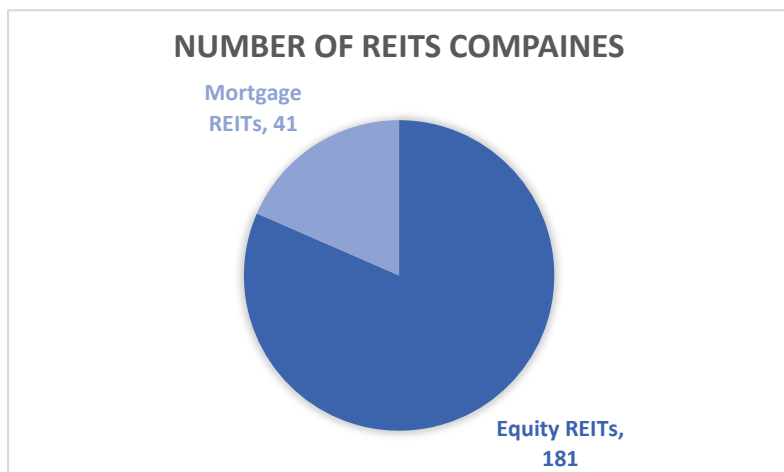


Figure 4 Equity REITs and Mortgage REITs Numbers



The different REITs sectors had gained different levels of development by 2017 (Table 3). Since the 1990s, the lodging REIT subsector has been one of the most significant burgeoning subsectors of the equity REIT market. As REITs are important investment objectives, further research into this area is valuable, and although previous studies have examined the performance of lodging REITs, little research has been conducted to compare the performance of lodging and specialty REITs, despite the fact that, as lodging REITs and specialty REITs have similar numbers of publicly traded companies and market value, comparison between them is both possible and informative (Figures 5 & 6). Most REITs research articles thus far have also focused on the last four decades of REITs development, and as such, have paid little attention to the post-financial-crisis period from 2007. Hence, this article aims to conduct such a comparison over the period from January 2007 to December 2017.

In doing this, this study addresses two questions: 1) Did lodging REITs overperform or underperform market benchmarks during the selected time period? and 2) Did lodging REITs overperform or underperform specialty REITs during the selected time period? In order to answer these questions, several methods, including Capital Asset Pricing Model (CAPM) and a Free Cash Flow (FCF) model, are utilized.

Figure 5 Lodging and Specialty REITs Market Capitalization

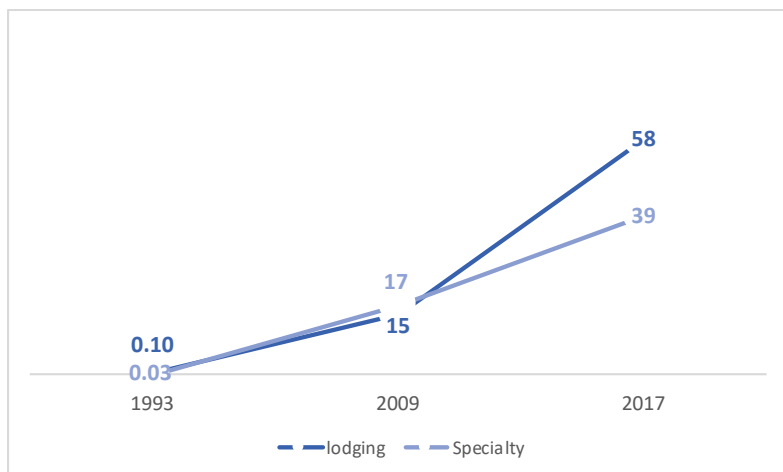


Figure 6 Lodging and Specialty REITs Numbers

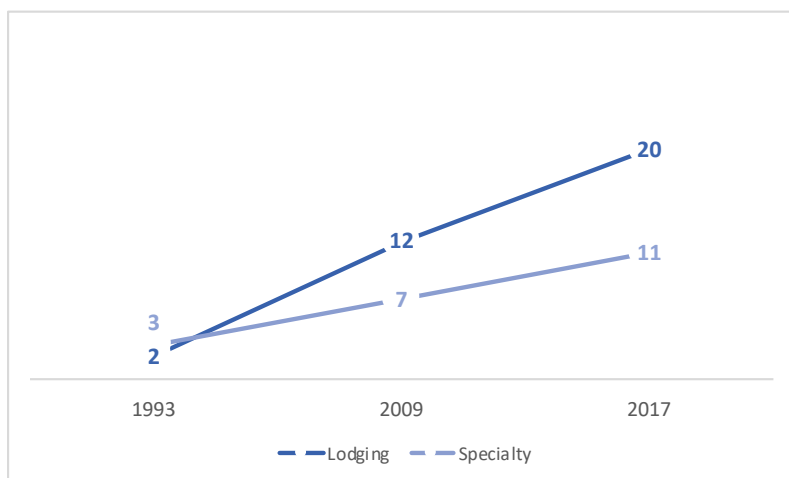


Table 3 REITs By Property Type and Percent of Market Capitalization

Type of REIT	Number of REITs Companies	Equity Market Capitalization (\$B)
<b>Equity REITs</b>	<b>181</b>	<b>1,065.95</b>
Office	24	105.08
Industrial	12	74.05
Retail	33	189.78
Shopping Centers	18	60.84
Regional Malls	7	92.14
Free Standing	8	36.79
Residential	22	146.54
Apartments	15	111.83
Manufactured Homes	3	15.58
Single Family Homes	4	19.13
Diversified	18	63.70
Lodging/Resorts	20	57.72
Self Storage	6	57.94
Health Care	19	98.65
Timber	4	33.18
Infrastructure	7	129.55
Data Center	5	70.67
Specialty	11	39.09
<b>Mortgage REITs</b>	<b>41</b>	<b>67.75</b>
Home Financing	24	48.82
Commercial Financing	17	18.93
<b>REIT Industry Total</b>	<b>222</b>	<b>1,133.70</b>

The results of this research have significant practical implications for managers of and investors in U.S. listed real estate firms. The findings of this research should assist managers within the lodging and specialty REITs sector in terms of optimizing the multiple dimensions of their capital structure choices to improve firm value. With regard to the different characteristics of firms that affect such outcomes, institutional managers can thus potentially adjust firm ratios to achieve higher returns. The findings also provide guidance for investors in U.S. real estate firms in terms of drawing inferences about firm performance from firm characteristics when selecting lodging and specialty REITs. Industry averages and standard deviation can also help investors develop a firmer basic understanding of industry performance. Overall, these conclusions offer substantial benefits for financial decisionmakers, promoting well-informed investment choices.

## CHAPTER 2

### LITERATURE REVIEW

Investing in a lodging property involves not only investment in the real property but also in the operation of the business. The performance of lodging REITs is thus a pressing research concern because they are the most volatile type of REIT (Ro and Ziobrowski, 2009). Rushmore, Ciraldo, and Tarras (2002) went so far as to claim that investing in the hotel industry is a high-risk use of capital. Highlighting the volatile and cyclical nature of the lodging industry, DeRoos (1997) noted the importance of examining lodging REITs, as did Kim, Mattila, and Gu (2002), who suggested that research focusing on the performance of hotel REITs would lead to a better understanding of the performance of lodging assets as investment tools, ultimately providing information for prudent investors. Manning et al. (2015) also suggested that the differences and similarities between hotel/lodging real estate and “core real estate” investments such as residential, office, industrial, and retail investments, should be looked at more closely. Mooradian and Yang (2001) found that relatively small hotel REITs enjoyed significantly higher excess market values than their non-REIT counterparts of similar sizes, suggesting that there may be greater growth opportunities for these REITs, however, while Howton, Lee, and Luo (2012) stated that REIT ownership favorably impacted on property performance in that REIT-owned hotels displayed higher profit margins than other lodging properties.

Lodging REITs have received some research attention in terms of their performance against REITs in other sectors. Using the Jensen Index to measure performance, Kim, Mattila, and Gu (2002) found that lodging REITs underperformed REITs in the office, industrial, and diversified sectors as well as underperforming in terms of stock performance relative to REITs in the office, industrial,

residential, and diversified sectors. Jackson (2008) further showed that lodging REITs underperformed their counterparts in other sectors, including retail and specialty REITs, while Newell (2006) found that REITs in non-traditional real estate sectors such as healthcare, self-storage, and specialty REITS, were less correlated with equity REITs performance than the traditional REIT sectors, and thus displayed lower risk levels.

Moreover, recent research has demonstrated a strong relationship between dividend policy and operating performance in overinvesting firms. Koch and Shenoy (1999) found that dividend policy provides more predictive information for overinvesting firms than for value-maximizing firms, while Mooradian and Yang (2001) concluded that non-REIT companies are, on average, more heavily leveraged and pay lower dividends than those in the REIT subsample. Nobel and Tarhan (1998) demonstrated improved operating performance for over-investing firms making larger distributions of cash to stockholders, and when investigating financial market liquidity of REITs, Danielsen (2014) found evidence to support the idea that REITs that chose to overinvest in audit services generated financial disclosures (annual reports) that were viewed as more credible by the marketplace. These findings may be applicable to other REITs, including those in the hotel industry, making it important to identify whether the dividend policy of REITs, together with their more limited free cash flows, mitigates any tendency toward overinvestment in such industries.



## CHAPTER 3

### DATA AND METHODOLOGY

The empirical analysis of this investigation included all firms reported on the SNL Financial database classified as "lodging REITs" and "Specialty REITs" in the listed equity REITs category. Previous research has produced contradictory conclusions about lodging REITs' performance. When comparing market benchmarks with lodging REITs companies' actual performance, both overperformance (Kuble, Walther, & Wurtzebach, 1986) and underperformance (Wang, Erickson, Gau, & Chan, 1997) have been found from different research perspectives. Based on these arguments, it is reasonable to hypothesize that lodging REITs companies will be seen to have performed similarly to market benchmarks during the period January 2007 to December 2017. On examine lodging REITs' performance relative to market benchmarks, however, the results suggest that no firm conclusions can be reached in terms of evaluating lodging REITs' performance. According to Jackson (2008), lodging REITs underperform their counterparts from other sectors, such as retail and specialty REITs. Thus, hypothesis two was developed to conduct an analytic comparison between lodging REITs and the specialty REITs sector.

#### ***Hypothesis One***

*H1*: Lodging and specialty REITs companies performed similarly to market benchmarks during the period January 2007 to December 2017.

There are three common indices used for pricing individual securities or portfolios. These are the Sharp index (Sharp, 1966), the Treynor index (Treynor, 1965), and the Jensen index (Jensen, 1968). These are based on the Capital Asset Pricing Model (CAPM), and they are crucial in terms

of evaluating returns from stock. CAPM theory assumes that a portfolio's expected price is comprised of the current risk-free rate plus systematic risk multiplied by the market risk premium, which is the expected market return minus the risk-free rate. Of the three common indices, only the Jensen index captures relative performance based on the security market line (SML). Thus, theoretically, the Jensen index can be formulated as follows:

$$(R_{i,t} - R_{f,t}) = \alpha_i + \beta_i * (R_{m,t} - R_{f,t}) + \varepsilon_{i,t}$$

where  $R_{i,t}$  is the return on portfolio  $i$  at time  $t$ ;  $R_{f,t}$  is the return on the risk-free assets at time  $t$ ;  $\alpha_i$  is the Jensen index measure of performance of portfolio  $i$ ;  $\beta_i$  is the systematic risk for portfolio  $i$ ;  $R_{m,t}$  is the market return at time  $t$ ; and  $\varepsilon_{i,t}$  is the random error with an expected value of zero ( $E(\varepsilon_{i,t}) = 0$ ). In this case, the portfolio return minus the risk-free asset return,  $(R_{i,t} - R_{f,t})$ , also known as the risk premium, becomes the dependent variable, while the market premium or the difference between the expected market rate of return and the risk-free rate of return,  $(R_{m,t} - R_{f,t})$ , is the independent variable. Using the S&P 500 as the market return and the U.S. 3 months treasury bill as the risk-free rate of return also causes the Jensen index formula to become more plausible. Variable definitions are given in Table 4.

Due to the differing internal nature of REIT types, REITs sectors are influenced by different types of industry events, macroeconomic policies, and economic downturns. For example, lodging REITs were found to be the only equity REIT sector affected by periodically collapsing bubbles (Payne & Waters, 2007). Thus, it is plausible to hypothesize negative lodging REITs performance as compared with other equity REITs such as specialty REITs.

## ***Hypothesis Two***

*H2:* Lodging REITs will have performed less well than specialty REITs during the period January 2007 to December 2017.

As real estate investment trusts have less free cash flow, they are less likely to suffer from agency problems related to such free cash flow. To examine the free cash flow hypothesis based on Lehn and Poulsen (1989) and Lang, Stulz, and Walkling (1991) a variable FCF was thus created to capture the free cash flow for a company.

$$\text{Free Cash Flow (FCF)} = \text{EBITDA} - \text{TAX} - \text{INTEXP} - \text{TOTDIV}$$

FCF measures post-tax cash flow not distributed to security-holders as either interest or dividend payments. It resembles the concept of funds from the operation of REITs, where depreciation and amortization expenses are considered to be part of the free cash flow and are included in FCF. This definition is based on the assumption that depreciation and amortization expenses are at the managers' discretion. As part of the further analysis, FCF is further weighted by the company's total assets, given as  $\text{FCF/A} = \text{Free Cash Flow/Total Assets}$ , to achieve asset-adjusted goals. The variable definitions are given in Table 5.

$$\text{Asset-adjusted FCF: } \text{FCF/A} = \text{Free Cash Flow/Total Assets}$$

These variables were used as independent variables in ordinary least square models to examine the differences between hotel and specialty REIT firms' performance. Any differences in the means of the variables were also examined by means of t-tests.

Table 4 Variable Definition of Hypothesis 1

Dependent Variable	Definition	Resource
Risk Premium	Portfolio return less risk-free asset return	Portfolio return from SNL Risk-free asset return from Federal Reserve Bank of St. Louis
Explanatory Variable	Definition	Resource
Market Premium	Expected market rate of return less risk-free rate of return	Both from Federal Reserve Bank of St. Louis

Table 5 Variable Definition of Hypothesis 2

Variable	Definition	Resource
REIT	Dummy variable, 1= Hotel REIT and 0 = Specialty REIT	SNL
Total Assets	Total assest (in thousand dollars)	
Assets Growth	Annual rate of change in total assets in the previous year	
Net Income	Annual net income (in thousand dollars)	
EBITDA	Annual earnings before interest, taxes, depreciation and amortization expenses (in thousand dollars)	
EBITDA/A	Annual EBITDA, adjusted by total assets	
ROA	Return on assets	
ROE	Return on equity	
Leverage	Ratio of total liabilities to total assets	
Debt Coverage	Debt coverage ratio, EBITDA/INTEXP	
Total Liability	Total Liabilities	
Total Debt/A	Total debt, adjusted by total assets	
Short-term Debt Ratio	Ratio of short-term to total debt	
Interest Expenses/A	Total interest expenses, adjusted by total assets	
Depreciation/A	Annual depreciation and amortization, adjusted by total assets	
Total Dividends	Total dividends paid in a fiscal year	
FCF/A	Free cash flow, adjusted by total assets. It is derived as annual EBITDA net of taxes, interest expenses, and total dividends	

## CHAPTER 4

### EMPIRICAL RESULT

#### *Hypothesis One*

Table 6 Descriptive Statistics of return January 2007 – December 2017

Sector	N	Mean	Std Dev	Minimum	Maximum
Lodging REIT	1092	3.8%	13.1%	-79.2%	98.1%
Specialty REIT	856	1.6%	12.3%	-96.8%	72.1%
S&P 500 Index	44	1.8%	7.8%	-22.6%	15.2%
90-Day Treasuries	44	0.7%	1.3%	0.0%	5.0%

Table 7 Performance of REIT Sectors Relative to the S&P 500 Using Jensen Index (January 2007 – December 2017)

Dependent Variable	$\alpha$ (coeff)	$\beta$ (coeff)	R <sup>2</sup>	P Value
Lodging REIT	0.33	-0.23	0.002	0.67
Specialty REIT	0.01	0.15	0.21	0.02**

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

A statistically significant and positive  $\alpha$  implies that the REIT overperformed the market portfolio, while a statistically significant and negative  $\alpha$  implies that the REIT underperformed the market portfolio. A  $\beta$  of one implies that that particular REIT sector has a risk level approximately the same as the market portfolio; a  $\beta$  greater than one thus implies that the REIT sector was riskier than the market portfolio, and a  $\beta$  less than one implies that the REIT sector was less risky than the market portfolio.

From the table above, differences in the performance of lodging REITs are not statistically significant at the 10% level, while specialty REITs' performance does appear to have a significant statistical correlation at the 5% level. This indicates that specialty REITs companies outperformed the market portfolio, while there is no indication that lodging REITs performed any better than the market portfolio. In terms of risk level, specialty REITs' figures indicate that they are less risky as compared to market benchmarks, while lodging REITs have a negative correlation in terms of risk. Although small, the positive  $\alpha$  also indicates higher returns than market benchmarks. In the period under investigation, specialty REITs performed better than S&P 500 average returns; thus, considering trading volume and stock price growth, specialty REITs are likely to warrant increased investment in the long-term.

The non-significant correlation in the lodging REITs sector may be due to several reasons: inappropriate time period and improper market benchmarks are the most likely. From 2007 to 2017, the lodging industry had little opportunity to fully recover from the influence of the financial crisis, and this will have indirectly impacted the lodging REIT subsector, as, compared to other types of equity REITs, lodging REITs appear to be more dependent on the overall performance of the economy (Leonard, 2009). This is because both business and vacation travel may decline during periods of economic downturn, which negatively impacts on the revenue of the hotel industry and leads to fluctuation in returns. Examination of the long-term performance of lodging REITs, over more than two decades, could thus help to achieve a more accurate and solid conclusion. Additionally, a single market benchmark, here the S&P 500, cannot represent the most ideal market portfolio. Different indices should be considered for use in further research, such as the NASDAQ, the Dow Jones Industrial Average, and the Russell 3000 Index.

### ***Hypothesis Two***

T-tests were conducted on the collected variables to examine differences between the two types of REIT firms (Table 8). Three main aspects in which hotel REITs significantly differ from specialty REITs emerged: firm size, profitability, and leverage ratio.

Table 8 Descriptive Statistics and t-Tests for the Means of hotel and specialty REITs Companies

Variables	Hotel REIT			Specialty REIT			t-Stat
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Total Assets	1114	3416547	4423993	884	4255676	6095714	3.6***
Assets Growth	1094	0.10	0.50	850	0.18	0.63	3.0***
Net Income	1113	28939	108389	878	28688	99130	-0.05
EBITDA	1109	82602	133948	867	101855	162881	2.9***
EBITDA/A	1114	0.02	0.02	884	0.02	0.06	-4.0***
ROA	1098	0.02	0.10	858	0.00	0.20	-3.2***
ROE	1005	0.02	0.46	812	0.06	0.30	1.7*
Leverage	1114	0.63	0.29	884	0.54	0.25	-8.1***
Debt Coverage	1102	4.52	5.60	812	4.22	12.82	-0.7
Total Liabilities	1114	2121974	3330951	884	2729514	2449354	3.6***
Total Debt/A	1114	0.51	0.23	884	0.44	0.23	-7.4***
Short-term Debt Ratio	763	0.12	0.18	616	0.13	0.26	0.4
Interest Expenses/A	1094	0.03	0.02	850	0.03	0.06	-2.1**
Depreciation/A	1114	0.18	0.16	884	0.18	0.32	0.1
Total Dividends Paid	1113	0.28	0.76	879	0.35	0.66	2.5**
FCF/A	1114	0.00	0.02	880	-0.01	0.06	-2.1**

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

#### a. Firm size

Examined in terms of total assets and asset growth, firm size shows significant differences between lodging REITs and specialty REITs. The average total assets of a hotel REITs company were \$3,416 million, with a standard deviation of \$4,423 million; for a specialty REITs company, the average total assets were \$4,255 million, with a relatively large standard deviation of \$6,095 million. In terms of asset growth, the average asset growth of a hotel REITs company was 0.10 with a standard deviation of 0.49, while a specialty REITs company's average asset growth was 0.17 with a standard deviation of 0.62. These two indicators are used to measure firm size, and in

this instance, they both show the significant differences between these types of REITs. Specialty REITs firms were larger both in terms of total assets and with regard to asset growth than hotel REITs companies in the period 2007 to 2017.

Although specialty REITs firms appear to offer more growth potential, they also show larger volatility. In the early 1990s, thanks to the Revenue Reconciliation Act (1993) which removed certain barriers within REITs regulations, investment in REITs companies became more attractive especially to institutional investors such as mutual funds (Yobaccio, Rubens, & Ketcham, 1995; Crain, Cudd, & Brown, 2000), making them ideal for portfolio diversification (Giliberto, 1990; Ori, 1995). Thus, most lodging REITs companies went public during the 1990s, and after several years of development, they had become well-organized and highly operational investment opportunities by the period examined. However, most specialty REITs went public much later, around 2013 to 2015, which indicates that they had more advanced and higher assets in the period of 2013 to 2017, as well as higher volatility.

Additionally, unlike hotel REITs in the lodging industry, specialty REITs involve investments in several strands, including movie theatres, casinos, farmland, and outdoor advertising sites. Thus, when certain industries are influenced by macroeconomics and global significant events, it is more likely that specialty REITs will be affected.

#### b. Profitability

EBITDA, EBITDA/A, and ROA were selected as indicators to examine firm profitability. The two types of companies under investigation are at similar levels with respect to net income and return on equity, and not significantly different in terms of means. The average EBITDA of a hotel REITs company was \$82 million, with a standard deviation of \$133 million, while a specialty REITs



company's average EBITDA was \$101 million, with a relatively large standard deviation of \$162 million. In terms of EBITDA/A, the average EBITDA/A of a hotel REITs company was 0.02 with a standard deviation of 0.02, while the specialty REITs company's average EBITDA/A was 0.01 with a standard deviation of 0.05. In terms of ROA, the average ROA of a hotel REITs company was 2.49%, with a standard deviation of 0.09, while a specialty REITs company's average EBITDA/A was 0.22% with a standard deviation of 0.20. EBITDA, EBITDA/A, and ROA are all significantly different at the 1% level between these sectors.

Despite the high return volatility of all REIT property sectors (Imperiale, 2002; Mueller & Anikeeff, 2001), on a long-term basis, the overall performance of lodging REITs has been better than that of other REIT asset classes (Imperiale, 2002). The accounting return measure return on assets (ROA) shows that hotel REITs companies have significantly higher means than specialty REITs companies. After decades of development, lodging has attracted investment not only from institutions but also from individuals, and thus despite the relatively low level of ROA and ROE in the panel overall during the selected period, hotel REIT companies showed higher returns in this research, almost ten times the ROA of specialty REITs firms.

#### c. Leverage ratios

Leverage, liabilities, and total debt adjusted by assets are important measures used to evaluate leverage levels for hotel and specialty REITs firms; these were also significantly different, with lodging REITs companies being more highly leveraged.

The average leverage ratio of a hotel REITs company was 0.63, with a standard deviation of 0.28, while a specialty REITs company's average was 0.53 with a relatively smaller standard deviation of 0.25. With regard to total liability, the average total liability of hotel REITs was \$2,121 million

with a standard deviation of \$3,330 million, while the specialty REITs company average was \$2,729 million with a standard deviation of \$2,449 million. In terms of total debt adjusted by assets, the average for hotel REITs companies was 0.51 with a standard deviation of 0.23, while the specialty REITs company average was 0.43 with a standard deviation of 0.22. Leverage ratio, total liabilities, and total debt/assets were significant at the 1% level; however, the debt coverage was not statistically relevant.

## CHAPTER 5

### CONCLUSION

This study empirically evaluated firm performance in a sample of U.S. real estate investment trusts. Using CAPM and FCF/Asset models as measures of firm performance relative to market benchmarks, regression analysis was conducted to evaluate different sectors' comparative performance. In a detailed comparison with a market benchmark based on the S&P 500 returns for the period, specialty REITs companies overperformed the market portfolio between January 2007 and December 2017, while lodging REITs' performance did not show any significant statistical differences from the market portfolio. This suggest that specialty REITs can be considered as long-term investments, while lodging REITs companies perform differently to specialty REITs companies, having differing firm sizes, profitability, and leverage ratios. Investors should thus carefully consider these aspects when establishing their portfolios.

## CHAPTER 6

### STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

#### *Geographically limitations*

Although this study examined and compared the performance of lodging and specialty REITs, the sample selected was confined to the U.S. REITs market, and no other country was involved in this analysis. Future studies could thus collect data from major stock exchanges across the globe, as REITs emerged in Asia in 2001, with Japan and Singapore being market leaders in this area, and REITs were established in Europe in 2004. Cross-country regression analysis could thus offer additional interesting areas of exploration.

#### *Time period limitations*

Due to the ongoing effects of the global financial crisis and subsequent recovery, examining the links between the composition of capital structure and firm performance before and post crisis could be highly informative. In addition, comparison research within different categories in the REITs sector with the real estate and capital market cycle may produce interesting results over various time periods.

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