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Operational Attributes and Fund Performance: Preliminary Evidence from the J-REIT Market

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I. Introduction

The first Japanese Real estate investment trusts (J-REIT) began trading in 2001. Since then, the J-REIT market has witnessed rapid growth in size as well as trading volume. By December 2004 there were 15 J-REITS of which 14 were listed on the Tokyo Stock Exchange (TSE) and one listed on the Osaka Securities Exchange (OSE). In 2005 we expect the market to expand to at least 18 J-REITs. The Association for Real Estate Securitization (ARES) in Japan estimates the market to be at approximately 1.8 trillion yen. Yet, how have these funds fared over this short time span? Is there a difference in performance? And do differences in fund performance depend on the operational attributes of each fund? As the market in Japan is still in its infancy there is a void in the literature on J-REIT performance. The purpose of this paper is to fill this gap by providing preliminary empirical evidence on the Sharpe ratio and Jensen's alpha for ten J-REITs.

Unlike the J-REIT market, the US REIT market is relatively mature and an integral component in understanding the dynamics of the US the real estate market. Several papers have examined the performance of US REITs and real estate mutual funds yet the findings for the US market are mixed. An extensive overview of the literature on the performance of US REITs can be found in Han and Liang (1995). In an attempt to shed light on the discrepancies in the empirical literature, Han and Liang (1995) use various specifications for Jensen's alpha and find that US REIT returns are more or less consistent with the security

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market line. They also show the empirical results are sensitive to the time frame and factor index, thus partially accounting for the difference in results found in the literature. More recently, Lin and Yung (2004) look at US real estate mutual funds from 1993 to 2001 and examine performance using different variations of Jensen's alpha but do not find evidence of positive abnormal performance.

Although the REIT market is new to Japan, market analysts point towards several operational attributes as drivers of fund performance [Murata (2005) and *Real Estate Fund Review* (2005)]. We focus our attention on five of these operational attributes often mentioned in the literature: 1) the name value of the sponsor, 2) whether the fund includes a flagship building, 3) the concentration of holdings in Tokyo, 4) sponsorship structure, and 5) whether the funds asset allocation is diversified across different property types. The sponsor name is often found in the name of the fund itself. This signals a brand image so as to lure potential investors to the fund. Even more important, however, is the role that recognized sponsors have in attracting potential office building tenants. Regular tenants, translates to stable cash flows generated from rent and thus leads to greater operational efficiency of the buildings in the portfolio. Finally, recognized sponsors often have extensive business networks which they can use to their advantage in attracting potential clients as tenants. In short, this implies that there are potential benefits to having a recognized sponsor backing the fund.

A flagship building could also serve as an important attribute. The inclusion of a well known flagship building such as Otemachi First Square or Marunouchi Building will not only have a significant marketing effect when selling the fund, but also reduces the amount of effort needed to attract and maintain large companies as tenant clients. These buildings generally have steady rent cashflows and possibly create positive business externalities among the tenants of the building. This should imply a positive impact on the fund performance.

The number of business holdings in Tokyo is also thought to be an important attribute as Tokyo is the prime market for potential tenants due to the high level of economic activity. The number of sponsors can also have an impact on the performance of a fund.

Finally, funds can differ in their asset allocation of property holdings. For example, one fund could focus on office buildings and another on residential property or even provide a mix. We examine whether a simple asset allocation structure which concentrates on a single line of property improves fund performance. Thus we can observe whether investors value diversification across property types.

II. Performance Measures and Empirical Methodology

Two standard performance measures are obtained in this paper. The Sharpe Ratio is defined as the ratio of the excess return over the standard deviation of the fund returns, $(\bar{r}_p - \bar{r}_f)/\sigma_p$, where $\bar{r}_p$ is the average J-REIT return, $\bar{r}_f$ is the risk free rate and σ_p is the standard deviation of the J-REIT returns. For the purpose of this paper we approximated the excess return simply with the average return of each J-REIT, $\bar{r}_p / \bar{\mu}_p$.

In addition to the Sharpe ratio, we measure J-REIT performance using abnormal returns. We define the abnormal returns or Jensen's alpha, α_p, as

$$\alpha_p = \bar{r}_p - \left\{ \bar{r}_f + \beta_p (\bar{r}_M - \bar{r}_f) \right\}$$

where β_p is the beta of the J-REIT and $\bar{r}_M$ is the market index return. In this paper, we use the Nikkei 225 index as the benchmark market index return. The beta is estimated over the entire sample period. For example, for Nippon Building Fund we used 168 weeks of data. Jensen's alpha is then calculated for each quarter using the same in-sample Beta. The raw Beta is obtained as

$$\beta_p = \frac{Cov(\bar{r}_p - \bar{r}_f, \bar{r}_M - \bar{r}_f)}{Var(\bar{r}_M - \bar{r}_f)},$$

and then adjusted using the Merrill Lynch formula, $\beta_p{}^{ADJ} = \beta_p \times (2/3) + 1 \times (1/3)$. We examine 10 J-REITS in this study. Our sample is limited to only those J-REITS with historical price data which date back to the middle of 2004. Other J-REITS which began trading towards the end of 2004 were not included in the sample as they do not provide sufficient historical data. The J-REIT returns

are weekly log relative returns. Summary statistics for the J-REIT returns are presented in Table 1. Our longest time series was for Nippon Building Fund with 168 observations and shortest at 57 observations for Mori Trust. The average return tends to hover around zero for all ten funds.

We then estimate the Sharpe ratio and the abnormal returns (Jensen's alpha) using non-overlapping periods of 13 weeks. In other words, J-REIT performance is assessed on a quarterly basis. We have a maximum of ten non-overlapping quarters. The funds analyzed in the paper are Nippon Building Fund Inc. (NBF), Japan Real Estate Investment Corporation (JRE), Japan Retail Fund investment Corporation (JRF), ORIX JREIT Inc. (ORIX), Premier Investment Company (Premier), TOKYU REIT Inc. (T-REIT), Global One Real Estate Investment Corporation (GO), Nomura Real Estate Office Fund, Inc. (NRE), United Urban Investment Corporation (United) and MORI TRUST Sogo REIT, Inc. (MTR). A brief description of each fund is found in the appendix. In order to assess the importance of an attribute, we obtain the mean of the performance measure across all funds with the attribute and compare this to the mean performance measure of a separate sample of funds without the attribute. For example, we compare the mean of the Sharpe ratio of all funds with a flagship building with the mean Sharpe ratio of funds without a flagship building. We employ a Z-score to test whether the two means are statistically significant different from one another.

$$Z = \frac{\bar{\mu}_1 - \bar{\mu}_2}{\sqrt{\frac{(\sigma_1)^2}{n_1} + \frac{(\sigma_2)^2}{n_2}}}$$

where n_1, n_2 are the sample sizes, $\bar{\mu}_1$, $\bar{\mu}_2$ and σ_1, σ_2 are the means and the standard deviations of the two populations respectively.

In sum, the operational attribute categories we examined were, 1) sponsor's name value, 2) ownership of a well known flagship building, 3) concentration of holdings in Tokyo, 4) single sponsor, and 5) asset allocation in a single line of property as opposed to being diversified across different types of buildings. The

difference in the mean Sharpe ratio by operational attribute is given in Table 2. We find the mean differences are statistically significant at the ten percent level for three out of the five attributes. Name value of the sponsor, flagship building, and portfolio composition seem to contribute to the difference in performance. In Table 3, we similarly look at the mean difference in Jensen alphas by attribute. Portfolio composition and flagship building (marginally with p-value just above 10%) also play in important role in understanding the performance of the alphas. These results are consistent with the Sharpe ratio findings.

Unlike the Sharpe ratio, however, we find that single sponsorship is a significant attribute for alphas. And sponsor name value is a significant attribute when looking at the Sharpe ratio but not when using Jensen's alpha. However, in the more general context of sponsorship, we can say that both the Sharpe ratio and Jensen alpha findings are in agreement. Our findings suggest that sponsorship, whether it be name value or structure is an important attribute. And interestingly concentration of holdings in Tokyo does not seem to play an important role for both the Sharpe ratio or Jensen's alpha. In short, our preliminary findings show that funds which focus on a single line of property and invest in a flagship building perform relatively better than those funds without such operational attributes.

III. Conclusion

This paper examined the significance of operational attributes on J-REIT performance. Although our preliminary findings show that funds with attributes such as a flagship building and focused asset allocation structure have statistically superior performance over those funds without these attributes, this does not necessarily imply that funds should always try to adopt such attributes. This paper simply provides preliminary evidence indicating that J-REITs with a particular attribute have the potential to perform better than a similar fund without the attribute. Such potential opportunities can only be capitalized upon through proper and efficient operational management. As the J-REIT market matures, operational efficiency will be a key factor in driving fund value.

Ultimately, J-REIT funds should focus not only on the financials but should also strategically concentrate on improving their operational activity to improve cash flows generated from their property holdings. Future research will be directed towards linking productivity and efficiency of property holdings with operational cash flows and fund value.

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Appendix: Brief Description of J-REIT Sample

Nippon Building Fund Inc. (NBF)

NBF was one of the first REITs to list in Japan (September 10, 2001). The asset management is entrusted to Nippon Building Fund Management Ltd. (NBFM), which is owned 43% by Mitsui Fudosan Co. Ltd. and 35% by Sumitomo life Insurance Company and six other companies. NBF specializes in office buildings, mainly focusing on large-scale buildings in the Tokyo Central Business Districts, but is also trying to diversify in other Tokyo markets as well as regional cities. It is the largest J-REIT in total market capitalization and managed assets (Refer to NBF website, www.nbf-m.com/nbf/ for details).

Japan Real Estate Investment Corporation (JRE)

JRE was also listed on September 10, 2001. The asset management is entrusted to Japan Real Estate Asset Management Co.,Ltd., which is owned 36% by Mitsubishi Estate Co., Ltd, 27% by Tokio Marine and Fire Insurance Co., Ltd., 27% by Dai-ichi Mutual Life Insurance Co. and 10% by Mitsui & Co., Ltd. as of July 1, 2004. JRE also specializes in office buildings, mainly focusing on large-scale buildings in the Tokyo Central Business Districts, but is also trying to diversify in other Tokyo markets as well as in regional cities (Refer to JRE website, www.j-re.co.jp for details).

Japan Retail Fund investment Corporation (JRF)

JRF was listed on March 12, 2002. The asset management is entrusted to Mitsubishi Corp.-UBS Realty Inc., which is owned 51% by Mitsubishi Corporation and 49% by UBS AG. as of February 14, 2005. JRF specializes in retail properties such as shopping centers and urban commercial buildings. The property holdings are geographically well diversified with holdings in Tokyo to regional cities (Refer to JRF website, www.jrf-reit.com/english/index.html for details).

ORIX JREIT Inc. (ORIX)

ORIX was listed on June 12, 2002. The asset management is entrusted to ORIX Asset Management, which is 100% owned by ORIX Corporation. The fund is diversified across building types with about 80% in offices and the rest in non-office buildings including hotels, retails, residences, etc.. On the other hand, it focuses on property located in the Tokyo metropolitan area and on medium-sized property with total floor area from 3,000m^2 to 10,000m^2 (Refer to ORIX website, www.orixjreit.com/english/index.htm for details).

Premier Investment Company (Premier)

Premier was listed on September 10, 2002. The asset management is entrusted to Premier Reit Advisors Co.,Ltd., which is owned by Ken Corporation Ltd., Mitsui Trust Financial Group, The Nikko Building Co., Ltd., Mitsui Sumitomo Insurance Company, Limited and six other companies as of February 14, 2005. It specializes in offices and residences largely in the Tokyo area. Because Ken Corporation, as the main sponsoring company, mainly deals with luxury residential real estate in central Tokyo, it can be said that this REIT's unique feature and strength is its focus on residential properties (Refer to Premier website, www.pic-reit.co.jp/english/index.htm for details).

TOKYU REIT Inc. (T-REIT)

T-REIT was listed on TSE on September 10, 2003. The asset management is entrusted to Tokyu Real Estate Investment Management Inc., which is owned 60% by Tokyu Corporation and 40% by Tokyu Land Corporation. T-REIT focuses only on offices (60%) or retails (40%). It also limits its investment area only in the five central wards in Tokyo, which include Chiyoda, Chuo, Minato, Shibuya, Shinjuku and select areas along the Tokyu railroad. In fact, a large fraction of the property holdings in its portfolio are developed by Tokyu group. Therefore, it can be said that T-REIT is playing an important role in securitizing the properties located along the Tokyu railroad (Refer to T-REIT website, www.tokyu-reit.co.jp/eng/index.html for details).

Global One Real Estate Investment Corporation (GO)

GO was listed on September 25, 2003. The asset management is entrusted to Global Alliance Realty Co., Ltd., which is owned by Japan GMAC Commercial Mortgage, Kinki Nippon Railway Co., Ltd., Meiji Yasuda Life Insurance Company and 17 other companies. Go focuses on office properties. The portfolio started with only three offices; two in Tokyo and one in Nagoya. Since then, it purchased and sold one building. As a consequence the number of the holding properties remains at three. However, all three buildings are relatively large buildings with the total floor areas range from 27,000m² to 141,000m². One of the main buildings in the portfolio is Otemachi First Square (Refer to GO website, www.nre-of.co.jp/english/index.html for details).

Nomura Real Estate Office Fund, Inc. (NRE)

NRE was listed on October 31, 2004. The asset management is entrusted to Nomura Real Estate Asset Management Co., LTD., which is 100% owned by Nomura Fudosan Holdings. NRE invests in offices predominately in central Tokyo Central (Chiyoda, Chuo, Minato, Shinjuku, Shibuya and Shinagawa). The portfolio includes Shinjuku Nomura Building (Refer to NRE website, www.nre-of.co.jp/english/index.html for details).

United Urban Investment Corporation (United)

United was listed on May 31, 2004. The asset management is entrusted to Japan REIT Advisors Co., Ltd., which is owned 44% by Trinity Investment Trust L.L.C. 36% by Marubeni Corporation, 10% by Credit Suisse First Boston Principal Investments Ltd. Tokyo and some other companies. United's investment strategy is holding a well diversified portfolio. In fact, the uses of its properties include offices, retails, residences and others without significant imbalance. The properties are also geographically well diversified (Refer to United website, www.united-reit.co.jlp/main_frame.html for details).

MORI TRUST Sogo Reit, Inc. (MTR)

MRT was listed on September 30, 2004. The asset management is entrusted to MORI TRUST Asset management Co., Ltd., which is owned by MORI TRUST CO.,Ltd. and five other companies. MRT mainly focuses on offices but also invests in retails. Geographically, it also aims to concentrate its properties in Tokyo but also diversify into the surrounding Tokyo area and other major regional cities. The portfolio includes Hitachi Ltd. and Nissan Motor Co. headquarter buildings (Refer to MTR website, www.mt-reit.jp for details).

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Table 1 Summary Statistics of J-REIT Returns

	NBF	JRE	JRF	ORIX	Premier	T-REIT	GO	NRE	United	MTR
Number Observations	168	168	145	133	133	120	71	69	60	57
Average Return	0.001	0.000	0.001	0.001	0.001	0.001	0.000	0.002	-0.002	0.002
Variance	0.010	0.010	0.010	0.008	0.009	0.008	0.007	0.008	0.010	0.008
Skewness	-1.053	-1.575	-0.083	-0.743	0.189	0.235	-0.819	-0.257	-2.793	0.680
Kurtosis	6.530	7.538	7.590	4.072	6.449	8.221	0.625	4.096	13.869	0.995

Weekly log relative returns.

Table 2 Mean Difference in Sharpe's Ratio by Attribute

	Diff Mean	STD	Z	p-value
Sponsor Name Value	0.00101	0.00072	1.38830	4.13%
Flagship	0.00091	0.00093	0.98071	8.17%
Tokyo Concentration	-0.00030	0.00075	-0.39974	32.77%
Single Sponsor	-0.00035	0.00056	-0.61988	36.62%
Single or Mix	0.00132	0.00068	1.92739	1.35%

Diff Mean is the difference in the mean performance measure of funds with the attribute and without the attribute. Z is the Z-score testing for the difference in mean. p-value is for the Z-score against the null that Diff Mean is zero.

Table 3 Jensen's Alpha for J-REIT

	NBF	JRE	JRF	ORIX	Premier	T-REIT	GO	NRE	United	MTR
Alpha	0.0014	0.0009	0.0016	0.0008	0.0005	0.0014	-0.0007	0.0023	0.0004	0.0013
Average Return	0.0013	0.0008	0.0015	0.0007	0.0004	0.0013	-0.0008	0.0022	0.0004	0.0012
Adjusted Beta	0.3113	0.2382	0.2130	0.2569	0.3572	0.2457	0.5627	0.3369	0.1828	0.1959

All statistics calculated over the entire sample. Average return is for each J-REIT over the entire sample period. Adjusted Beta is the Merrill Lynch adjusted beta.

Table 4 Mean Difference in Jensen's Alpha by Attribute

	Diff Mean	STD	Z	p-value
Sponsor's Name Value	0.00005	0.00011	0.43408	16.61%
Flagship	0.00011	0.00013	0.82161	10.28%
Tokyo Concentration	0.00005	0.00011	0.41263	17.00%
Single Sponsor	0.00017	0.00008	2.07758	0.94%
Single or Mix	0.00012	0.00011	1.05541	7.28%

See Table 2.

J-REIT 市場のファンドパフォーマンスと資産運用属性に関する初期分析

＜ 要 約 ＞

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本論文は、日本の株式市場に上場されている 10 個の J-REIT のパフォーマンス評価を Sharpe Ratio および Jensen's Alpha を用いて行った。この実証研究を通して、ファンドパフォーマンスが各 J-REIT の所有ビルの特性、資産配分方針やスポンサー企業構成といった資産運用属性に対して、優位に働くことを示した。