Shariah Compliance in Real Estate Investment

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Abstract

This paper examines the cost of Shariah compliance in real estate investments by comparing synthetic Shariah compliant (SC) REIT portfolios with unconstrained US REIT portfolios, indexes and real estate mutual funds (REMF). The performance of the synthetic portfolios are compared with various benchmarks in both univariate and multi factor framework. Shariah compliance seems to create a return trade-off and less restrictive compliance requirements appear to provide better historical returns when SC portfolios are compared to broader indexes or REMFs in general. However, Shariah compliance does not mean that SC REIT portfolios necessarily under-perform relevant indexes when relevant risk factors are considered and when we allow for differing sensitivities to benchmark returns. Our simulation shows that the market weighted SC simulated REMFs dominate the conventional REMF and the average simulated annualized mean portfolio return for SC and SC-LR REMFs are higher than the historical REMF annualized mean return.

Introduction

The past decade has witnessed a rapid growth in Islamic banking and finance market making it one of the faster growing financial niche markets globally (Aggrawal and Yousef, 2000). Growing at a rate of 15% in mid-1990s (Abdul Hamid and Norizaton, 2001), Islamic banking is expected to be a dominant growth engine in finance and banking in this millennium. The United Kingdom Financial Services Authority estimated Islamic banking and finance market to be worth between US$200 billion to US$500 billion worldwide. Other sources estimate the Islamic finance market to be between USD250 billion and USD 1 trillion (Chow, 2006).

Current account surpluses in oil-producing countries are expected to exceed USD500 billion in 2006, and the Citigroup Global Wealth Management group estimates the current wealth of USD1.2 trillion in Middle Eastern countries to grow to USD1.8 billion by 2010. Islamic assets accounted for only 3% of total banking assets in Dubai in 2003,

and have grown to 14.7% in 2006. The growth escalated after 9/11 where there has been significant flight of capital originating from the Middle East and other Islamic nations to Europe, Asia and some of the Middle East countries.

The Royal Institution of Chartered Surveyors (RICS) published a report last year entitled "Shariah Property Investment: Developing an International Strategy" (RICS, 2005). The Report highlights the increasing significance of property as an investment vehicle for Shariah funds. The Report also indicated the favorability of United Kingdom as the venue for Shariah fund investment. About 85% of the respondents favored Europe compared to the USA (47%), Middle East or Gulf region (62%) and South East Asia (38%).

The flow of funds into Asia has increased substantially. Islamic real estate funds originating out of GCC in recent years amount to more than USD 1.8 billion (CIMB). See Table 1. The recent Global Asia Real Estate Fund launched by Global Investment House in Kuwait has a target fund size of USD 100 to 200 million. It will invest in China, India, Malaysia, Singapore and Pakistan (Chow, 2006). Industry estimates places the total value of Shariah compliant (SC) real estate fund managed out of Singapore to be SGD 2 billion with a potential market size of SGD 10 to 20 billion in SC real estate investments over next 5 to 10 years (Ibrahim, Ong and Parsa, 2006).

Apart from private real estate funds, an increasing interest is seen in Islamic REITs as a vehicle for Middle East funds. The first Islamic REIT guidelines were introduced by Malaysia[1] in November 2005, and Al'-Aqar KPJ healthcare REIT is the first Islamic REIT listed in Malaysia in August 2006[2]. A second Islamic REIT is likely to be launched by state-owned Permodalan Nasional Bhd (PNB), amounting to RM 1 billion. Another Islamic REIT is expected to list on the Dubai International Financial Exchange before the end of 2006.

[1] Malaysia is among the first country to engage in Islamic Banking in South East Asia.
[2] The Al'-Aquar KPJ REIT IPO raised RM180 million with an expected yield of 7% from a portfolio of hospitals. KPJ has the largest hospital network in Malaysia and has operations in Indonesia and Bangladesh. The Malaysian REIT market capitalization is RM2.5 billion as of August 2006, comprising Axis REIT, Starhill REIT, UOA REIT and Tower REIT.

The key distinction behind Islamic real estate funds and real estate investment trusts from their conventional counterparts is the adherence to Islamic or Shariah principles. Islamic investment is guided by two key principles. The first principle is to avoid the giving or taking of interest at all costs (Aggrawal and Yousef, 2000), while the second is avoid investment in ventures that are unethical. The restrictions on investment in unethical concerns are subject to two screens – sectoral and financial. Typically, a Shariah investment board, on advice from Shariah scholars, requires that any fund will not invest in companies whose primary business activities are in arms, alcohol, tobacco, pork, finance and insurance, gambling, biotechnology engaging in genetic and foetus experimentation and leisure/media. These are the sectoral screens.

Financial screens require that the debt/assets ratio does not exceeds 30%, interest income is less than 5% of gross revenue and accounts receivable and cash represent not more than 50% of total assets (source: www. 1st ethical.com). Furthermore, in strict compliance with Shariah principles the following investment methods and financial instruments will not be used – short selling, conventional fixed income instruments such as bonds, interest-based instruments/accounts and derivatives or warrants. By implication, any real estate investments should not be in properties that violate the screens. However, the interpretation of Shariah reservations is often subject to Shariah board judgment.

At this juncture, it is worth drawing some similarities and differences between socially responsible investment (SRI) and Shariah compliant investment (SCI). The motivation for SRI may be divided into two categories that are not mutually exclusive – subjective and objective motivations (Dupre, et al, 2003). Personal ethics usually underpin subjective motivations for SRI, where moral principles are applied for which there can be no compromise. In such a context, profitability and financial or social costs have no relevance. Objective motivations reflect apprehension or aversion to activities that have social and/or environmental costs, such as pollution, smoking, etc. Clearly, SCI are defined by religious beliefs and may be viewed as an ethical motivation. Nevertheless, SCI and SRI place various (different) constraints on the investment universe.

Research Question

With the requirements to adhere to certain Islamic principles, it is clear that a Shariah compliant (SC) investment or portfolio would be limited to a smaller opportunity set. The main research question that arises is: Would any SC investment from the restricted investment universe match the risk-adjusted return of an investment or portfolio of investments drawn from the unconstrained universe? Put differently, what is the cost of compliance, if any?

This question has been posed for socially responsible investing (Derwall, et al, 2005; de Graaf and Slager, 2006). There are two polar views. The first view is that socially responsible investment would yield a lower return since adherence to ethical standards translates into higher product prices, a competitive disadvantage and lower profitability (Walley and Whitehead, 1994). The alternative view is that improved social or environmental performance enhances company efficiency and/or generates new market opportunities (Porter and van der Linde, 1995).

The first reasoning holds for Shariah compliance in that price, competitive and profitability differences may accrue from adherence to Islamic principles. However, it is not clear how Shariah compliance may improve efficiency or create new opportunities relative to a non-constrained universe. If the universe for Islamic investment is defined differently, then there is, in theory, no inefficiency or loss in opportunities. At the property-investment level, there is a belief held by some investors that Shariah compliance leads to a poorer portfolio performance, even though there is no clear consensus view (Ibrahim, Ong and Parsa, 2006). In addition, a number of experts have pointed out that the current practice of Shariah compliance real estate investment involves a high opportunity cost. This mainly includes the time taken and process involved in the investment decision making. Nonetheless, the litmus test is in whether financial markets factor the financial consequences of Islamic principles into share prices.

The efficiency market hypothesis in conventional asset pricing theory suggests that portfolio returns are commensurate with the associate risk levels and that the optimal

portfolio is well diversified (diversifies away specific risk). Any imposed limit to diversification should result in sub-optimal portfolios, and consequently lower returns (Derwall, *et al*., 2005).

There are two main approaches in extant empirical investigation on socially responsible investment. One approach constructs optimal portfolios that comply with socially responsible screens and compares the constrained efficiency frontier with the unconstrained efficiency frontier (Dupre, et al, 2003; Geczy, Stambaugh and Levin, 2005). The second more commonly adopted approach is to empirically evaluate the historical of performance socially responsible funds (Geczy, Stambaugh and Levin, 2005; Bauer, *et al*., 2005) or indexes (Schroder, 2004). The latter approach typically tests for fund/index under- or out-performance using single or multi factor models.

Empirical socially responsible investment studies provide mixed conclusions. Bello (2000) finds that socially responsible mutual funds do not differ significantly from conventional funds in terms of asset characteristics and portfolio diversification. Bauer, Koedijk and Otten. (2005) examine international mutual funds, while Bauer, Otten and Tourani-Rad (2004) focus on Australian ethical funds, but both studies find no evidence of underperformance in socially responsible funds. In contrast, Derwall, *et al.*, (2005) find evidence of out-performance when equities are grouped according to an eco-efficiency rating. A slightly different approach using socially responsible indexes and spaning tests show that these indexes do not exhibit different risk-adjusted return than conventional benchmarks (Schroder, 2004).

As far as we can tell, there is very limited academic research on Shariah property investment (RICS, 2005) and no prior research on the cost of Shariah compliance in real estate investment. With the prevalent increase in interest and quantum in Shariah-related investments, it is apt that a research which attempts to estimate the cost of compliance in Shariah compliant real estate investment be carried out.

Research Design and Approach

Unlike empirical research on socially responsible investing, an empirical investigation of the cost compliance research question for Shariah property investment is severely handicapped due to a lack of data. Islamic real estate funds are private equity funds that do not disclose performance. The first and only Islamic REIT started trading only on July 24, 2006. We propose adopting the following thought experiment to address the research question.

First we compute a Shariah compliant "synthetic" portfolio that invests in REITs. We use REIT data from the US market since the US REIT market is well developed and has a relatively long history. We may think of this SC REIT portfolio as a SC real estate mutual fund (REMF) that invests in REITs in the spirit of Geczy, Stambaugh and Levin (2005). All listed REITs are screened to see if they conform to Shariah compliance principles in general, and sectoral screens in particular. We do not impose financial screens for the following reasons. First, the only major issue that may violate the financial screens is the requirement that the debt/asset ratio should not exceed 30%. It is widely accepted in Shariah investment circles that this ratio is easily achieved by "cleansing" excess debt through the form of Shariah compliant debt financing. As such, we do not view the financial screens as binding constraints. Second, it is a widely accepted fact that leverage and stock returns are inter-related. By incorporating financial screens, we will not be able to differentiate between the sectoral and financial effects of Shariah compliance.

Next, we evaluate the performance of the hypothetical or "synthetic" SC REIT portfolio with that of general REITs in terms of return and risk-adjusted returns from 1993 through May 2006. REIT returns are obtained from CRSP. After screening for data availability in CRSP and websites, the sample for this study comprises 154 REITs of which 146 are captured by NAREIT. The SC REIT portfolio contains 88 REITs while a less restrictive screening yields 102 REITs in the SC-LR REIT portfolio.

The period of analysis starts from 1993 because the REIT industry was relatively small prior to 1993. Chan, Leung, and Wang (2005) note that REITs in the 1990s were on average, more liquid and larger in size compared to their earlier counterparts, and more focused in property type. Also, REITs exhibited greater inside and institutional ownership than in the 1980s. In addition, the implementation of more favorable tax treatment in 1992 contributed to the large growth in assets since then. Li, Mooradian and Yang (2006) identify 1992 as a structural breakpoint for REITs.[3]

Essentially, we adopt the approach in Derwall, et al. (2005), Bauer, et al, (2004) and Bauer, et al. (2005) and test for the significance of Jensen alpha using the CAPM and multi-factor models. In the latter, we use the Carhart's (1992) four factor model. The tests are:

$$R_{it} - r_{ft} = \alpha_i + \beta_i (R_{mt} - r_{ft}) + \varepsilon_{it}, \quad (1)$$

$$R_{it} - r_{ft} = \alpha_i + \beta_{1i}(R_{mt} - r_{ft}) + \beta_{2i} SMB_t + \beta_{3i} HML_t + \beta_{4i} MOM_t + \varepsilon_{it}, \quad (2)$$

where R_{it} is the return on the SC REIT portfolio, both in equal and market weighted terms, r_{ft} is the one-month T-bill rate and R_{mt} is the market benchmark return in month *t.* SML_t, HML_t and MOM_t are the Fama-French (1993) and Carhart (1997) risk factors for size, book-to-market and momentum.

In addition to the market return proposed by Fama and French (1993), we also use REIT industry benchmarks. The indexes we use to compare are the NAREIT equity index (EQREIT) and the Wilshire Real Estate Securities (WRES). The EQNAREIT index measures the performance of equity REITs that are part of the National Association of Real Estate Investment Trusts® (NAREIT). The Wilshire Real Estate Securities (WRES) is a value–weighted index that represents a broad measure of the performance of publicly

[3] The authors cite the dramatic increase in size, acceptance of real estate as an industry group and increased following by institutions and analysts.

traded real estate securities, such as Real Estate Investment Trusts (REITs) and Real Estate Operating Companies (REOCs). REITs account for 80%-87% of the WRES portfolio.

We acknowledge upfront that the above approach has several sources of biases.

First, we recognize that Shariah compliance may be subjective in that some Shariah scholars permit investment in commercial real estate where ancillary activity that infringes on Islamic principles do not exceed 20% of total income. Strict adherence would mean that all retail, hotel and diversified properties are excluded. A similar distinction could be made for office buildings occupied by financial institutions. A strict compliance code would not invest for example, in any office buildings with financial institutions as tenants, but a less strict compliance would tolerate financial institutional tenants should the proportion not exceed 20% of income.

To allow for different interpretations, we construct two SC REIT portfolios – highly restrictive and less restrictive SC REIT portfolios. The highly restrictive SC REIT portfolio excludes all hotel, retail and diversified REITs (denoted as SC REIT portfolio). In contrast, the less restrictive SC REIT portfolio does not automatically exclude all hotel, retail and diversified REITs. We carefully screen individual REITs and include them if the ancillary activities comprise less than 20% of total floor space.[4] We denote the less restrictive portfolio as SC-LR REIT portfolio.

Second, we are only able to screen REITs that are listed as of July 2006. As such, our REIT sample has a survivorship bias. This would complicate the performance comparison of the SC REIT portfolio with benchmark indexes. We deal with the survivorship bias by comparing the performance of the SC REIT portfolio with the full sample of currently listed REITs.

[4] We use floor space as a proxy for income, acknowledging that floor space and income do not have not a perfect correlation. We also use REIT properties as of July 2006 as the reference portfolio, and do not control for changes in assets/properties over time.

Third, the SC REIT portfolio is an index of SC REIT performance; it does not provide information about the performance of Shariah compliant real estate fund. In other words, index evaluation assumes a passive investment stance. In reality, funds are actively managed, hence a large body of research exists on socially responsible investment in mutual funds, in addition to SRI indexes. To address this issue, we conduct two further tests. We were able to identify 185 REMFs as of May 2006. Tracking their history over time shows that the number of REMFs trading before end 1995 is small (less than 20). As such, we constructed the REMF index only from Jan 1996. The monthly REMF data comes from CRSP. The SC portfolio returns are then regressed on the REMF portfolio with the other controlling risk factors.

Next, we conduct a simulation exercise where we create SC real estate mutual funds (REMF) where each REMF has 30 randomly selected REITs[5]. We compare the performance of the simulated SC REMFs with historical performance of REMFs as well as a simulated non-SC REMF. By so doing, we are able to compare like with like, i.e. REMF with and without SC restrictions.

Results

We first compute the annualized mean and standard deviation of monthly REIT returns by sector from 1986 through May 2006. Figure 1 shows the mean return divided by the standard deviation by sector. The diversified, hotel and retail (shopping center and mall) sectors have the highest (retail center) and lowest (hotel) mean/standard deviation ratios among all the sectors. As such, it is difficult to tell *a priori*, how partial or complete exclusion of the REITs in these sectors would affect SC REIT portfolio performance.

Table 2 provides summary statistics on the constructed and market portfolios.

[5] The number of REITs in each REMF is arbitrarily set at 30, which, from our understanding, is the average number of REITs held by REMFs.

Comparison with REIT indexes

When we compare the cumulative performances of the REIT, SC and SC-LR portfolios (see Figures 1 and 2), it is clear that the SC and SC-LR portfolios tend to underperform the REIT portfolio, on both equal and market weighted basis. Another finding worth noting is that the portfolios with strict SC restrictions yielded lower cumulative returns; less restrictive compliance requirements tend to bring about higher cumulative returns. This is consistent with our intuition and suggests that Shariah compliance comes with an attendant cost relative to the REIT universe.

However, when we look at the mean monthly return and variation in returns, the picture is not as clear. Tables 2 and 3 show that the annualized average returns for the SC and SC-LR portfolios are not very different. In fact, the risk-adjusted annualized average return (Sharpe ratio) for the SC portfolio is marginally better than that for the SC-LR portfolio and the all REIT portfolio on an equal weighted basis (Table 3). Further, the average returns for the SC and SC-LR equal weighted portfolios are not statistically different from the REIT portfolio.

If we adjust for size (market weighted), then it is clear that the SC and SC-LR portfolios underperform the all REIT portfolio, both in absolute and risk-adjusted basis. This again reinforces the notion that Shariah compliance has a significant cost in terms of expected returns. This result is robust even after we sub-divided the sample into two periods (pre and post 1999).

As an aside, it should be noted that both the SC and SC-LR market weighted portfolios outperform the EQREIT and WRES indexes in risk-adjusted returns but the differences in mean returns are not statistically different. The above comparisons have to be interpreted with some degree of caution since the EQREIT and WRES indexes may incorporate the performances of REITs that have since merged or delisted and univariate comparisons may not necessarily reflect appropriate risk factors.

CAPM and Multi-Factor models

It could well be that the comparison so far omits significant risk factors such as market, size and book value. This section controls for risk factors that have been widely recognized in the literature. We first estimate the CAPM as in equation (1) as well as the multi factor model in equation (2). In the CAPM setup, we utilize the market return from Fama and French (1993), as well as the NAREIT and EQREIT return to cater for the uniqueness of the REIT market. For the multi factor model, we regress the monthly SC and SC-LR portfolio excess return (SC – r_{ft} and SC-LR – r_{ft}) on the Fama-French (1993) three factors, *MKT*, *SMB* and *HML*, and the momentum factor proposed by Carhart (1997). As the results for the CAPM regression are largely subsumed by that for the multi factor model, we report only the latter in Table 4. We make the following observations.

In most instances, the NAREIT index is a better benchmark than the Fama-French market return. This is hardly surprising given that our study is focused on the REIT industry. In fact, the *NAREIT* coefficient in most regressions is insignificantly different from 1. In contrast, the coefficient for *EQREIT* is usually less than 1. This could explain why the cumulative performances show that the SC and SC-LR portfolios tend to under-perform the EQREIT index.

However, the interesting finding is that the intercept (Jensen's alpha) is consistently negative and insignificant for both the SC and SC-LR market weighted portfolios. Surprisingly, the intercept is positive and significant for the equal weighted SC portfolios. In other words, we are unable to conclude that Shariah compliant portfolios under-perform when risk factors are accounted for. We note that the *SMB* and *HML* risk factors are mostly significant in the regressions.

For robustness, we also define the market return as the REIT portfolio return (based on currently listed REITs). The results (not reported) show that the coefficient on the REIT portfolio excess return is insignificantly different from 1 and that Jensen's alpha is not statistically different from zero. This is so for both the SC and SC-LR portfolios in equal

and market weighted terms. Put differently, the earlier finding that SC market weighted portfolios underperform the all REIT portfolio holds only when other risk factors are not considered. Once relevant risk factors are incorporated, the market weighted SC portfolios do not perform any worse.

In summary, our study is consistent with that by Bauer, *et al.* (2004) and Bauer, *et al.* (2005) no evidence of underperformance is established for socially responsible funds. In fact, there is some support that Shariah compliant REITs outperform as in Derwall, *et al.* (2005).

Comparison with REMF index

As noted in an earlier section, the SC REIT portfolio is an index of SC REIT performance; it does not provide information about the performance of Shariah compliant real estate fund. To compare the performance of the SC REIT portfolio to REMF, we construct an index return for the 185 REMFs that are listed. The second approach is to conduct a simulation exercise where we create SC real estate mutual funds (REMF) where each REMF has 30 randomly selected REITs. We compare the performance of the simulated SC REMFs with historical performance of REMFs as well as a simulated non-SC REMF.

Table 5 provides the comparison with REMF index. As before, the returns on the market weighted SC and SC-LR portfolios are lower than that of the equally weighted portfolios. It should be noted that the MW and EW REMF portfolios are weighted by the size of the mutual funds, and not the size of the REITs that are held. On a market weighted basis, it is clear that the SC and SC-LR portfolios underperform the REMF index.

This observation does not hold when we control for relevant risk factors. Table 6 shows that Jensen's alpha is insignificant, albeit negative. The coefficient on the REMF excess return is close to 0.5, which is consistent with the results in Table 5. Although SC portfolios tend to under perform those without restrictions, such under performance

disappears (at least becomes statistically insignificant) when risk factors are controlled for.

How do SC REMFs compare to non SC REMFs? To answer this question, we turn our attention to the simulation. Each simulated SC and SC-LR REMF contains 30 REITs, and we carried out 1,000 runs. The results in Table 7 and Figure 5 show that SC and SC-LR REMFs do not necessarily under perform. In fact, the market weighted SC simulated REMFs dominate the conventional REMF even though the average mean returns are not statistically different. Equally interesting is that the average simulated mean portfolio return for SC and SC-LR REMFs of 16.68% and 17.16% (annualized) are higher than the historical REMF annualized mean return of 15.72%.

This result is an important one. In the absence of actual mutual fund performance, our simulation provides the second best approach, and shows that random selection of REITs from the constrained universe does not necessarily do any worse than the average REMF return. This suggests that active management may mitigate the difference to the extent that it may even be possible to improve returns in the SC real estate mutual fund.

Concluding Remarks

This study attempts to address the research question "What is the cost of Shariah compliance in real estate investments?" Because Shariah investment in real estate is very new, we construct synthetic Shariah compliant (SC) REIT portfolios based on historic performance of US REITs as a thought experiment. The performance of the synthetic portfolios are compared with various benchmarks in both univariate and multi factor settings. We benchmark these synthetic portfolios with historical performance of US real estate mutual funds (REMF).

The key result is that Shariah compliance seems to create a return trade-off and less restrictive compliance requirements appear to provide better historical returns. However, Shariah compliance does not mean that SC REMF necessarily under-perform relevant

indexes when relevant risk factors are considered and allowing for differing sensitivities to benchmark returns. While SC market weighted portfolio returns may be lower than a non-constrained REIT portfolio, the WRES and EQREIT index returns, there is no abnormal negative return when risk factors are controlled for. In contrast, outperformance (positive Jensen's alpha) is found under certain model specifications. The implication from this result is that it may be over simplistic to assert that Shariah compliance would necessarily result in an inferior return-risk profile.

We also show that while the SC and SC-LR market weighted portfolios underperform the REMF index, such underperformance disappears when we control for relevant risk factors. In fact, the market weighted SC simulated REMFs dominate the conventional REMF and the average simulated annualized mean portfolio return for SC and SC-LR REMFs are higher than the historical REMF annualized mean return. Such findings underscore the value of active management.

In summary, we echo the view in Geczy, *et al.*, (2005) that the cost of SC "depends crucially about the investor's views about asset pricing models and stock-picking skill by fund managers." Indeed, the acid test will be empirically possible only with time and as more Islamic REITs and real estate funds become established.

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Table 1: List of Islamic Real Estate Funds as of June 2006

Fund Manager/Distributor	Name of Fund	Country	Size $ USD million	Type	Investor Advisor	Description
Kuwait Finance House	Baitak Asia Real Estate Fund	South Asia	600	Commercial Residential	Pacific Star Group	A $600 million Islamic real estate fund. The Baitak Asia Real Estate Fund will invest in residential and commercial sites in Asian countries. This will be the first real estate deal in Asia for KFH, which is 49 percent own by Gulfs
Kuwait Finance House	Islamic European Real Estate Fund	Europe	486	Commercial Residential	Equity Estates BV	The fund intends to invest Euro 400m in European property concentrating in high yielding office, logistics, and light industrial properties in the Benelux, France and German.
Dubai Islamic Bank; Cheung Kong Group	Al Islamic Far Eastern Real Estate Fund	Far East	450	Commercial Retail Residential	ARA Asset Management	The new fund will be managed by ARA Asset Management and jointly promoted by DIB and Cheung Kong Group. The Islamic compliant investment vehicle has set aside $450 million to invest in commercial, retail and residential projects in major Asian Cities
Guidance Financial Group	Guidance Fixed Income Fund	USA	200	Residential	Freddie Mac	The fund will hold securities that are backed by Shariah Compliant real estate finance assets. The securities will be issued and guaranteed by the Federal Home Loan Mortgage Corporation (‘Freddie Mac’)
Shamil Bank	China Realty Fund	China	150	Commercial	International Assets Management Co. Ltd (CITICIAM)	Shamil Bank Bahrain entered into a Memorandum of Undesrtanding (M.O.U) with prominent Chinese financial institution CITIC International Asset Management Co. Ltd (CITICIAM) to set up and launch US$ 150 million closed-end China Realty Fund

Figure 1: Mean Return / Standard Deviation by REIT sectors (1986-2006)

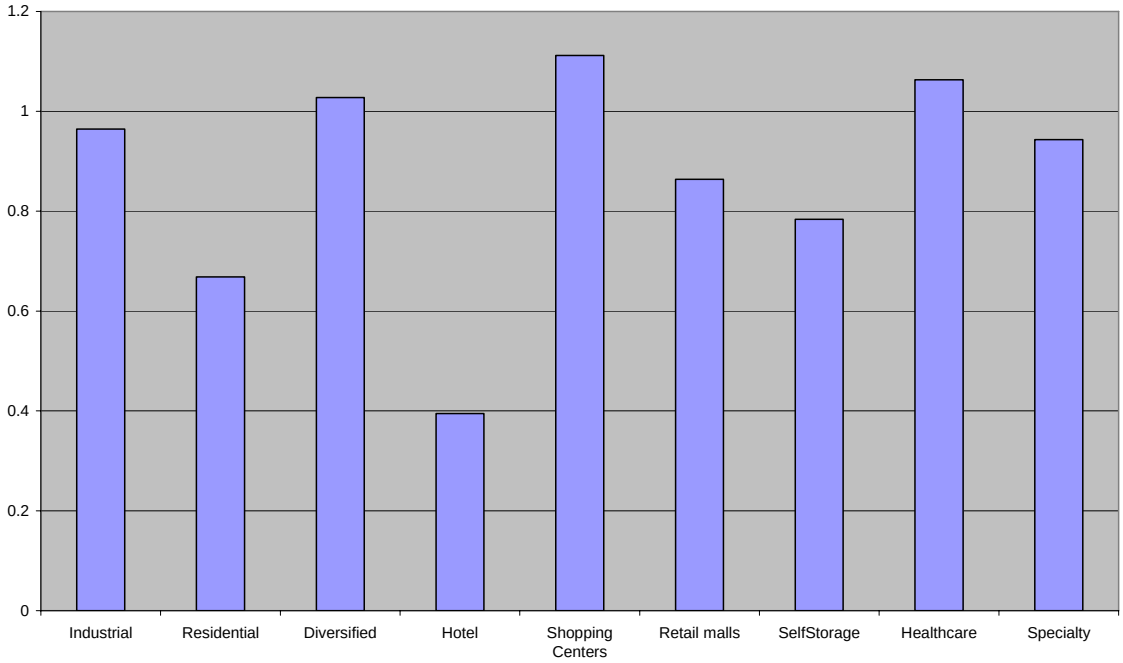

Table 2: Descriptive Statistics

Variable	Mean	Std.Dev.	Minimum	Maximum	Cases
Constructed REIT portfolios					
SC-MW	0.0079	0.0193	-0.0629	0.0527	161
SC-LR-MW	0.0078	0.0190	-0.0640	0.0486	161
REIT-MW	0.0167	0.0393	-0.1324	0.1466	161
SC-EW	0.0146	0.0325	-0.1191	0.0862	161
SC-LR-EW	0.0142	0.0316	-0.1223	0.0840	161
EREIT-EW	0.0144	0.0322	-0.1223	0.0942	161
Market indexes					
NAREIT	0.0114	0.0378	-0.1526	0.0996	161
EQREIT	0.0118	0.0382	-0.1458	0.1039	161
WRES	0.0118	0.0396	-0.1388	0.1067	161
REMF	0.0131	0.0378	-0.1358	0.1042	123

SC and *SC-LR* are the monthly returns on Shariah compliant and less restrictive Shariah compliant portfolios, comprising 88 and 102 REITs respectively. *REIT* is the monthly return on a portfolio comprising REITs listed as of July 2006. *-EW* and *-MW* refer to equal and market weighted portfolios. *NAREIT* and *EQREIT* are the monthly index returns for all REITs and equity REITs tracked by NAREIT. *REMF* is the monthly return on a portfolio of 185 real estate mutual funds using CRSP data from Jan 1996 through April 2006.

Figure 2: Cumulative Performance of Equally Weighted REIT, SC and SC-LR portfolios

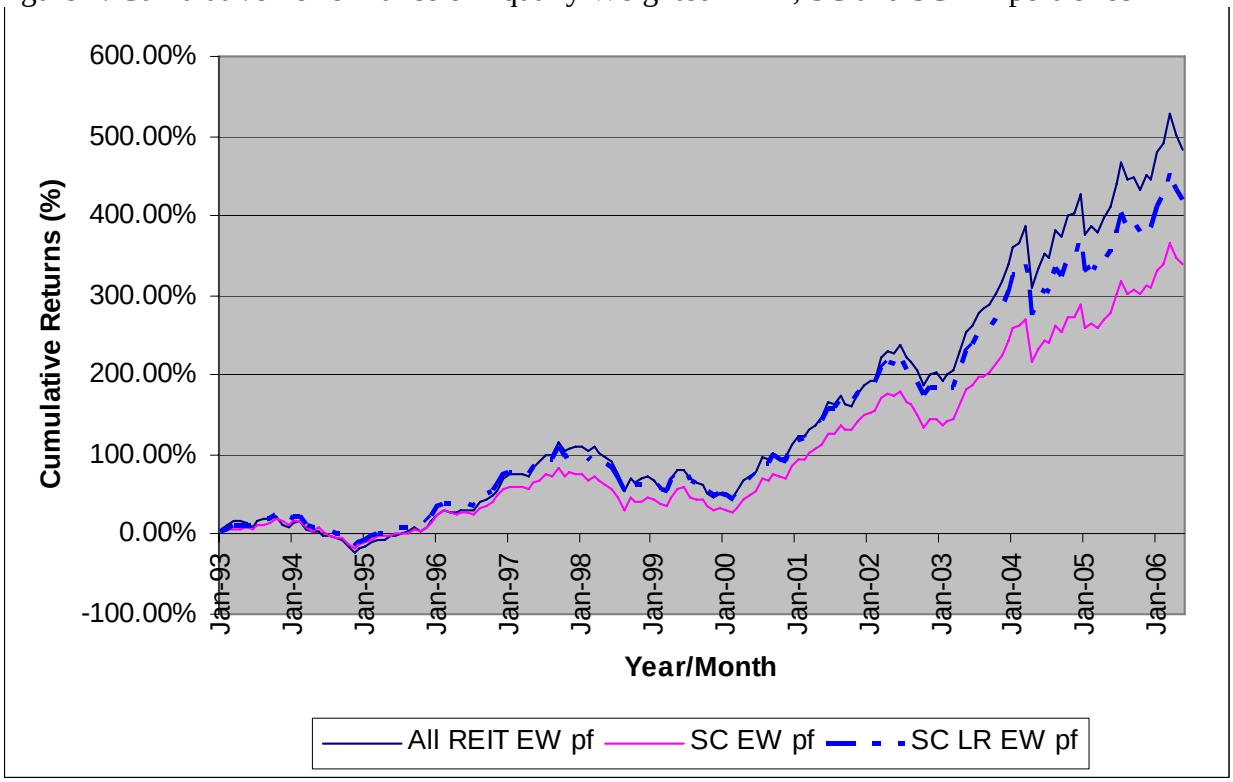

Figure 3: Cumulative Performance of Market Weighted REIT, SC and SC-LR portfolios

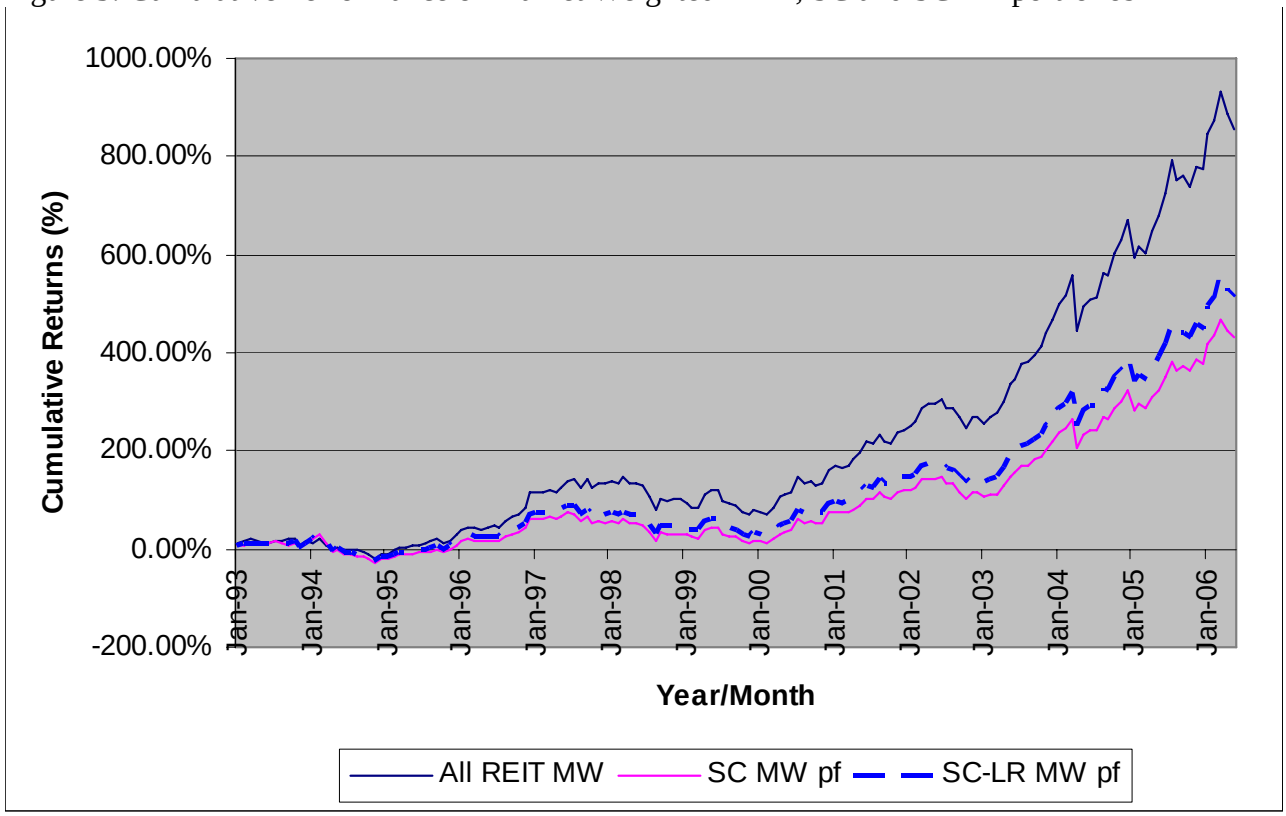

Table 3: Annualized average returns of SC and SC-LR portfolios
(Jan 1993 – May 2006)

	Equal Weighted Portfolios			Market Weighted Portfolios				
	SC	*SC-LR*	*REIT*	*SC*	*SC-LR*	*REIT*	*WRES*	*EQREIT*
Ann. Mean	17.50%	17.05%	17.32%	9.43%	9.33%	20.10%	14.21%	14.19%
Ann. Std Dev	11.25%	10.95%	11.14%	6.69%	6.57%	13.61%	13.73%	13.24%
Sharpe ratio	1.213	1.206	1.21	0.835	0.834	1.194	0.755	0.781
Difference in means (t-test) with respect to:								
REIT		0.041	-0.063	-2.569**	-2.603**			
WRES	0.643	0.677	0.591	-1.142	-1.171	1.113		
EQREIT	0.660	0.695	0.608	-1.172	-1.202	1.136		

SC and *SC-LR* are the monthly returns on Shariah compliant and less restrictive Shariah compliant portfolios, comprising 88 and 102 REITs respectively. *REIT* is the monthly return on a portfolio comprising REITs listed as of July 2006. *-EW* and *-MW* refer to equal and market weighted portfolios. *NAREIT* and *EQREIT* are the monthly index returns for all REITs and equity REITs tracked by NAREIT.

** indicates statistical difference at 5%

Table 4: Carhart Four Factor Model

Dep Var	Excess *SC-MW* return					
	coeff		t-stat	coeff		t-stat
Constant	-0.0024		-0.02	0.0314		0.65
MKT-RF	-0.2546	***	-6.19	0.0301	**	2.20
NAREIT-RF	0.9991	***	1387.82			
EQREIT-RF				0.4774	***	28.60
SMB	-0.2473	***	-7.45	-0.0180		-1.46
HML	-0.3623	***	-7.30	0.0099		0.55
MOM	0.0345		1.47	0.0105		1.38
Adj R2	0.9996			0.9141		

Dep Var	Excess *SC-LR-MW* return					
Constant	-0.0042		-0.03	0.0300		0.70
MKT-RF	-0.2611	***	-6.34	0.0252	**	2.04
NAREIT-RF	0.9990	***	1381.37			
EQREIT-RF				0.4745	***	33.01
SMB	-0.2460	***	-7.48	-0.0154		-1.29
HML	-0.3685	***	-7.44	0.0057		0.35
MOM	0.0341		1.46	0.0100		1.48
Adj R2	0.9996			0.9275		

Dep Var	Excess *SC-EW* return					
Constant	0.4061	***	3.59	0.3998	***	4.19
MKT-RF	-0.0578	*	-2.11	0.0946	***	3.29
NAREIT-RF	1.0000	***	2828.77			
EQREIT-RF				0.7316	***	23.38
SMB	-0.0427		-1.51	0.0786	**	2.48
HML	-0.1069	***	-2.97	0.0886	**	2.34
MOM	0.0044		0.18	-0.0103		-0.47
Adj R2	0.9997			0.8861		

Dep Var	Excess *SC-LR-EW* return					
Constant	0.3754	***	3.44	0.3724	***	4.19
MKT-RF	-0.0703	**	-2.53	0.0932	***	3.44
NAREIT-RF	0.9999	***	2626.57			
EQREIT-RF				0.7102	***	24.50
SMB	-0.0349		-1.19	0.0955	***	2.93
HML	-0.1103	***	-3.07	0.1001	***	2.90
MOM	0.0053		0.20	-0.0101		-0.42
Adj R2	0.9998			0.8990		

SC and *SC-LR* are the monthly returns on Shariah compliant and less restrictive Shariah compliant portfolios, comprising 88 and 102 REITs respectively. *REIT* is the monthly return on a portfolio comprising REITs listed as of May 2006. *-EW* and *-MW* refer to equal and market weighted portfolios. *NAREIT* and *EQREIT* are the monthly index returns for all REITs and equity REITs tracked by NAREIT. *MKT*, *SMB*, *HML* and *MOM* are the market, size, book-to-market and momentum risk factors from Fama-French (1993) and Carhart (1997).

***, **, * indicates statistical difference at 1%, 5% and 10% respectively. All standard errors are heteroskedasticity robust.

Table 5: Comparison of annualized average returns of SC and SC-LRE portfolios with REMF returns (Jan 1996 – May 2006)

	Equal Weighted portfolios			Market Weighted portfolios		
	SC	*SC-LR*	*REMF*	*SC*	*SC-LR*	*REMF*
Ann. Mean	16.59%	16.21%	15.68%	8.63%	8.68%	15.72%
Std Dev	11.85%	11.51%	13.11%	6.84%	6.72%	13.42%
Sharpe ratio	1.06	1.09	1.19	0.72	0.74	1.17

SC and *SC-LR* are the monthly Shariah compliant and less restrictive Shariah compliant portfolio returns. *REMF* is the monthly return on a portfolio of 185 real estate mutual funds using CRSP data from Jan 1996 through April 2006.

Table 6: Carhart four factor model using REMF benchmark

Dep Var	Excess *SC-MW* return			Excess *SC-LR-MW* return		
	coeff		t-stat	coeff		t-stat
Constant	-0.0496		-1.14	-0.0325		-0.83
REMF-RF	0.5119	***	31.21	0.5083	***	37.63
MKT-RF	0.0013		0.10	-0.0064		-0.55
SMB	-0.0243	**	-2.12	-0.0218	**	-2.03
HML	-0.0032		-0.20	-0.0097		-0.66
MOM	0.0000		-0.01	-0.0017		-0.28
Adj R2	0.9441			0.9529		

SC and *SC-LR* are the monthly returns on Shariah compliant and less restrictive Shariah compliant portfolios, comprising 88 and 102 REITs respectively. *REIT* is the monthly return on a portfolio comprising REITs listed as of July 2006. *EW* and *MW* refer to equal and market weighted portfolios. *NAREIT* and *EQREIT* are the monthly index returns for all REITs and equity REITs tracked by NAREIT. *MKT*, *SMB*, *HML* and *MOM* are the market, size, book-to-market and momentum risk factors from Fama-French (1993) and Carhart (1997). *REMF* is the monthly return on a portfolio of 185 real estate mutual funds using CRSP data from Jan 1996 through April 2006.

***, **, * indicates statistical difference at 1%, 5% and 10% respectively. All standard errors are heteroskedasticity robust.

Table 7: Results of Simulated Returns

	REIT-EW	*SC-EW*	*SC-LR-EW*	*REIT-MW*	*SC-MW*	*SC-LR-MW*
min	0.90%	1.03%	1.08%	0.78%	1.12%	1.31%
max	2.64%	2.26%	1.95%	1.66%	1.82%	1.61%
average	1.38%	1.48%	1.39%	1.37%	1.43%	1.45%

SC and *SC-LR* are the monthly returns on Shariah compliant and less restrictive Shariah compliant portfolios, comprising 88 and 102 REITs respectively. *REMF* is the monthly return on a portfolio of 185 real estate mutual funds using CRSP data from Jan 1996 through April 2006.

***, **, * indicates statistical difference at 1%, 5% and 10% respectively. All standard errors are heteroskedasticity robust.

Figure 4: Distribution of Average Monthly Returns from Simulated REMFs