

UK REIT conversion and institutional ownership dynamic

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Abstract

Purpose – The purpose of this paper is to examine the impact of conversion to REIT status by former listed property companies in the United Kingdom on the level of institutional ownership during the period of 2007–2016.

Design/methodology/approach – This paper uses an event study framework to track the change in institutional ownership three years before and after a REIT conversion event. This event study approach circumvents the sample selection bias issue associated with the conversion event wherein the decision to convert to REIT is likely to be endogenous.

Findings – Panel regression analysis reveals that changing to REIT status led to a 12.8 and 15.2% increase in institutional ownership and number of institutional investors, respectively. The first order of priority in institutional investors' investment in REIT shares is their preference for liquidity. Further analysis shows that institutional investors changed their preferences towards characteristics associated with systematic risk, firm age and liquidity after the conversion event by becoming less averse to firm-specific risk, placing more emphasis on firm age and less emphasis on systematic risk and liquidity.

Practical implications – Overall, conversion to REIT status helps increase former property companies' investor base, which is in line with the regulator's aim to open up the property market to a wide range of investors through the introduction of a REIT regime. Findings from this paper also have policy implications for countries that are considering a REIT regime for their capital market and existing REIT regimes without a formal conversion mechanism.

Originality/value – This paper offers, for the first time, evidence on 1) how conversion to REITs influences firms' institutional ownership and 2) the determinants of converted REITs' institutional ownership.

Keywords REIT conversion, UK REITs, Institutional ownership, Number of institutional investors, REIT regime, REIT status

Paper type Research paper

Received 28 May 2020
Revised 2 August 2020
8 August 2020
Accepted 8 August 2020

1. Introduction

An extensive body of research has examined the determinants of institutional ownership. The central findings from this strand of literature are as follows. First, institutional ownership of US common stock has increased dramatically over the past 60 years, from 7% in 1950 to 50% in 1999 (Bennett *et al.*, 2003) and to 61% in 2014 (Franks, 2020). Second, certain firm characteristics proxied for institutional investors' motives for liquidity, prudent investment and trading strategy are consistently found to be significantly related to the level of institutional ownership (Del Guercio, 1996; Gompers and Metrick, 2001). Third, institutional investors' preferences towards these firm characteristics tend to change over time (Bennett *et al.*, 2003; Devos *et al.*, 2013). Bennett *et al.* (2003), for instance, document that institutional investors in the USA have shifted their preferences towards smaller and riskier securities with the aim of maximizing risk-adjusted performance.

The literature on REIT institutional ownership documents the dramatic increase in aggregate institutional holdings of US REITs in the 1990s. Institutional ownership increased



The author thank two anonymous referees, Colin Lizieri, Jing Chi and participants at the 2017 ASRES conference and the 2018 MFA conference for their helpful comments. Financial support from the Malaysia Ministry of Higher Education through its FRSG research grant (Code S/O: 12909) is gratefully acknowledged.

from less than 10% during the pre-1990s period (Wang *et al.*, 1992) to 41.7% in the post-1990s period (Ling and Ryngaert, 1997). This was due to the change in REIT regulations that increased the acceptance of REITs among institutional investors in the post-1990s period. In particular, the relaxation of the look-through ownership requirement that used to constrain institutional investors' investment in REIT. Specifically, since 1993, institutional investors are no longer considered as a single stockholder where their ownerships are passed through to their beneficiaries (Chung *et al.*, 2010). This avoids the breaching of the closely held ownership rule ("five or fewer" rule) by institutional investors and makes them, collectively, the main shareholders of REIT shares in the USA [1].

Existing REIT literature on institutional investors focusses primarily on the impact of institutional ownership on firm performance (Graff and Young, 1997; Downs, 1998; Friday *et al.*, 1999; Chung *et al.*, 2010) and corporate governance (Feng *et al.*, 2010; Hartzell *et al.*, 2006) arising from the monitoring roles of institutional investors. Generally, findings from this strand of literature support the monitoring roles of institutional investors in reducing the agency problem, thus enhancing the performance and efficiency of REITs. The literature on the determinants of REIT institutional ownership, on the other hand, is relatively scant. Focussing on institutional ownership change surrounding the global financial crisis (GFC), Devos *et al.* (2013) document that institutional investors place more emphasis on managing risk during the GFC by reducing their holding of risky REITs while increasing their holding of larger REITs. An earlier study by Ciocheitti *et al.* (2002) finds that institutional investors prefer larger and more liquid REITs. Consistent with their liquidity-constraint hypothesis, liquidity variables (stock price, trading volume and market price) are found to be positively related to institutional ownership.

In this paper, I examine the impact of conversion to REITs by existing listed property companies on the level of institutional ownership. I do this by focussing on a sample of UK listed property companies that opted to convert to REITs when the REIT regime was first introduced in the United Kingdom on 1 January 2007. This research question is important for institutional investors, because they are the main investors in the UK stock market, having a 78% equity holding in UK listed firms at the end of 2014 (Franks, 2020). Research has shown the positive impact of institutional investors on firm value due to their monitoring roles and the reputation effects associated with institutional investment. The monitoring roles of institutional investors minimize the agency problems and inefficiencies in information dissemination, which, in turn, increases firms' liquidity and reduces trading costs. The reputation impact is particularly important for UK REITs that made their debut in the capital market in 2007. The participation of institutional investors may bolster investors' confidence in the UK REITs and attract the attention of financial analysts during the early stage of the REIT sector's inception.

I track the change in institutional ownership for each of the converted REITs, three years before and after they were converted to REITs. This event study approach allows me to circumvent sample selection bias issues, because the conversion decision is likely to be endogenous. Conversion probability should be higher for property companies with characteristics that are closer to the requirements of REIT regulation. Importantly, this approach provides me a natural experiment setting to investigate the change in the preference of institutional investors following the adoption of REIT regulation, which is more stringent and transparent than listing rules for conventional companies.

This paper is most closely related to that of Brounen *et al.* (2013), who examine the change in performance and firm characteristics of firms converted to REITs in France, Germany, the United Kingdom and the USA [2]. The authors find that firms that converted to REITs experience a decrease in systematic risk (beta) and leverage, a small increase in stock turnover levels and an increase in dividend payouts. The authors also find support for their hypothesis that converted REITs' dividend announcement effects are less informative following their adoption of REIT standards that strip away managers' discretion in dividend

payout policy. In particular, the stock price reaction to changes in dividends weakens after the conversion event. This paper is also related to literature that examines the impact of the changes in financial regulation (regime) on stock liquidity (Avgouleas and Degiannakis, 2009), underpricing (Ljungqvist and Wilhelm, 2003), stock price volatility (Bushee *et al.*, 2004) and house foreclosures (Mian *et al.*, 2015).

This paper attempts to contribute to the REIT literature in three ways. First, I examine for the first time the impact of the REIT regime on institutional ownership by tracking the level of institutional ownership for the *same* property company before and after converting to REIT. Attracting institutional investment and creating a diversified investor base have been mentioned as motives to embrace the REIT regime by the regulators worldwide. So far, there is a dearth in the literature as to whether these objectives were achieved after the REIT regime was introduced. Second, I complement Brounen *et al.* (2013) by offering a more detailed analysis of converted UK REITs using a larger sample and adopting a multivariate framework. The evidence provided by Brounen *et al.* (2013) for the UK REITs is mostly descriptive in nature and does not consider the change in ownership structure of converted REITs. Third, this paper adds to the scant literature on UK REITs. To the best of my knowledge, there are only four published papers on UK REITs in primary UK and Europe property journals. These are the papers of Baum and Devaney (2008), who examine the impact of depreciation and expenditure on UK REITs' income and distribution; Ke (2015), who examines the determinants of net asset value (NAV) discount for both listed UK property companies and REITs; Newell and Marzuki (2016), who examine risk-adjusted performance and portfolio diversification benefits of UK-REITs in a mixed-asset portfolio; and Jadevicius and Lee (2017), who examine the existence of calendar anomalies in the UK REITs.

The paper is organized as follows. In the next section, I provide institutional background information for the UK REIT sector and further develop my testable hypotheses. Section 3 describes the methodology and data used in this study. Section 4 presents my empirical analysis, and the final section concludes.

2. Institutional background and hypothesis development

2.1 Institutional background

The REIT regime was introduced in the United Kingdom on 1 Jan 2007. Similar to REITs in other developed countries, UK REITs are exempted from corporate tax as long as they can comply with the standard REIT rules/tests such as dividend distribution (90% of net rental revenue), asset/profits test (75% from property rental business) and ownership (five or fewer rules) [3]. Related to the ownership rule is the 10% substantial shareholder rule that imposes a 20% tax charge on dividends paid to corporate shareholders owning more than 10% of REIT shares. UK REITs, however, can amend their Articles of Association to avoid this tax subject to the demonstration to the UK government that they have put in place a mechanism to avoid such as a distribution being paid. F&C UK Real Estate Investment Ltd, for instance, amended its Article of Association to give power to the board to pay dividend to its substantial shareholder, Friends Life Limited, provided that the latter holds no more than its current 14.2% in the REIT. Readers are referred to EPRA (2016) and Moss (2018) for a comprehensive and detailed discussion of the UK REIT regime.

Table 1 shows that the UK REIT sector has the largest number of listed REITs (36) and market capitalization (€56.9bn) in Europe as of August 2016. This was followed by France and the Netherlands, with sector market capitalization of €49.4bn and €29.1bn, respectively. These three markets collectively garnered 79.11% of total REIT market capitalization in Europe. All REIT markets in Europe (except for Lithuania) have clear conversion rules that allow existing listed companies with characteristics that pass the REIT tests to elect to convert to REITs. Except for the United Kingdom, Bulgaria and Greece, conversion is a taxable event, where conversion or exit charge as a percentage of capital gain arising from the

	REIT since	No of REITs @ Aug 2016	Mt Cap (€bn) @ Aug 2016	% total Europe REIT markets	REIT conversion regulation	Conversion charge
United Kingdom	2007	36	56.858	33.24	Yes	No conversion charge since 2012
France	2003	32	49.357	28.85	Yes	19% on capital gain
Netherlands	1969	5	29.124	17.02	Yes	Tax on capital gain at regular corporate tax rates
Belgium	1995	17	11.027	6.45	Yes	12.75% on capital gain (15% from 1 January 2020)
Spain	2009	5	7.806	4.56	Yes	25% capital gain tax
Germany	2007	4	2.797	1.63	Yes	Conversion event is treated as a taxable event
Ireland	2013	3	2.416	1.41	Yes	33% capital gain tax
Italy	2007	3	2.172	1.27	Yes	20% tax on capital gain
Greece	1999	4	1.817	1.06	Yes	No
Bulgaria	2004	53	0.865	0.51	Yes	No
Finland	2009	1	0.075	0.04	Yes	20% tax on capital gain
Hungary	2011	–	–	–	Yes	N/A
Lithuania	2013	–	–	–	No	N/A
Luxembourg	2007	–	–	–	Yes	Conversion event is treated as a taxable event

Table 1.
European REIT markets

Source(s): EPRA Global REIT Survey (2016, 2019)

transfer of properties to a REIT is payable to the government in return for REIT status. The prevalence of conversion features among European REITs is in stark contrast to REITs in the Asia Pacific region such as Australia, Japan, Hong Kong and Singapore, where conversion regulation is absent from the REIT regulation. REITs in this region are newly formed companies that went through the normal initial public offering (IPO) process.

There are four pull factors that encourage existing property companies in the United Kingdom to change to REIT status. The first of these is the cash saving from conversion to REIT. This is achieved through corporate tax exemption and the reduction of deferred tax liability on properties disposed prior to conversion. UK REITs are exempted from capital gain tax on disposals of assets used in the property rental business. The British Land Company PLC, the largest listed property company (measured by total assets) in Europe in 2006 that chose to convert to REIT, cited a total deferred tax saving of £1.7bn, which was more than offset the £0.315bn entry charge for conversion to REIT, as one of the benefits of its conversion (British Land Company, 2006). This one-off entry charge (2% over total market value of real estate) was eventually abolished by the UK regulator on 17 July 2012.

Second, the conversion process is relatively simple and straightforward for those companies that have obtained conversion approval from their shareholders. As shown in Table 2, it took less than one month (22 days) from the Extraordinary General Meeting (EGM) date to the full conversion date. The chief executive of the British Land Company, Giles

No	REIT name	EGM notice	EGM date	Conversion date	UK REIT conversion and institutional ownership
1.	A & J Mucklow Group Plc	30-Apr-07	23-May-07	1-Jul-07	UK REIT conversion and institutional ownership
2.	Assura Plc	28-Jan-13	15-Feb-13	1-Apr-13	
3.	Big Yellow Group Plc	11-Apr-07	4-May-07	15-Jan-07	
4.	British Land Company Plc	28-Nov-06	20-Dec-06	1-Jan-07	
5.	Brixton Inc (delisted)	NA	NA	1-Jan-07	
6.	Capital & Regional Plc	13-Nov-14	2-Dec-14	31-Dec-14	
7.	Derwent London Plc	31-May-07	26-Jun-07	1-Jul-07	
8.	F&C UK Real Estate Investments Limited	25-Nov-14	19-Dec-14	1-Jan-15	
9.	Great Portland Estates Plc	15-Nov-06	13-Dec-06	1-Jan-07	
10.	Hammerson Plc	20-Nov-06	13-Dec-06	1-Jan-07	
11.	Hansteen Holdings Plc	7-Sep-09	25-Sep-09	6-Oct-09	
12.	Highcroft Investments Plc	13-Nov-07	13-Dec-07	1-Apr-08	
13.	Intu Properties Plc	22-Nov-06	18-Dec-06	1-Jan-07	
14.	Land Securities Group Plc	NA	15-Dec-06	1-Jan-07	
15.	McKay Securities Plc	5-Feb-07	28-Feb-07	1-Apr-07	
16.	Primary Health Properties Plc	20-Nov-06	18-Dec-06	1-Jan-07	
17.	Real Estate Investors Plc	4-Dec-14	23-Dec-14	1-Jan-15	
18.	Redefine International Plc	6-Nov-13	29-Nov-13	4-Dec-13	
19.	Schroder Real Estate Investment Trust Limited	31-Mar-15	28-Apr-15	1-May-15	
20.	SEGRO Plc	NA	14-Dec-06	1-Jan-07	
21.	Shaftesbury PLC	23-Feb-07	19-Mar-07	1-Apr-07	
22.	Standard Life Investments Property Income Trust	29-Oct-14	20-Nov-14	1-Jan-15	
23.	Town Centre Securities Plc	7-Sep-07	1-Oct-07	2-Oct-07	
24.	Warner Estate Holdings Plc (delisted)	28-Feb-07	23-Mar-07	1-Apr-07	
25.	Workspace Group Plc	NA	15-Dec-06	1-Jan-07	

Table 2.
Converted UK REITs

Barrie, was quoted as saying that: “*Apart from our conversion charge, the cost of becoming a REIT is one fax to the Inland Revenue: 2p for the paper and 10p to send the fax: that’s how simple it is*” (Property Week, 2006). Third, for potential converts with firm characteristics that meet the REIT tests (i.e. high rental business, high dividend payout and diverse ownership structure), these firms can maintain their existing business policy and corporate structure upon conversion to REITs. Converted REITs are allowed to keep their other non-property rental business such as property development/trading or management as long as they constitute no more than 25% of the REIT total assets. Income generated from these residual businesses, however, is subject to corporate tax. Fourth, conversion to REIT makes property companies more liquid and transparent in the eyes of investors due to the stringent REIT rules and access to the REIT “brand” that is widely accepted among international portfolio managers. This may improve the company’s valuation and investor base, facilitating their ability to raise fresh capital for growth in the future.

Figure 1 shows that the total number of UK REITs increased from 19 to 32 during the period from 2007 to 2016, while market capitalization doubled from £27bn to £45.8bn during the same period. Most REITs entered the capital market during the first year of inception of the UK REIT regime in 2007. A total of 19 companies elected to become REITs in 2007, of which 16 REITs were converted from listed property companies while the remaining three REITs are new REIT IPOs [4]. These converted REITs were among the largest listed property companies in the United Kingdom. Since then, the increase has been slowed partly due to unfavourable market conditions (i.e. the GFC) and partly due to unattractive REIT rules, such as the 2% entry charge, ownership and listing restrictions imposed on the new entrants. Amendment to these rules was subsequently made in the Finance Act of 2012. Specifically, the 2% entry charge was abolished, and new REIT entrants were provided a three-year grace period to fulfil the listing and maximum 10% single corporate shareholder requirements.

This amendment means that new entrants to the REIT regime are given three years to meet the listing and ownership requirements upon conversion to REIT. This three-year grace period is also given to small and growth firms listed on London Stock Exchange's AIM. These firms are not required to meet UK REIT's listing requirements in the first three years in which they are a UK REIT. This positive reform in REIT regulation led to the addition of 11 new REITs between 2013 and 2016.

2.2 Hypothesis development

A property company may fall under the radar of institutional investors upon being converted to REIT due to the positive attributes of REIT structure. Chief among these is the exemption from corporate tax that allows investors to enjoy stable dividend income while avoiding double taxation incurred prior to the conversion. The stringent REIT regulation further reduces the potential agency issues, thus improving the liquidity and transparency of converted REITs. Moreover, access to the "REIT" brand that is widely accepted as the favourable property ownership may now attract institutional investors who may have been previously prevented from investing in non-REIT entities. In sum, I hypothesize that conversion to REIT status leads to a significant increase in the institutional ownership and the number of institutional investors in REIT shares.

Given the change in the risk and return profile upon conversion to REIT (less risky and more liquid and transparent), I examine whether this change affects institutional investors' preference for liquidity, prudent investment and trading strategy. Following [Ciochetti et al. \(2002\)](#), I hypothesize that institutional investors may have a greater demand for liquidity as they become the main investors of REIT shares. Similarly, prudent investment motives may become more significant upon conversion to REIT to cater to institutional investors' fiduciary responsibility. On the other hand, we may not observe any change in preference towards REIT shares by institutional investors if there is no significant change in ownership structure and firm characteristics upon conversion to REIT.

3. Methodology

This paper uses an event study framework to identify the causal inference of REIT conversion on institutional ownership. I first identify 25 conversion events during the period from 2007 to 2016 as shown in [Table 2](#). Many of these converted REITs were among the

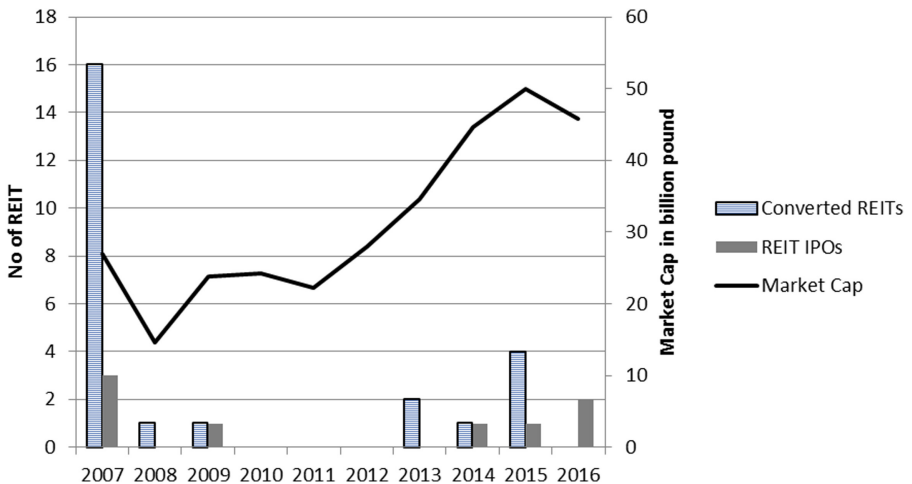


Figure 1.
Number of newly listed REITs during 2007–2016

largest listed property companies in the United Kingdom prior to conversion. Note that Big Yellow Group PLC's conversion approval obtained at EGM on 4 May 2007 was backdated to 15 January, while Highcroft Investments PLC and Warner Estate Holdings PLC are not included in the regression analysis due to data availability issues. This sample of converted REITs is more than double the 12 conversion events studied by [Brounen et al. \(2013\)](#). The event windows contain equally balanced two- and three-year event windows centred on individual REITs' conversion events. Similar to [Devos et al. \(2013\)](#), I exclude REIT quarters where the sum of total ownership is larger than 100%. The aforementioned sample filtering led to a final sample of 23 conversion events.

A fixed effects panel regression model is used to assess the impact of REIT conversion on institutional ownership and the number of institutional investors. A Hausman test reveals that the fixed effects model is preferred over the random effects model. All continuous variables used in the regression analysis were winsorized at the 1st and 99th percentile to avoid the influence of extreme observations. The regression model is estimated as follows:

$$\text{Insti. ownership}_{it} = \alpha_0 + \alpha_1 \text{Convert}_{it} + \theta_2 \text{Firm characteristics}_{it} + \lambda_3 \text{Crisis}_t + f_i + \varepsilon_{it} \quad (1)$$

$$\text{No of insti. investors}_{it} = \alpha_0 + \alpha_1 \text{Convert}_{it} + \theta_2 \text{Firm characteristics}_{it} + \lambda_3 \text{Crisis}_t + f_i + \varepsilon_{it} \quad (2)$$

The dependent variable of institutional ownership, or the total number of institutional investors, is measured in each quarter for each individual REIT. *Convert* is a dummy indicating quarters after conversion to REIT status. Firm characteristics consist of a vector nine stock characteristics as in [Bennett et al. \(2003\)](#) and [Devos et al. \(2013\)](#) capturing institutional investors' prudent investment, liquidity and trading strategy motives. Institutional investors that are bound by their fiduciary responsibility may place more emphasis on prudent investment motives by holding less risky, older and high-yielding stocks. I control for three risk measures: systematic risk (beta), total risks and firm-specific risks. Liquidity is captured by firm size, share price and share turnover. Lastly, trading strategy is captured by past stock performance. The time effect is captured by the *Crisis* dummy variable that equals 1 for GFC years from 2007 to 2009 and 0 for non-crisis years. The firm-level fixed effects are absorbed by f_i , and ε is an error term.

In order to estimate the change in institutional investors' preference prior to and after conversion to REIT, I conduct subsample analysis on [equations \(1\) and \(2\)](#) by estimating separately subsamples prior to and after converting to REIT. The difference in coefficient values of these subsamples captures the change in preference of institutional investors with regard to the estimated firm characteristics before and after the conversion event.

4. Data and summary statistics

The primary data for this study come from two sources. Stock prices and firm characteristic variables are gathered from *Datastream*. Institutional ownership for each REIT for each quarter surrounding the conversion event comes from *S&P Capital IQ*. The ownership data for non-North American firms such as UK firms are sourced from global mutual fund portfolio reports. S&P Capital IQ reports tabulate current and historical company-level ownership information along with fund and institutional data. Institutional investors can be categorized into the following four main groups: bank trusts, insurance companies, mutual funds and investment advisors and other institutional investors ([Devos et al., 2013](#)).

[Table 3](#) displays summary statistics for final sample comprising 460 firm-quarter observations (23 conversion events). The average institutional ownership percentage by quarter is 59.3%. Beta is obtained from a regression with the REIT monthly return on monthly market return (*FTSE All Share Index*) over the previous 36 months. The average beta of 0.76 is lower than the 1.01 documented by [Devos et al. \(2013\)](#) for US REITs. Standard

deviation as measured over the previous 36 months using monthly REIT returns has a mean of 7.0%. The third risk measure, firm-specific risk (the squared difference between monthly returns and a property index (*GPR 250 UK*), summed by month and averaged over the most recent three months), has a mean of 0.4%.

Firm size, defined as total equity market capitalization, has a mean of £1.357bn. This is substantially larger than its median of £0.46bn due the presence of a few large REITs in my sample. Average age (number of years on *Datastream*) of the REIT in my sample is 25.7 years. Dividend yield, measured as the average quarterly dividend yield over the most recent four-quarters, averaged 3.7%. This is much lower than the 6.6% documented by [Devos et al. \(2013\)](#) for US REITs. Price is the most recent stock price and carries a mean of £468.77. Turnover, calculated as the ratio of monthly volume to the number of shares outstanding averaged over the most recent three months, has a mean of 7.4%. Lag return, the compound annual growth rate (CAGR) over the 36 months, has a mean of 8.1%.

[Table 4](#) reports the correlations between variables in the regression model. Focussing on the first two columns, I find significant positive correlations between institutional variables (ownership and number of institutional investors) and the conversion dummy. This implies the increased presence of institutional investors among listed property companies converted to REITs. In addition, I find positive significant correlations between institutional variables and liquidity variables (size, price and turnover) consistent with the prediction of the liquidity motive. The evidence of the prudent investment motive is somewhat mixed, as in [Bennett et al. \(2003\)](#). The negative (positive) significant relationship between firm-specific risk (age) and institutional variables (number of institutional investors) is supportive of the prudent investment motive. However, the correlation result between the beta and the number of institutional investors does not support this motive.

5. Results

5.1 Time series evolution of institutional ownership

[Figure 2](#) tracks the evolution of institutional ownership of converted REITs, FTSE All Share Index and Global Property Research (GPR) 250 UK Index during 2004–2016. FTSE All Share Index is a UK broad stock market index, while GPR 250 UK Index is a UK listed property securities index. These time series data were on an upward trend during the period leading to the formal adoption of the REIT regime on 1 January 2007. Listed property companies enjoyed significantly higher price appreciation compared to other listed companies in the United Kingdom, partly due to the strong expectation that the REIT regime will boost the appeal of the UK commercial property sector to a broader class of investors [\[5\]](#). The GPR250 UK Index increased by 117.4% between 2004Q1 and 2006Q4, much higher than

	Mean	Median	Std. dev.	Min	Max
Insti. ownership	0.593	0.615	0.251	0.073	0.998
No of insti. investors	131.23	102.0	107.29	10	426
Conversion (0,1)	0.502	1	0.501	0	1
Beta	0.762	0.756	0.470	-0.162	1.949
Standard dev	0.070	0.062	0.030	0.031	0.186
Firm-spec. risk	0.004	0.002	0.006	0	0.029
Firm size (£ million)	1356.96	456.84	1968.19	44.73	9146.38
Firm age (months)	25.67	23.46	14.78	3.75	45.50
Dividend yield	0.037	0.032	0.026	0	0.150
Price	468.77	306.69	508.45	33.0	2895.93
Turnover	0.074	0.057	0.063	0.032	0.242
Lag return	0.081	0.104	0.217	-0.513	0.588

Table 3.
Summary statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Log (insti. ownership) (1)	1.00												
Log (no of insti) (2)	0.58*	1.00											
Conversion (3)	0.47*	0.45*	1.00										
Beta (4)	0.07	0.39*	0.12*	1.00									
Std dev (5)	-0.01	0.00	0.27*	0.08	1.00								
Firm-spec risk (6)	-0.10*	-0.19*	0.26*	0.21	0.37*	1.00							
Log (firm age)0 (7)	0.04	0.45*	0.07	0.21	-0.02	-0.11*	1.00						
Yield (8)	0.03	-0.01	0.33*	-0.03	0.35*	0.36*	0.06	1.00					
Log (firm size) (9)	0.35*	0.75*	0.03	0.29*	-0.23*	-0.40*	0.36*	-0.24*	1.00				
Log (price) (10)	0.13*	0.51*	-0.14*	0.38*	-0.14*	-0.27*	0.48*	-0.39*	0.67*	1.00			
Turnover (11)	0.14*	0.40*	0.24*	0.22*	-0.03	-0.11*	0.13*	-0.15*	0.51*	0.37*	1.00		
Lag return (12)	-0.14*	-0.14*	-0.45*	-0.15	-0.61*	-0.30*	-0.04	-0.64*	0.14*	0.31*	0.04	1.00	
Crisis (13)	0.33*	0.48*	0.58*	0.28*	0.49*	0.40*	0.24*	0.38*	0.05	0.10	0.23*	-0.62*	1.00

Note(s): *denotes significance of the difference of correlation coefficients from zero at the 5% level

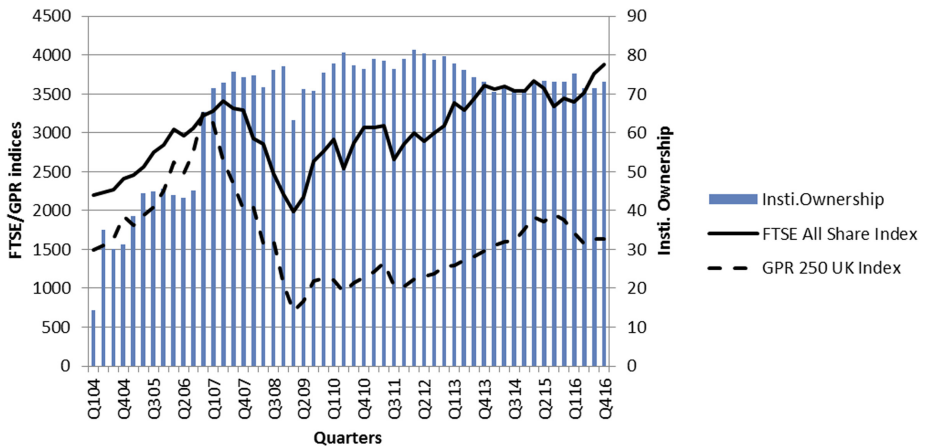


Figure 2. Evolution of institutional ownership, FTSE all share index and GPR 250 UK index during 2004–2016

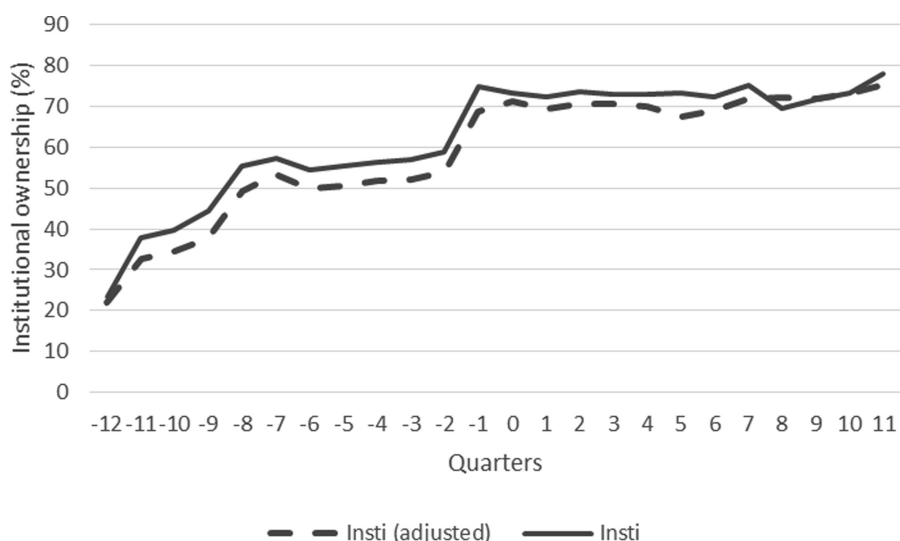
the 46.6% registered by the FTSE All Share Index during the same period. Institutional ownership of converted REITs was also in positive trajectory from the beginning of 2004. A clear surge in institutional ownership was observed during the last two-quarters prior to the adoption of the REIT regime, from 45.1% in 2006Q3 to 65.3% in 2006Q4. Unlike the stock and property market indexes, which experienced steep drops during the GFC in 2007–2009, the drop in institutional ownership is relatively mild. The percentage difference between the peak and the minimum point during the GFC for institutional ownership, GPR250 UK index and FTSE All Share index were -18.2% , -78.3% and -38.4% , respectively. A similar pattern is also observed by [Devos et al. \(2013\)](#) in their sample of US REITs during GFC. The post-crisis saw institutional ownership rebound to its pre-crisis levels.

5.2 Institutional ownership surrounding REIT conversion events

[Figure 3](#) tracks individual REITs' average institutional ownership three years before and after the conversion event. This figure tracks both the movement of the original institutional ownership (solid line) and the institutional ownership adjusted for the financial crisis impact (dashed line) by replacing ownership data that fell in the GFC period (2007Q3 to 2010Q1) with post-GFC period ownership data. Both lines are closely parallel with a correlation coefficient of 0.99. This mitigates the concern that institutional ownership differs systematically between GFC and post-GFC periods. Both measures of institutional ownership exhibit an upward trend prior to the conversion event. Similar to [Figure 2](#), a steep increase in institutional ownership occurred during the last two-quarters prior to conversion, from 58.8% ($-2Q$) to 75.0% ($-1Q$). Institutional ownership was stabilized around 70% after the conversion.

5.3 Univariate tests

[Table 5](#) reports firm characteristics before and after converting to REIT. Consistent with [Figure 3](#), aggregate institutional ownership is significantly higher after conversion. Except for beta and firm-specific risk, all variables that describe REIT characteristics are significantly different between the pre- and post-conversion periods. Due to REIT's restrictive regulations, I expect former property companies in my sample to become less risky, to pay more dividends and to become more liquid upon conversion to REIT. I find some support for these expectations, as property firms are indeed paying more dividends after



UK REIT
conversion and
institutional
ownership

Figure 3.
Institutional ownership
surrounding a REIT
conversion event

converting to REITs. However, standard deviation of returns is higher while proxies for liquidity (stock price and turnover) are lower post-conversion, which is contrary to my expectation. Firm size, a proxy for liquidity, is nevertheless higher in the post-conversion period.

5.4 Multivariate analysis

This section examines the impact of REIT conversion on the number of institutional investors and institutional ownership in a multivariate framework. The dependent variables are natural logarithm of number of institutional investors and the percentage of institutional ownership in REIT in Columns (1) and (2), respectively. As shown in the correlation matrix in Table 4, these two institutional variables are positive and significantly correlated to each

	Before conversion		After conversion	
	Mean	Median	Mean	Median
Institutional ownership(%)	45.4	42.31	71.56***	79.4***
Beta	0.693	0.664	0.686	0.746
Standard deviation (%)	6.52	5.77	7.57***	7.22***
Firm-spec. risk (%)	0.28	0.17	0.26	0.14
Firm size (£ million)	999.75	262.76	1096.33	409.14***
Firm age (years)	23.09	18.92	26.85**	23.92***
Dividend yield (%)	3.2	2.60	4.1***	4.3***
Stock price	386.62	300.5	318.76	187.0*
Turnover (%)	5.36	3.81	3.74***	3.13**
Lag return (%)	17.66	17.3	4.27***	5.9***

Note(s): ***, ** and * indicate whether mean (median) values are different from those in the pre-conversion period, using a *t*-test for differences in means (rank sum test for differences in the median) at the 10%, 5% and 1% level

Table 5.
Summary statistics by
conversion event

other at the 1% level (0.58). The key variable of interest is *Conversion (0,1)*, which takes a value of 1 for observations in the post-conversion period and 0 otherwise.

Table 6 reports the regression results. The coefficient for *Conversion (0,1)* is positive and significant in Columns 1 and 2. The coefficient values imply that the number of institutional investors and institutional ownership of property companies increased by 15.2 and 12.8% respectively after conversion to REITs. This suggests that institutional investors were attracted to the new REIT status of former property companies. Not tabulated here, I document positive and significant (1% level) announcement effects of REIT conversion events with cumulative abnormal returns of 1.17% (CAR, $-1, +1$) using market model event methodology. This suggests that the conversion events were well received by the stock market. This could be due to the potential benefits associated with conversion to REIT discussed earlier. The increase could also be driven by the ownership rules (five or fewer and 10% substantial shareholders rules) that prevent substantial ownership of REIT by corporate shareholders. There could be a switch in ownership structure between corporate shareholders and institutional investors prior to the conversion event in order to meet the REIT ownership requirement. Overall, these findings support the claims of the REIT regime's

Dependent variable	(1) Log (no of insti inv)	(2) Insti. ownership
Intercept	-2.273*** (-4.42)	-1.177* (-1.86)
Conversion (0,1)	0.152** (2.16)	0.128*** (3.29)
<i>Prudence motive</i>		
Beta	0.202*** (4.86)	0.027 (0.84)
Standard deviation	-0.225 (-0.22)	1.053* (1.79)
Firm-spec. risk	0.691 (0.55)	2.067 (1.50)
Log (firm age)	2.121*** (6.28)	-0.013 (-0.03)
Dividend yield	1.476 (1.05)	1.082 (1.38)
<i>Liquidity motive</i>		
Log (firm size)	-0.021 (-0.18)	-0.058 (-0.44)
Log (price)	0.503* (1.94)	0.697*** (4.38)
Turnover	-0.136 (-0.69)	0.604* (2.04)
<i>Trading strategy</i>		
Lag return	-0.136 (-0.69)	-0.265** (-2.53)
Crisis (0,1)	0.143*** (3.31)	0.116*** (3.55)
Firm effects	Yes	Yes
R ² within	0.72	0.54
No. obs	460	460

Table 6.

The determinants of institutional ownership

Note(s): *T*-statistics are reported in the parentheses with robust standard errors. ***, ** and * refer to statistical significance at 1%, 5% and 10%, respectively

proponents that the introduction of the REIT regime will attract greater participation from institutional investors and help in creating a larger investor base.

Turning our attention to other explanatory variables designed to capture institutional investors' investment motives, I do not find consistent support for institutional investors' prudent investment motive as proxied by risk variables (beta, standard deviation and firm-specific risk), firm age and dividend yield. None of the risk variables carry the correct negative and significant coefficient value in Columns (1) and (2). The significant positive coefficients of beta and standard deviation are contrary to the prediction of prudent investment motive. The positive and significant coefficient of the firm age variable in Column (1), on the other hand, supports the prudent investment consideration of institutional investors.

Institutional investors' preference for liquidity is supported by the positive and significant coefficients of price and turnover. The results could be driven by the large position and frequent trading of institutional investors that make them demand stocks with high liquidity (Gompers and Metrick, 2001). The negative and significant coefficient of lag return suggests that institutional investors in our sample were not momentum investors. The negative coefficient of lag return is inconsistent with the positive relationship between REIT performance and institutional ownership documented by Downs (1998) and Chan *et al.* (2003). The positive and significant *Crisis (0,1)* coefficient captures the significant rise in institutional ownership upon the introduction of the REIT regime in the United Kingdom in 2007 that coincided with the beginning of the GFC as shown in Figures 2 and 3.

Next, I examine whether institutional investors' preferences towards firm characteristics of former property companies changed after these companies were converted to REITs. I do this by splitting the full sample period into pre- and post-conversion periods. I formally test whether institutional investors have changed their investment preferences by comparing the coefficients between the pre- and post-conversion subsample using seemingly unrelated estimations. Columns (3) and (4) in Table 7 report subsample results for pre- and post-conversion, respectively. Column (5) presents the results of the coefficient comparison between pre- and post-conversion subsamples. The null hypothesis is that the coefficient estimates in the pre-conversion subsample equal those of the post-conversion subsample.

The results in Column (5) indicate that we can reject the null hypothesis of no change in institutional investors' preference for five of the nine characteristics. I observe somewhat mixed results for the prudent investment motives. In particular, the coefficients of beta and firm age show that institutional investors significantly decreased (increased) their preferences for securities with high systematic risks (older firms), suggesting that institutional investors value the prudent investment characteristics of converted REITs. However, the coefficients of standard deviation (firm-specific risk) suggest decreasing aversion (increasing willingness) towards risky securities by institutional investors. Interestingly, dividend yield, which is an important consideration for investing in REIT shares, is not significant and carries the wrong negative signs in both subsamples. However, the negative sign of dividend yield is consistent with previous studies on general firms and REITs (Gompers and Metrick, 2001; Bennett *et al.*, 2003; Devos *et al.*, 2013). Lastly, I observe a weaker preference for holding liquid securities proxied by Log (Price) after the conversion event. This finding is inconsistent with the transaction cost prediction, wherein institutional investors have a stronger preference for liquidity, as holding of REIT shares increases in the post-conversion period (Ciuchetti *et al.*, 2002).

Collectively, these findings suggest institutional investors changed their preference for risk, firm age and liquidity after the conversion event by placing more emphasis on firm-specific risk and firm age and less emphasis on systematic risk and liquidity [6]. The finding on the change in preference for liquidity may capture institutional investors' perceived increase in former property companies' liquidity after the conversion event.

Dependent variable	Institutional ownership		Coefficients comparison test (5) Chi-square value
	(3) Pre-conversion	(4) Post-conversion	
Intercept	0.119 (0.09)	-0.698 (-1.48)	
<i>Prudence motive</i>			
Beta	0.202*** (3.76)	-0.023 (-1.33)	22.45***
Standard deviation	-4.132** (-2.68)	0.148 (0.33)	9.74***
Firm-spec. risk	-5.838 (-1.58)	2.755** (2.49)	6.85***
Log (firm age)	-0.883 (-0.91)	0.721** (2.15)	5.06**
Dividend yield	-0.265 (-0.15)	-0.573 (-1.55)	0.07
<i>Liquidity motive</i>			
Log (firm size)	-0.215 (-1.16)	-0.076 (-0.79)	0.58
Log (price)	0.894*** (2.84)	0.292** (2.09)	4.89**
Turnover	0.138 (0.27)	-0.070 (-0.68)	0.37
<i>Trading strategy</i>			
Lag return	-0.061 (-0.30)	-0.070 (-0.68)	0.00
Crisis (0,1)	0.336*** (3.72)	0.003 (0.17)	12.26***
Firm effects	Yes	Yes	
R^2 within	0.36	0.21	
No. obs	229	231	

Table 7.
Change in institutional preferences upon conversion to REIT

Note(s): *T*-statistics are reported in the parentheses with robust standard errors. Chi-square value *** and ** refer to statistical significance at 1% and 5%, respectively

6. Conclusions

This study is the first to examine the impact of conversion to REIT status on the dynamic of institutional ownership. Focussing on a sample of UK listed property investment companies that chose to convert to REITs, I find institutional ownership increased by 12.8%, while the total number of institutional investors increased by 15.2%, upon conversion to REITs. This implies that the REIT structure managed to attract the interest of institutional investors. Similar to [Bennett et al. \(2003\)](#), I find consistent evidence supporting the liquidity preference of institutional investors in holding REIT shares. This preference for liquidity is, however, reduced in importance (though still significant) after the conversion event, where institutional investors are found to be more willing to hold less liquid REIT shares. This change in preference reflects the perceived increase in the liquidity of converted REITs by institutional investors.

Findings from this study have implications for countries that are considering introducing the REIT structure into their capital market. Evidence from the UK market reveals that the REIT structure does increase the appeal of property securities to institutional investors. All else being equal, this should lead to greater liquidity and valuation for listed property securities. Findings from this study are also valuable to countries without a formal

conversion mechanism (e.g. Japan and Singapore). The UK experience suggests that the existence and the relaxation of REIT conversion rules can significantly reduce the entry barriers for existing property companies to become REITs, thus improving the overall transparency and liquidity of the indirect property market.

The acceptance of UK REITs by institutional investors also has implications for converted REITs' financing policies. The quality certification of institutional investment and the access to the REIT brand may allow converted REITs to have better access to debt and equity markets at a lower cost compared to their pre-conversion period. Research from the US REIT sector has shown that cost of going public is lower for IPO issues with significant institutional participation (Ling and Ryngaert, 1997). Moreover, US REITs are found to raise more equity and debt (frequency and dollar value) in the post-1990 period, during the time at which the ownership of REIT shares was dominated by institutional investors.

I contend that the validity of the main finding of the positive impact of conversion on institutional variables is sound based on convincing graphical evidence supported by an event study approach that addresses the endogeneity problem associated with firms' choice to convert to REITs. It would certainly be interesting to expand this study to other REIT regimes with conversion rules and examine the impact of REIT conversion on the ownership structure of different types of institutional investors. I leave the generalizability of my conclusions, which are drawn from a small sample of converted REITs in the United Kingdom, to future research.

Notes

1. Devos *et al.* (2013) report that institutional investors owned an average of 47.32% of US REIT shares during 2004–2010. In Asia, Wong *et al.* (2013) show that institutional investors collectively owned 44.8% of the Asian REIT IPO shares.
2. REITs in Singapore and Japan in Brounen's sample were formed through the IPO process, not through conversion of existing listed companies. The pre-conversion firm characteristics for Singapore and Japan REITs were actually obtained from non-REITs prior to the introduction of the REIT regime in these countries.
3. Specifically, UK REITs must distribute 90% of their net property rental income, at least 75% of a REIT's total assets and net profits must be derived from the property rental business and they cannot be controlled by five or fewer shareholders (a single shareholder limit of 10%). In addition to these, UK REITs have to be listed on a recognized exchange (i.e. no private REITs) and maintain an interest coverage ratio of at least 1.25 times measured by the ratio of property profits to financing costs.
4. There were in total nine REIT IPOs during our study period of 2007–2016. The mean underpricing of seven IPOs for which we have information is 6.1% (median: 2.0%).
5. The REIT concept was first acknowledged in the pre-budget report of 2003 and became the subject of draft legislation in December 2005.
6. Not tabulated here, I have also experimented with Log (No of institutional investors) as the dependent variable. Similar to Table 4, I find institutional investors place less emphasis on systematic risk and liquidity after the conversion event. However, unlike Table 4, we find institutional investors place more emphasis on dividend yield (positive and significant) during the post-conversion period. We also find institutional investors put significantly less emphasis on firm size and trading strategy under this regression specification.

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