

Linkage of Executive Stock Ownership and Focus on Financial Performance: An Empirical Review on US (Real Estate Investment Trusts (REITs))

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***Abstract:** In this research, we examine the effect of managerial ownership on the financial performance of REITs from the US financial market. Our results demonstrate that there is a positive relationship between focus and financial performance in this sector that are consistent with the findings in current literature. Impact of managerial ownership, however, is weak on REITs performance providing direct support for the convergence-of-interests hypothesis. We also examine the curvilinear relationship between firm performance and managerial ownership already documented in the literature. We find no support of any relationship in the REITs sector providing evidence against the entrenchment hypothesis. In addition, when agency conflicts drive the increase in focus strategy is investigated, we find that the agency conflict explanation for increase in focus strategy is warranted.*

***Keywords:** REITs, Executive Ownership, Performance*

***JEL Classification:** G21, G30, G34, C21*

1. Introduction

Improving financial performance is one of the key measures of management's performance in the corporate world as shareholders expect that the management serves the best interest of the shareholders. Among various strategic actions, focus on core businesses or diversification in operations is widely chosen as one of their taken actions

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to improve financial performance. Typically, mergers and acquisition activities of a firm are the means of diversification in operations and such activities have been widely observed in the early 1950s, 60s, and 70s to create conglomerates and to attain financial goals. This trend however, has reversed (Berger and Ofek 1995) and focus in business has emerged as a new trend where, management specializes through concentration on core businesses, diversifies in multiple profitable operations through mergers and acquisitions or divests unrelated business segments (See Comment and Jarrell 1994; Liebeskind and Opler 1995) to improve financial performance. Argument in favor of diversification is that it enhances firm value due to the opportunity for economies of scale, more monopoly power, complementarity in research and basic technological expertise, increased efficiency of managerial skills, and reducing the probability of companies' failure, especially when diversifying in different lines of unrelated businesses. However, the significant challenge that the corporations face from such action is the moral hazard problem. It is widely argued that the management tends to maximize its personal interest by creating a giant corporation, undertaking value-destructive investments by acquiring firms, and or engaging in negative NPV projects (Jensen 1986). Management may also overinvest in financially weak assets to maximize personal interest rather than serving the best interest of shareholders (Stulz 1990). Pioneers of the agency theory identify diversification programs as the result of a manager pursuing his/her own interest. To eliminate such agency problem, shareholders can adopt a mechanism that encompasses ownership on firm as a part of executive compensation. Increased level of managerial ownership should substantially lower the agency conflict and improve financial performance.

Although there is extant literature addressing the issue of managerial performance of focus strategy or diversification strategy with and without executive ownership as part of managerial compensation in different corporate sectors, it however, remains relatively unexplored in the Real Estate Investment Trusts (REITs) sector. Our goal, hence, is to investigate the impact of increase in focus strategies and managerial ownership on the financial performance of REITs only to fill the gap in the literature. It should further shed light to the existing literature whether the focus of strategy or diversification creates value for the firm in REITs. We also investigate whether agency conflict is a critical factor in driving the increase in focus strategies to test both the entrenchment hypothesis and the convergence-of-interests hypothesis.

We choose REITs due to its unique factors (tax-exemption, restrictions on dividends, governance and structural requirements) that relate only to the REITs industry and affect the competitive status of these entities and, hence, the performance of REITs. REITs have unique governance and control system, which might cause the results, especially the effect of managerial ownership on performance, to be different from those in previous studies. REITs are typically managed by Trustees who hold legal titles of the property of

the trust and who have rights and powers which meet IRS test of centralized management (IRS Regulation 301.7701-2). IRS regulation also asserts that the trustees must have continuing exclusive authority over the management of the trusts, the conduct of its affair, and the management and disposition of the trust property. However, in order to comply with the requirement that the income be passive, REITs may not derive income from the active operation of a business and the REIT may hire independent contractors to manage REIT properties. Additionally, REITs sponsors usually use REITs as a captive finance company in order to finance their real estate activities. Also, REITs directors sometimes transfer their operational authority to the REITs' advisor firm, which is either owned by REITs insiders or is a subsidiary of the REITs. A REIT advisor might enhance the productivity of the REIT by, for example, improving the operating efficiency through modernization programs. A conflict between advisors and shareholders of REITs might arise due to the possibility that advisors might transact with the REIT they supervise. Given these unique factors in the REITs sector, it would be interesting to explore whether the general results obtained in previous studies on other industries and sectors hold in REITs sector.

Rest of the paper is organized as follows. Section 2 offers brief survey of literature. Section 3 discusses the data and methodology. Section 4 details the empirical findings. Conclusion is presented in section 5.

2. Literature Review

There is extant literature on firm diversification and the empirical findings on performance and diversification are however, inconclusive. Montgomery (1982) finds that diversification enhances firm performance only in high-profit industries. Schipper and Thompson (1983) also show a positive NPV in diversification project announcements. Langetieg (1978), on the other hand, finds that diversification, on average, offers a negative performance over the period of 1-24 months. Capozza and Seguin (1999) analyzing project level cash flows in REITs industry also observe a negative effect from diversification. Montgomery (1994) concludes from empirical literature that there is "a neutral, negative, not a positive, relationship between diversification and firm performance". Lang and Stulz (1995) and Steiner (1996) also find a strong negative relationship between value and diversification. Ofek and Berger (1995) find that diversified segment firms are less profitable than single-segment firms, while the related diversification has less negative effect on profitability than unrelated diversification.

The literature on firm's focus strategy are generally positive. Lang et.al. (1995) document positive market response when the firm divests assets in order to focus more on core business and to get rid of unprofitable assets or slowly growing businesses. Kose and Ofek (1995) find evidence that increase in focus leads to more efficiency in the seller's

remaining assets. This is mainly due to the elimination of the negative synergies with the sold assets and/or to the increased efficiency resulting from better allocation of company's resources. Comment and Jarrell (1995) show a positive association between increase in focus and stock returns. Morck et. al., (1990) find that the related diversification (focus increase) is rewarded by a positive stock market reaction while the unrelated diversification (focus decrease) resulted in a negative stock price reaction. Leibeskind and Opler (1995) document evidence that the agency problem is a main reason that animates managers in recent years to opt for increase in focus strategy. Ofek and Berger (1995) document a simultaneous relation between increase in focus and firm profitability. John et. al., (1992) rationalize the profitability decline as a main reason for restructuring and increased focus in core profitable business. Huang (2014) finds that CEOs in diversified conglomerates are more likely to divest divisions in industries with less expertise in order to improve financial performance. Allgood and Farrell (2003) argue that a good CEO-firm match is associated with good firm performance. Maksimovic and Phillips (2002) find that firms differ in their ability to exploit assets, and thus, choose their industry exposures based on the comparative advantage they have in different industries. Maksimovic et. al., (2011) show that management's acquisition is focus driven for the long run better performance. Ang et. al.. (2013) find that CEOs tend to divest divisions with which they are less familiar and increase focus based on their expertise. Other related literature also supports that greater corporate focus improves shareholder value by selling assets to the more efficient user, mitigating information asymmetry, and improving investment efficiency (e.g., Hite, Owers, and Rogers, 1987; John and Ofek, 1995; Daley et. al., (1997); Desai and Jain, 1999; Krishnaswami and Subramaniam, 1999; Matsusaka and Nanda, 2002; Dittmar and Shivdasani, 2003; and Ahn and Denis, 2004 among others).

There is also a large body of research in the area of ownership structure and its impact on the performance of business entities. Denis et al (1997) document that there is a negative relationship between degree of diversification and managerial ownership. Song and Walking (1993) show that managerial ownership enhances value since managers would share more costs associated with their value reducing decisions. Steiner (1996) investigates the relationship between firm value and ownership structure and finds that relation to be nonlinear. Morck et al (1988) also confirm a nonlinear relationship between managerial ownership and firm value. Belkaoui and Pavlik (1992) find that there is a negative relationship between performance and managerial ownership at a low range of managerial ownership (0-5%), a positive relationship at a higher range of managerial ownership (5%- 25%), and a negative relationship when managerial ownership is higher than 25%. Smith (1990) finds that increasing the equity holdings of corporate officers would increase their costs of shirking and consuming perquisites. McConnell and Servaes (1990) find that, at low levels of insider ownership, the relationship between firm

performance and the insider ownership is significantly positive. Finally, Cannon et. al. (1995) show in REITs industry that ownership structure significantly influences market performance of “advisor” REITs while ownership has no effect on return or market risk in “self-administered” REITs.

3. The Data and Methodology

Data from the real estate investment trusts (REITs) industry from the US financial market is used to investigate the above-mentioned relationships. The sample contains all real estate investment trusts (REITs) from 1993-1996. REITs have served as intermediaries that enable investors to invest in real estate assets. REITs usually invest and/or operate income-producing real estates as well as mortgages. The main restriction on the sample is the inclusion in the COMPUSTAT files. Also, there should be enough data about REITs regarding the assets distribution or a breakdown of assets in order to calculate the Herfindahl index. All data pertaining to managerial ownership are collected from the available proxy statements during that time period in order to insure that the managerial ownership statistics predate the diversification measures, hence avoiding any spurious correlation. The “increase in focus” measure that is used in this study is the asset-based Herfindahl index, as it is the only measurable indicator for the degree of firm focus. REITs’ assets breakdown and property data are provided by the Homer Hoyt Institute. These data are also used to calculate the asset-based Herfindahl index. There are a total of 74 REITs included in this research. To test for the long-term effect of increase in focus in the REITs industry, using a market-based measure, we develop a few hypotheses:

H(1): Increase in focus is positively related to REITs performance.

H(2): High managerial ownership is positively related to increase in focus.

H(3): Increase in focus is related to agency conflict.

H(4): Firms with relatively high profitability tend to increase their focus.

Hypothesis 1 is based on the theoretical argument that focusing on core business, either by divesting assets from peripheral businesses or by adding assets to core business, should elevate firm value as managers would be able to maximize their knowledge regarding the specific assets they manage. Hypothesis 2 tests the convergence of interest hypothesis. Hypothesis 3 is catalyzed by Jensen’s (1986) view regarding the agency cost rationalization for restructuring. Finally, hypothesis 4 is based on the conjecture that diversified firms may suffer low profitability and hence might turn around to increase its focus. The most commonly used index is the asset-based Herfindahl index (H), which can be calculated based on the number of the business segments of a firm, is calculated as follows:

$$H = \sum_{i=1}^n \left(\frac{Xi}{\sum_{i=1}^n Xi} \right)^2 \quad (1)$$

Where X_i is the segment i th asset and $i = (1,2,\dots,n)$. The asset-based Herfindahl index measures the degree to which a firm's assets are concentrated in a few segments. Its value ranges from zero and one. Apparently, the closer H is to one, the more concentrated the firm is with a few business segments, and hence, the more focused is the company on its core business. A focus of a REIT is increased if two conditions are met: (1) the Herfindahl index has increased over the period under consideration and (2) this increase is greater than 8 %. If so, that REIT is assigned a dummy variable equal to 1 and 0 otherwise.

We use a market-based financial performance measure to analyze REITs financial performance. Tobin's Q , as a market-based performance measure, represents a sharp measure of corporate value since it incorporates the value of all assets and, hence, it is supposed to reflect what investors expect of the benefits of increase in focus strategy, assuming that REITs' securities are priced in efficient capital markets. Tobin's Q can be defined as the ratio of the firm value to its assets replacement costs. The literature is filled with different versions of Tobin's Q . Since no consensus is reached as to the best Tobin's Q ratio, three different ratios of Tobin's Q is used in this research. The three versions of Tobin's Q that we use are as follows:

$$Q1 = (MVE + TA - EQ) / TA \quad (2)$$

$$Q2 = MVE / \text{Book value of net assets} \quad (3)$$

$$Q3 = (MVE + LTD + STD + PSALV) / TA \quad (4)$$

Where, MVE (market value of equity) is the product of stock price (year close) by the number of common stocks outstanding, TA is the Total assets, EQ is the book value of equity, LTD is the book value of long term debt, STD is the book value of the short-term debt, PSALV is the preferred stock at liquidation value.

The relationship between financial performance and both corporate focus and managerial ownership might be affected by some variables that are known to affect firm performance. So, it is important to control for these variables. These variables are firm size and firm profitability. Firm size is noted in the literature to have a negative effect on

¹ This ratio is used in David Hyland (1997). Chung and Pruitt (1994) use a comparable ratio of Tobin's Q that has about 96% correlation with Q of Lindenberg and Ross (1981).

² This measure also has been used by many. See for example Craswell et al. (1997). Also the correlation between this measure and that of Lindenberg and Ross (1981) is extremely high.

³ This measure is used other studies like Agarwal et al. (1996).

firm performance. That is, small firms tend to have higher market values while larger firms tend to have lower market values. Since Tobin's Q is determined by the market, firm size should be included in the model. Also, it could be the case that a high level of managerial ownership is due to the small size of a firm. The logarithm of the book value of total assets is used to proxy for REITs' size. In addition, it is also believed that accounting profit may influence Tobin's Q. Hence REITs' accounting profitability (defined as logarithm of operating income) is included in the model. Earnings per share is included in the regression model to explore its effect, if any, on REITs' performance. Since REITs distribute 95% of their profits in order to qualify for their tax advantage, EPS might have some effect on Tobin's Q. In order to examine whether increase in focus strategy enhances firm performance, the following regression is run including control variables:

$$Q = f \{ \text{Focus Measure} + \text{Control Variables} \}. \quad (5)$$

It is argued in the literature that the more the firm is diversified, the more likely its managers would conduct negative NPV investments, and hence, firm performance would be negatively altered (Jensen (1986, 1989)⁴). To explore this conjecture, the percentage of managerial ownership is utilized to proxy for the degree of the agency conflicts. To test this premise as well as convergence-of-interests hypothesis, the following cross-sectional regression is run:

$$Q = f \{ \text{managerial ownership} + \text{Control Variables} \} \quad (6)$$

Theoretical literature argues that the nature of the relation between managerial ownership and firm performance is non-monotonic (Fama and Jensen 1983). In order to examine this empirically supported conjecture in the REITs industry, which should enable us to test both the entrenchment hypothesis and the convergence-of-interests hypothesis, the following spline (piecewise) regression is run with knots of 10% and 25%:

$$Q = f \{ \text{managerial ownership} = < 10\% + 10\% < \text{managerial ownership} = < 25\% \\ + \text{managerial ownership} > 25\% + \text{control variables} \} \quad (7)$$

This parameterization of data is preferable to using dummy variables to indicate various blocks of managerial ownership, and it is intended to elude the dummy variable trap cited in standard econometric books. This can be executed by allowing for slopes to change at 10 % and 25%. These knots have no theoretical justification other than the guess of the researcher. Finally, in order to test for the validity of the agency conflict explanation of increase in focus strategy, the following logistic regression is run:

⁴ It is worth noting that the free-cash flow problem of Jensen (1986) is irrelevant to this analysis since the studied sample is REITs and these entities usually distribute more than 95% of their net income.

$$\text{Focus} = f \{ \text{managerial ownership} + \text{institutional holdings} + \text{pure outside} \\ \text{directors}^5 + \text{profitability} \} \quad (8)$$

In light of the reasoning of the entrenchment hypothesis and following McConell and Servaes (1990) and others, we also examine the curvilinear relationship between managerial ownership and REITs performance by running a spline regression. The following method is used to estimate the different cells of managerial ownership variables⁶:

$$\begin{aligned} \text{MO1} &= \text{managerial ownership if managerial ownership} < 10\%. \\ &= 10\% \text{ if managerial ownership} \geq 10\%. \\ \text{MO2} &= \text{zero if managerial ownership} < 10\% \\ &= \text{Managerial ownership} - 10\% \text{ if } 10\% \leq \text{managerial ownership} < 25\%. \\ &= 20\% \text{ if managerial ownership} \geq 25\%. \\ \text{MO3} &= \text{zero if managerial ownership} < 25\%. \\ &= \text{Managerial ownership} - 25\% \text{ if managerial ownership} \geq 25\%. \end{aligned} \quad (9)$$

To investigate whether the agency conflict has any impact on increase in focus strategy, a logistic regression is run⁷ that takes the following form⁸:

$$P(\text{increase in focus}) = F(\chi\beta) = \exp(\chi\beta) / (1 + \exp(\chi\beta)) \quad (10)$$

Where P(*) is the probability of increase in focus; χ is a vector of variables that have impact on increase in focus strategy; β is a vector of coefficients that should be estimated, and F is the logistic distribution. The maximum likelihood is usually used to estimate this type of model where the log likelihood function is given as follows:

$$\text{Log L} = \sum C_i * \log [F(\chi_i\beta)] + \sum (1-C_i) * \log [1-F(\chi_i\beta)] \quad (11)$$

Where C_i is a dummy variable and equals 1 if a REIT increases its focus⁹ and zero otherwise.

⁵ A pure outside director is one who has no relation whatsoever with the firm he sits in its board.

⁶ This method of modeling ownership cells is utilized due to its simplicity compared to other methods explained in econometric literature.

⁷ The reason for not using OLS is that OLS gives us the correlation between a dependent variable and some independent variables. However, OLS doesn't necessarily imply causal connection. Logistic regression, on the other hand, deals with the probability of the occurrence of a dependent variable given some independent variables, which we are interested in now.

⁸ Since the dependent variable is not continuous but a dichotomous, OLS is not an appropriate method for this test due to some statistical problems; the most notable of which is that OLS method fails to account for the qualitative difference between limited observation and continuous observation. For a complete discussion, refer to any econometric book.

⁹ A focus of a REIT is considered to be increased if its asset-based Herfindahl index has increased consistently over the period 1993-1996 and the index increase is at least 8%.

4. Empirical Results

Table 1 summarizes the sample data employed to draw the analysis. It is apparent that the distribution of the available data is almost symmetrical since there is an insignificant difference between mean and median. Gray directors, on average, represent about 14% of the total directors and about 19% of outside directors.

Table 1: Summary Statistics of the Available Data

	Mean	Median	Max.	Min	STD	OBS
Managerial Ownership	0.11	0.1	0.44	0.01	0.1	74
# of Directors	7.78	7	12	2	1.86	74
Institutional Holdings	0.20	0.1505	0.64	0	0.18	74
Outside Directors	5.74	5	11	2	1.84	74
Gray Directors	0.94	1	4	0	0.95	74
Assets (thousands)	897607	711909	5895906	33354	808268	74
% of Pure Directors	0.64	0.59	3.5	0.33	0.37	74

Pure directors, on the other hand, represent about 64% of the total directors and about 86% of outside directors. As expected, institutional investors have, on average, more equity stake than managers do.

4.1 Increase in Focus and Financial Performance of REITs

One of the goals of this research is to uncover the impact of increase in focus on financial performance in REITs industry. This is accomplished by running the regression: Tobin's $Q = f$ {increase in focus + some control variables}. Table 2 shows the results of this regression¹⁰. In order to test for the magnitude of the effect of the increase in focus on corporate performance, the first three regressions are run with only the control variables.

Table 2: The Impact of Increase in Focus Strategy on REITs' Performance

Dependent Variable	Q1	Q2	Q3	Q1	Q2	Q3
	1	2	3	4	5	6
Intercept	2.0614 (.0316)	2.711 (.029)	2.4342 (.0119)	1.6164 (.0251)	2.2139 (.0198)	1.9848 (.0065)
Focus				.2259 (.0001)	.2524 (.0002)	.2282 (.0001)
log(TA)	-.3363 (.006)	-.1929 (.1473)	-.3586 (.0048)	-.2264 (.0249)	-.07005 (.5357)	-.2475 (.0216)
log(OI)	.346 (.0036)	.1001 (.4805)	.3464 (.0046)	.2361 (.0104)	-.0227 (.8431)	.2354 (.0166)
EPS	.0586 (.4604)	.206 (.0209)	.0581 (.4553)	.0883 (.2505)	.2393 (.0049)	.0882 (.2396)
Adjusted R-Square	.19	.15	.19	.33	.28	.33
R-square	.22	.19	.22	.37	.32	.37
P(F-statistic)	(.0005)	(.0024)	(.0005)	(.0000)	(.0000)	(.0000)

¹⁰Since we have a cross-sectional data, Heteroscedasticity is significant and since it is of unknown form, it is corrected by using White's (1980) consistent covariance matrix.

Then, the last three regressions add the focus variable to see its contribution as measured by the adjusted R-Square. All linear models in this table have high explanatory power, given the P-values of the F-statistic. The first and the third regressions show that all control variables, except EPS, are significant in explaining REITs performance. Regression 2, which employs Q2, shows the log (TA) to be insignificant. Adding the focus variable has caused the adjusted R-Square to increase by about 60%. Also, the focus variable turns out to be significant. Regressions 4 and 6 are similar in terms of the significance of the included variables. Both log (TA) and log (OI) are significant while EPS is not. However, log (TA) and log (OI) are insignificant while EPS is significant in regression 5. The key finding from the analysis is that the focus variable is significant at all regressions and has a positive effect on REITs performance as expected. Our results are similar to the findings of existing literature (Capozza and Seguin (1999), Comment and Jarrell (1995) and John and Ofek (1995).

Table 3 replaces the level of profitability, operating income, with two ratios of profitability, return on assets (ROA) and return on equity (ROE), and adds operating return on assets (OROA) as a control variable. The focus variable is still significant at all regressions. ROA is entered in the first three regressions and is always significant. ROE in regressions 4, 5, and 6, however, is not significant in explaining REITs performance.

Table 3: The Impact of Increase in Focus Strategy on REITs Performance

Dep. Var.	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
	1	2	3	4	5	6	7	8	9
Intercept	.2465 (.6406)	.6455 (.5206)	.5625 (.2579)	1.0225 (.0757)	1.722 (.0355)	1.3818 (.0162)	-.0572 (.9346)	.9656 (.4173)	.3095 (.6484)
Focus	.1939 (.0001)	.1436 (.0035)	.1899 (.0001)	.2441 (.0001)	.2234 (.0007)	.2484 (.0001)	.1865 (.0001)	.197 (.0033)	.1884 (.0001)
log(TA)	.0397 (.1064)	-.012 (.8025)	.0198 (.3875)	.0077 (.7796)	-.055 (.1729)	-.0132 (.6318)	.046 (.1494)	-.0258 (.6401)	.0243 (.4365)
ROA	6.6662 (.0167)	9.5823 (.0005)	7.2174 (.007)						
ROE				1.0305 (.3074)	1.1499 (.1777)	.9383 (.335)			
OROA							6.128 (.0046)	3.9729 (.1399)	6.1503 (.0038)
Adjusted R-Square	.44	.53	.48	.24	.18	.24	.38	.19	.38
R-square	.46	.55	.51	.27	.21	.27	.41	.22	.41
P(F-statistic)	(.0000)	(.0000)	(.0000)	(.0000)	(.0009)	(.0000)	(.0000)	(.0006)	(.0000)

Notes: Numbers in parentheses are probability values testing the hypothesis that Coefficients are zero. Focus = Dummy variable = 1 if a firm has increased its focus over the period (1992-1996) and = zero otherwise. TA = Book value of total assets. ROA = Return on Assets, ROE = Return on Equity, OROA = Operating Income/Total Assets, Q1, Q2, Q3 are defined previously.

The OROA in regressions 7 and 9 is significantly positive, as expected, while it is insignificant in regression 8. Also, log (TA) becomes insignificant at all regressions. These results are a direct support to the findings of some existing literature (Comment and Jarrell (1995) and John and Ofek (1995)). According to Warnerfelt and Montgomery (1988), one potential reason for the positive relation between increase in focus and REITs performance is that the conglomerate firms are not able to transfer their competencies to a host of different markets, and, hence, the realized synergies are negative. The evidence in this study, in part, rejects the *weak* evidence documented by Lang and Stulz (1994), which says that in some industries that have different characteristics, the relationship between increase in focus and firm performance might be altered.

4.2 Managerial Ownership and Financial Performance of REITs

The agency theory postulates that the level of managerial ownership could be an indicator to the degree of the agency conflict between management and shareholders. The higher the managerial ownership level, the more the interests of managers and shareholders are aligned, and vice-versa. Hence, the level of managerial ownership might have a positive relationship to firm performance. The theoretical work of Jensen and Meckling (1976) suggests this type of relationship. Table 4 shows the results of testing the relation between managerial ownership and firm financial performance¹¹. For comparison purposes and to show the effect of the managerial ownership on REITs performance, regressions 1, 2, and 3 are run with control variables only. All the first three linear models with control variables are significant. Also, both of the control variables are significant, which supports the previous literature regarding the positive relationship between firm size and performance. However, using Q2 in regression 2 renders operating income to be insignificant and this causes the adjusted R-square to be down at 6% from 19% in regressions 1 and 3. Regressions 4, 5, and 6 add managerial ownership to test its contribution in increasing the adjusted R-square and hence its impact upon REITs performance.

Table 4: Shows the Impact of Managerial Ownership on REITs' Performance

Dependent Variable	Q1	Q2	Q3	Q1	Q2	Q3
	1	2	3	4	5	6
Intercept	1.9759	2.4102	2.3494	1.6245	2.2617	2.1216
	(.0341)	(.0591)	(.013)	(.0535)	(.0508)	(.0184)
MO				.6623	.3365	.4591
				(.0351)	(.3904)	(.1487)
log(TA)	-.3682	-.3048	-.3901	-.356	-.2987	-.3817
	(.0074)	(.0495)	(.0053)	(.0057)	(.0133)	(.0001)

¹¹ Since we have a cross-sectional data, Heteroscedasticity was found to be significant. And since it is of unknown form, it was corrected by using White's (1980) consistent covariance matrix.

log(OI)	.3917	.2611	.3918	.3934	.2604	.3922
	(.0043)	(.1106)	(.0045)	(.0001)	(.022)	(.0001)
Adjusted R-Square	.19	.06	.19	.23	.06	.21
R-square	.21	.08	.21	.26	.1	.24
P(F-statistic)	(.0002)	(.0392)	(.0002)	(.0001)	(.0000)	(.0003)

Notes: Numbers in parentheses are probability values testing the hypothesis that Coefficients are zero. , MO = Managerial Ownership, TA = Book value of total assets. OI = Operating Income, Q1, Q2, Q3 are defined previously.

Regression 4 shows that the managerial ownership variable is significantly positive at the 5% level. Also, both control variables, REITs size and profitability, are significant at the 1% level and have the expected sign. The adjusted R-square of the regression is 23% compared to 19% of regression 1. The results of this regression are direct evidence to the convergence-of-interests hypothesis of Jensen and Meckling (1976). In the REITs sector it is clear that the interests of shareholders and managers of REITs are more aligned at higher levels of managerial ownership. Our result contradicts those of Belkaoui and Pavlik (1992), who document insignificant coefficient of managerial ownership although they used profit, not Tobin's Q, as their dependent variable. However, Regressions 5 and 6, which use Q2 and Q3, respectively, show that both control variables have the correct sign and are significant at the 1% level, but managerial ownership turns out to be insignificant in explaining REITs performance, given p-values of 39% and 14% respectively supporting the finding of Belkaoui and Pavlik (1992).

In sum, the results of table 4, taken as a whole, show weak evidence of a positive effect of managerial ownership on corporate performance. Considering only Q1 causes managerial ownership to be significantly positive, but using Q2 and Q3 renders managerial ownership to be insignificant. This contradicts Smith (1990) who shows that increasing managerial ownership leads to an increase in corporate performance. This also does not conform to the predictions of Jensen and Meckling's (1976) theoretical arguments. and, hence, provide no support to the convergence-of-interests hypothesis. Furthermore, the results, taken as a whole, do not give any support to the entrenchment hypothesis of Fama and Jensen (1983). Potential reasons include, but not limited to, the effect of the unique governance system of REITs. Furthermore, it is possible that some reputational concerns by managers act to limit the agency costs, which explains the support for the convergence-of-interests hypothesis, but not the entrenchment hypothesis.

Table 5 replaces log(OI) with three different measures of profitability. These are return on assets (ROA), return on equity (ROE), and operating return on assets (OROA). The results regarding the statistical significance of the effect of managerial ownership is very weak on REITs' performance mirror those in Table 5.

Table 5: The Impact of Managerial Ownership on REITs Performance

Dep. Var.	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
	1	2	3	4	5	6	7	8	9
Intercept	.0131	.563	.4526	1.1115	1.9854	1.6036	-.3518	.8805	.1427
	(.9847)	(.5577)	(.4996)	(.2294)	(.0664)	(.0914)	(.6717)	(.4202)	(.8662)
MO	.7167	.4236	.5184	.5981	.276	.3971	.6337	.3173	.4306
	(.0828)	(.3344)	(.2135)	(.0767)	(.4775)	(.247)	(.0313)	(.405)	(.1479)
log(TA)	.0495	-.0085	.0247	.0045	-.0654	-.0218	.0569	-.0232	.0301
	(.115)	(.8536)	(.4156)	(.9208)	(.2126)	(.6346)	(.1523)	(.6543)	(.4552)
ROA	7.947	10.5326	8.4448						
	(.0023)	(.0001)	(.0011)						
ROE				1.3524	1.4828	1.2865			
				(.0075)	(.0114)	(.0125)			
OROA							7.4443	5.3403	7.4708
							(.0001)	(.0027)	(.0001)
Adjusted R-Square	.39	.51	.42	.11	.08	.07	0.33	.11	.3
R-square	.41	.53	.44	.14	.11	.11	0.36	.15	.33
P(F-statistic)	(.0000)	(.0000)	(.0000)	(.0146)	(.0393)	(.0458)	(.0000)	(.0118)	(.0000)

Notes: Numbers in parentheses are probability values testing the hypothesis that Coefficients are zero. MO, TA, ROE, OROA, Q1, Q2, and Q3, are defined previously.

The managerial ownership coefficient is significant only in regressions 1, 4, and 7; i.e., when Q1 is the independent variable. All the control variables are significant in all regressions. So, changing the control variables does not alter the significance of the variable of interest, managerial ownership. As an informal test, the residuals of the fourth regression in table 6 are scattered in the graph (Fig. 1) to test for any non-linearity. As it can be seen from the graph, there is no evidence of any nonlinear relationship between managerial ownership and REITs financial performance since the residuals are not scattered along the fitted regression line in a curvilinear fashion. The formal test of a curvilinear relationship between managerial ownership and REITs performance is examined by regressing Q on the three ownership cells formed earlier. Table 6 contains the results of the spline regression. Regressions 1, 2, and 3 are run with only control variables. Regressions 1, 2, and 3 show all control variables to be significant and have the correct sign. REITs size has a significant negative impact upon REITs performance, which corroborates the literature of the size anomaly. REITs accounting profitability also has a positive and statistically significant effect upon REITs performance. Regressions 4, 5, and 6 add three different cells of managerial ownership in order to test whether there is a statistically significant nonlinear relationship between managerial ownership and performance as is documented in the literature. Regression 4 shows that there is no curvilinear relationship between managerial ownership and REITs performance although the coefficients have the expected sign as in Morck et al. (1988). The coefficients in

regressions 5 and 6, although they have the expected sign, are not significant and the adjusted R-square values of models 4, 5, and 6 has not improved over those of regressions 1, 2, and 3.

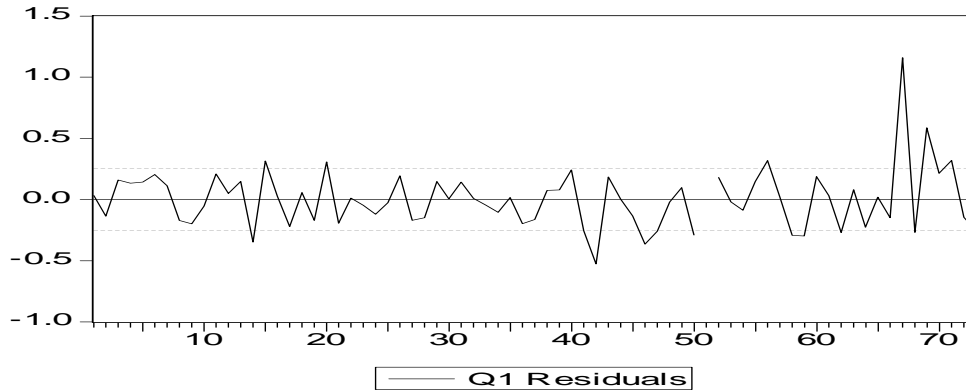


Fig. 1. The residuals of the fourth regression of table 6

Table 6: The Spline Regression Results of the Effect of Managerial Ownership on REITs'

Performance						
Dep. Variable	Q1	Q2	Q3	Q1	Q2	Q3
	1	2	3	4	5	6
Intercept				1.7631	2.1993	2.207
				(.0405)	(.0496)	(.0127)
MO1				-.6281	-.9148	-.6361
				(.549)	(.4904)	(.5552)
MO2				.9708	-.4567	.5757
				(.2223)	(.6325)	(.4706)
MO3				.6608	2.669	.8068
				(.7304)	(.263)	(.6784)
log(TA)	-.3682	-.3048	-.3901	-.3717	-.3494	-.3999
	(.0074)	(.0495)	(.0053)	(.0099)	(.319)	(.007)
log(OI)	.3917	.2611	.3918	.4083	.3279	.4123
	(.0043)	(.1106)	(.0045)	(.0058)	(.0504)	(.0063)
Adjusted R-Square	.19	.06	.19	.23	.07	.2
R-square	.21	.08	.21	.28	.13	.25
P(F-statistic)	(.0002)	(.0392)	(.0002)	(.0004)	(.0723)	(.0015)

Notes: Numbers in parentheses are probability values testing the hypothesis that Coefficients are zero. MO1 = managerial ownership $\leq 10\%$, MO2 = $10\% < \text{managerial ownership} \leq 25\%$, MO3 = managerial ownership $> 25\%$, TA = Book value of total assets. OI = Operating Income. Q1, Q2, Q3 are defined previously.

It establishes that a curvilinear relationship between REITs performance and managerial ownership could not be detected. The results of this table contradict the evidence documented in Morck et al (1988), Belkaoui and Pavlik (1992), and McConnell and Servaes (1990). In other words, the entrenchment hypothesis and the convergence-of-interests hypothesis are not supported in the REITs industry.

Table 7 employs different profitability measures to examine any probable changes in the results of table 6. The new control variables are return on assets (ROA), return on equity (ROE), and operating return on assets (OROA). As can be seen in table 7 the results are not different from those in table 6 in terms of the statistical significance of any nonlinearity in the relation between managerial ownership and REITs performance. However, REITs size (defined by $\log(\text{Total Assets})$) has become insignificant in explaining financial performance of REITs. All the new control variables are significant in all piecewise regressions.

Table 7 The Spline Regression results of the Effect of Managerial Ownership on REITs' Performance

Dep. Variable	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
	1	2	3	4	5	6	7	8	9
Intercept	.2387 (.7522)	.3312 (.6946)	.5956 (.4297)	1.5111 (.1122)	2.0364 (.0695)	1.9444 (.0478)	-.3995 (.6527)	.4113 (.7193)	.0089 (.9921)
MO1	.4719 (.5856)	.5962 (.5093)	.5448 (.5079)	-.5616 (.6488)	-.8413 (.5619)	-.573 (.6509)	-.136 (.9001)	-.5052 (.7179)	-.3151 (.9027)
MO2	1.3599 (.1165)	-.5882 (.4222)	.9192 (.2818)	2.0813 (.0431)	.4182 (.7256)	1.7007 (.1055)	.4896 (.6022)	-.8911 (.4625)	.0767 (.9362)
MO3	-.7394 (.5898)	2.1359 (.1547)	-.5413 (.7027)	-1.8509 (.2431)	.6319 (.7335)	-1.7257 (.2888)	1.1944 (.423)	3.1839 (.1004)	1.3693 (.3683)
$\log(\text{TA})$.0391 (.257)	.0028 (.9439)	.0174 (.611)	-.0123 (.7873)	-.0643 (.235)	-.0363 (.4413)	.0609 (.1457)	-.0003 (.9961)	.0374 (.318)
ROA	7.8045 (.0032)	10.703 (.0001)	8.3767 (.0014)						
ROE				1.3464 (.0077)	1.4619 (.0134)	1.2822 (.0131)			
OROA							7.729 (.0001)	6.4308 (.0008)	7.8664 (.0001)
Adj. R-Square	.38	.51	.4	.11	.06	.07	.32	.13	.29
R-square	.43	.54	.45	.17	.13	.13	.36	.19	.34
P(F-statistic)	(.0000)	(.0000)	(.0000)	(.0246)	(.1071)	(.0833)	(.0000)	(.0136)	(.0000)

Notes: Numbers in parentheses are probability values testing the hypothesis that Coefficients are zero. MO1 = managerial ownership $\leq 10\%$, MO2 = $10\% < \text{managerial ownership} \leq 25\%$, MO3 = managerial ownership $> 25\%$, TA = Book value of total assets. ROA = Return on Assets. ROE = Return on Equity, OROA = Operating Income/Total Assets Q1, Q2, Q3 are defined previously.

4.3 Increase in Focus and the Agency Conflict

Since the increase in focus strategy is associated with an increase in firm profitability, the agency conflict mitigating mechanisms should have positive effects on the increase in focus strategy. The mechanisms, that are used here, are the high level of managerial ownership (above 25%), the level of institutional holdings, and the percentage of pure directors to total directors. Investigating whether agency conflict has any impact on increase in focus strategy should serve two purposes: First, to shed some light on some determinants of increase in focus; and second, to establish a basis for a discussion whether agency conflict is one motivation to the recent trend of increase in focus. The results of the logistic regression are contained in the Table 8. Our results show that managerial ownership is significantly positive only when it exceeds 25% since its p-value is about 6%¹². The Likelihood ratio index is 5%, which implies that there are other factors affecting the probability of the increase in focus strategy. The average debt ratio appears to have no impact on increase in focus strategy in the light of its P-value. However, the probability (LR statistic) being 31% does not reject the joint hypothesis that all coefficients are zero. Regression 2 adds the institutional holdings and excludes managerial ownership below 25%. Given the available REITs data, it seems that the average debt level still has no effect on increase in focus strategy and the likelihood ratio index has decreased to 4%. We still have the MO3 statistically significant in affecting the increase in focus strategy given a p-value of 4% while institutional holdings appear to have no effect on REITs performance. Regression 3 examines the effect of three agency conflict mitigating mechanisms on increase in focus strategy; namely, the debt level, high managerial ownership, and the institutional holdings, after controlling for REITs profitability as it is represented by the operating return on assets (similar to John and Ofek (1995) and John et al. (1992)). Managerial ownership less than 25% (MO1 and MO2) are excluded and only high managerial ownership level (MO3) is included since it is significant in regressions 1 and 2. This also can be explained within the framework of a managerial risk-aversion perspective. As managers hold increasing shares of their firms, their human capital and/or their portfolios become more undiversified and, hence, tend to decrease firm risks.

¹² Note that the estimated coefficients cannot be interpreted as the marginal effect of the regressors on the dependent variable. Here, we are only interested in (1) the direction of the effect which depends only on the sign of the coefficient and (2) the significance of the coefficients' estimates.

Table 8 The Logistic Regression Results of How Agency Attributes Determine the Increase in Focus Strategy

Dep. Variable	Focus	Focus	Focus	Focus	Focus
	1_____	2_____	3_____	4_____	5_____
Intercept	-.8493	-.8513	-6.51	-6.0017	-9.2196
	(.3364)	(.1766)	(.0001)	(.0018)	(.0003)
MO1	.0242				8.8687
	(.9979)				(.4608)
MO2	-5.9985				-24.0034
	(.423)				(.0343)
MO3	20.2058	12.7023	16.0438	16.448	47.4656
	(.0631)	(.0411)	(.032)	(.0811)	(.0011)
DRAVG	1.455	1.5258	1.9727	1.8571	1.9457
	(.193)	(.1664)	(.0746)	(.0827)	(.0868)
INSHOLD		-.8072	1.6562	1.0886	2.3612
		(.6077)	(.3196)	(.5443)	(.193)
PP			2.0747		1.7677
			(.0875)		(.0441)
OROA			53.661	48.16712	73.7223
			(.0003)	(.001)	(.0003)
OUTDIR				.2379	.2112
				(.2155)	(.2307)
Lik. Ratio Index	.05	.04	.19	.17	.25
P(LR statistic)	(.3113)	(.2285)	(.0022)	(.0054)	(.0016)

Notes: Numbers in parentheses are probability values testing the hypothesis that Coefficients are zero. That is, they are p-values. MO1 = managerial ownership $\leq 10\%$, MO2 = $10\% < \text{managerial ownership} \leq 25\%$, MO3 = managerial ownership $> 25\%$, DRAVG = Average of Debt Ratios of 96 and 95 (Total Debt/Total Assets), INSHOLD = Institutional Holdings, PP = The percentage of pure directors to total directors. OROA = Operating Income/Total Assets, OUTDIR = Outside directors. Q1, Q2, Q3 are defined previously.

Comment and Jarrell (1995) document an inverse relation between beta and increase in focus, although not significant. Again, it seems that the institutional investor has no impact on the increase in focus strategy. The debt level turns out to be significantly positive in this regression. Also, MO3 is still keeping its significance. This model shows that REITs profitability has a significantly positive impact upon the increase in focus strategy. One reason to explain the insignificance of the institutional holdings is the potential endogeneity of ownership structure. An alternative interpretation relates to the implication of the analysis raised by Ross and Klein (1994). That is, the insignificance of the institutional holdings' coefficient might be due to the fact that most REITs' assets are

managed by professional companies. So, institutional investors invest in REITs without having to oversee investment advisors who, in many cases, take the operational authority from the board of directors. Besides, the market continually monitors and prices the effectiveness of public REITs' management. Furthermore, this model shows the proportion of pure directors to have a positive impact upon the increase in focus strategy.

This research argues that only the pure outside directors can practise quality monitoring on firm management. This is because that the pure outside directors do not have any relation with the firm on whose board they sit. Consequently, the pure outside directors are the only directors who can ask the difficult questions and hence can exercise effective monitoring on management. This is compared with the status of the gray outside directors who have some sort of relation with the firm on whose board they sit, hence, the quality of their monitoring might be affected by this relation. Since pure outside directors make their decisions solely to the benefit of shareholders and since increase in focus is beneficial to REITs shareholder, the percentage of the pure outside directors to total directors is added to the model to examine its significance. As the results of regression 3 show, the coefficient of pure directors is significantly positive at the 10% level. Thus, given the available data and the results, the pure outside directors appear to have a primary role in driving REIT firms to the increase in focus strategy. The likelihood ratio statistic is statistically significant at the 1% level, which rejects the joint hypothesis of all coefficients being zero. Regression 4 is similar to regression 3, except it excludes the proportion of pure directors and replaces it with the number of outside directors in order to examine whether the total number of outside directors enhances the shareholders' interests, evidence that was documented in the previous literature. The results show that debt level, managerial ownership above 25%, and REITs profitability are still significant and have the expected sign. However, institutional holdings and outside directors' coefficients are not significantly different from zero. This model has relatively high explanatory power given its LR index.

The last regression includes all variables. This model shows some sort of nonlinearity of the relationship between managerial ownership and the REITs increase in focus strategy. While MO2 is significantly negative, MO3 is significantly positive. Debt financing, pure directors and REITs profitability are all positively affecting factors on the increase in focus strategy. In the other hand, outside directors, institutional holdings, and low-level managerial ownership are all insignificant factors in affecting the increase in focus strategy in the REITs industry. This model has the highest explanatory power, 25%, compared to all previous models. The findings in this table add strong support to the agency conflict explanation for the increase in focus strategy and are in agreement with the agency theory, which suggests the debt level as an agency conflict mitigating mechanism. In other words, the higher the debt level, the less likely is the agency conflict and the more expected are the value-increasing decisions. Also, the results show a

positive effect of profitability on the increase in focus strategy. This corroborates the simultaneous positive relation between profitability and increase in focus strategy documented by Ofek and Berger (1995). More importantly, the results support Lang and Stulz (1995), whose analysis implies that firms divest unrelated assets, and, hence, increase their focus in order to provide relatively cheaper sources of financing due to the agency costs of other financing sources, such as the agency cost of debt.

5. Conclusion

We examined the effect of the increase in focus strategy as well as managerial ownership on the financial performance of REITs. Our results show that as REITs increase their focus to a fewer business segments or as they specialize in certain property type, their financial performance tends to improve significantly. This result adds to the current literature with same consensus that is reached regarding the positive impact of the increase in focus strategy in other industry and in REITs. Managerial ownership, on the other hand, has a statistically weak impact upon REITs performance. However, when added some control variables to the regression model, managerial ownership turns out to be significant in explaining REITs financial performance. Our findings in the REITs provide direct support for the convergence-of-interests hypothesis that shareholders' interests are aligned with those of managers at higher levels of managerial ownership.

We also examined the curvilinear relationship between firm performance and managerial ownership already documented in the literature. A curvilinear relationship between REITs performance and managerial ownership could not be detected that contradicts the evidence documented in Morck et al (1988), Belkaoui and Pavlik (1992), and McConnell and Servaes (1990). In other words, the entrenchment hypothesis and the convergence-of-interests hypothesis are not supported in the REITs industry. Furthermore, our results do not give any support to the entrenchment hypothesis of Fama and Jensen (1983). Potential reasons include, but not limited to, the effect of the unique governance system of REITs. Furthermore, it is possible that some reputational concerns by managers act to limit the agency costs, which explains the support for the convergence-of-interests hypothesis, but not the entrenchment hypothesis. In addition, whether agency conflicts are driving the increase in focus strategy is investigated. We find weak evidence of a positive effect of managerial ownership on corporate performance. This contradicts Smith (1990) who shows that increasing managerial ownership leads to an increase in corporate performance. Therefore, the results do not corroborate those that are documented in the literature, do not conform to the predictions of Jensen and Meckling's (1976) theoretical arguments, and, hence, provide no support to the convergence-of-interests hypothesis. Our results however, show that managerial ownership is significantly positive only when it exceeds 25% ownership. When considered the debt level as an agency conflict mitigating mechanism, the results show a positive effect of

profitability on the increase in focus strategy. This corroborates the simultaneous positive relation between profitability and increase in focus strategy documented by Ofek and Berger (1995). More importantly, the results support Lang and Stulz (1995), whose analysis implies that firms divest unrelated assets, and hence, increase their focus in order to provide relatively cheaper sources of financing due to the agency costs of other financing sources, such as the agency cost of debt. An interesting future research in this area would be offer a comparative analysis in REITs sectors, by categorizing sample into three categories: Equity REITs, Mortgage REITs, and Hybrid REITs.

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