# Board of Director Monitoring and Firm Value in REITs

*H. Swint Friday**

***Abstract.*** **This article examines the influence of board of director composition and characteristics on real estate investment trust (REIT) shareholder wealth as measured by firm market-to-book ratios. Results show that increased outside director representation on the board leads to increased market-to-book ratios up to a point. However, as outside representation becomes too large, the market discounts REIT shares. In addition, a positive relationship is observed between REIT market-to-book ratios and the dollar values of director ownership, providing support for alignment benefits associated with increased director stock ownership.**

## Introduction

The board of directors are appointed the responsibility of ensuring that management acts in the shareholders' best interest. This monitoring role involves activities such as ratifying top management decisions, hiring and firing senior managers, and approving compensation packages for these managers. Shareholders rely on outside directors to protect their interest from insiders pursuing non-value-maximizing agendas.

This agency problem may be particularly troublesome for real estate investment trusts (REITs), a form of closed-end mutual fund that invests primarily in real estate-related assets.[1] Transactions involving real property can be difficult for shareholders to evaluate and monitor because of the problems involved in determining fair market values. Unlike the securities market where closed-end mutual fund investments are made, the commercial real estate market consists of a wide range of heterogeneous, illiquid assets. An outside director must have a keen understanding of a REIT's geographic market, including economic trends, price appreciation expectations, financing information, environmental concerns and other property-specific information.[2]

This article examines the influence of REIT directors on shareholder wealth by directly measuring the shareholder pricing of board characteristics. Shareholder pricing of board characteristics is measured using a firm's market-to-book ratio, where the market-to-book ratio is defined as the market value of the firm divided by the

*Department of Finance, University of South Alabama, Mobile, AL 36688-0002 or sfriday@usamail.usouthal.edu.
**Department of Real Estate, Florida State University, Tallahassee, FL 32306-1042 or ssirman@garnet.acns.fsu.edu.

replacement value of the firm's assets. If the market perceives that certain board characteristics are effective mechanisms for maximizing shareholder wealth and for controlling agency costs, a positive relation should exist between REIT market-to-book ratios and levels of these alignment and monitoring mechanisms.

## Outside Directors and Firm Monitoring

Despite the widely perceived role of outside directors as firm monitors, the true impact of these outside directors on firm value is open to debate. Fama and Jensen (1983) contend that outside directors provide a means to monitor management activities through an increased focus on firm performance because they have an incentive to maximize the value of their human capital by maintaining their reputation for being effective monitors. Brickley and James (1987) support this contention, providing evidence that increased outside director representation reduces management perk consumption, while Weisbach (1988) reports that outside directors are more inclined than inside directors to fire senior managers for poor performance.

However, Patton and Baker (1987) question the resolve of outside directors to actively monitor top management who often select them as candidates for their board seats. Mangel and Singh (1993) point out that incentives exist for collusion between outside directors and top management to the detriment of outside shareholders. Furthermore, these managers can censor firm information that outside directors receive, thereby decreasing the value of their expertise and monitoring skills. Other studies question the relevance of outside director monitoring in the presence of other bonding and monitoring mechanisms such as the market for corporate control, the managerial labor market, ownership structure and properly defined compensation packages.[3]

Evidence provided by McIntosh, Rogers, Sirmans and Liang (1994) shows an inverse relation between the probability of top management changes and share-price performance for REITs. These results reveal that internal monitoring actions by directors can create shareholder wealth in REITs and support the widely held belief that outside directors serve to enhance shareholder value.[4]

REITs are often observed trading at a discount from their net asset value. That is, the ratio of the market value of equity to the underlying net asset value of the trust is less than one. These findings indicate that REIT investors perceive certain costs that lead them to price REIT shares at a discount relative to REIT underlying asset values. An adequate explanation for these discounts in REITs has not been forthcoming. However, evidence concerning discounts observed in stock and bond closed-end mutual funds identify high agency costs as a cause for increased fund discounts.

In addition to traditionally cited agency costs such as excess compensation, perk consumption and insider trading, other avenues exist for wealth expropriation by well-positioned REIT insiders. Officers, directors and large shareholders may siphon money away from shareholders through advising agreements, consulting contracts, property management agreements or exclusive right-to-sale agreements.

Transactions involving related parties can be particularly troubling for outside shareholders because it is difficult to determine the level of wealth expropriation by firm insiders. Providing evidence on the potential impact of these related transactions on shareholder wealth, Hsieh and Sirmans (1991) find that captive REITs underperform noncaptive REITs.[5] Analysis by Ang and Friday (1997) of the magnitude of these transactions for REITs reveals that the dollar values involved can be substantial, totaling billions of dollars and representing over 10% of average annual REIT asset value.

## Data and Initial Evidence

A sample of REITs for the period 1980 through 1994 is obtained from the National Association of Real Estate Investment Trust Factbooks. REITs are classified as either equity, hybrid or mortgage REITs according to their Factbook classifications.[6] To be included in the sample, a REIT must have data available on the Compustat AFC, AIE and AIR files and have proxy information available in the SEC Q-data files for any one of the years being examined. This screening process provided information for at least one year for seventy-five equity REITs, twenty hybrid REITs and forty mortgage REITs.[7]

### *REIT Market-to-Book Ratios*

Exhibit 1 contains descriptive statistics on sample sizes, market-to-book ratios and board of director composition by year for each REIT type. On average, equity REITs traded at a 13% premium, while hybrid and mortgage REITs combined traded at a 4% discount. Equity REITs traded at a premium in every year except 1991 when they traded at a 19% discount. Exhibit 1 also shows that seven of the eight years hybrid and mortgage REITs traded at a discount occurred after 1987.[8]

Equity REIT board sizes averaged 7.3 members, with an average of 50% being outside directors. Outside director representation ranged from a low of 34% in 1992 to a high of 60% in 1984 for equity REITs. Hybrid-mortgage REIT board sizes averaged 6.9 directors, with 48% being outsiders. The proportion of outsiders on hybrid-mortgage REIT boards ranged from 36% to 57% across the sample period.

### *Board of Director Composition and Characteristics*

Board of director composition is documented by categorizing directors as either insiders, affiliated, or outsiders. In addition, REIT audit, compensation, investment and nominating committee composition are documented. The North American Securities Administrators Association (NASAA) Statement of Policy for REITs defines independent directors as ‘‘those directors who are not affiliated directly or indirectly with the REIT, the sponsor, the advisor, or the property manager by ownership interest in, employed by, business or professional relationship with, or serves as an officer or director of such company or an affiliated business entity of such company.’’ An indirect relationship includes cases where a member of the

## Exhibit 1
## Summary Statistics

| | Equity REIT Group | | | | Hybrid-Mortgage REIT Group | | |
|---|---|---|---|---|---|---|---|
| Year Examined | Number of REITs | Market-to-Book Ratio | Number of Directors | Outside Directors (%) | Number of REITs | Market-to-Book Ratio | Number of Directors |
| 1980 | 16 | 1.06 | 7.2 | 55 | 10 | 0.94 | 8.2 |
| 1981 | 16 | 1.09 | 8.0 | 57 | 12 | 0.99 | 9.1 |
| 1982 | 16 | 1.13 | 7.4 | 56 | 10 | 1.02 | 8.3 |
| 1983 | 20 | 1.21 | 7.6 | 56 | 11 | 1.06 | 8.3 |
| 1984 | 17 | 1.48 | 8.4 | 60 | 12 | 1.12 | 7.8 |
| 1985 | 14 | 1.17 | 7.1 | 46 | 15 | 1.14 | 6.9 |
| 1986 | 22 | 1.24 | 7.6 | 48 | 14 | 1.02 | 6.3 |
| 1987 | 36 | 1.20 | 7.3 | 54 | 27 | 1.04 | 6.3 |
| 1988 | 40 | 1.16 | 7.5 | 51 | 27 | 0.90 | 7.2 |
| 1989 | 41 | 1.20 | 7.5 | 51 | 30 | 0.93 | 6.9 |
| 1990 | 36 | 1.10 | 7.2 | 50 | 31 | 0.91 | 6.5 |
| 1991 | 37 | 0.81 | 7.1 | 45 | 27 | 0.72 | 7.0 |
| 1992 | 50 | 1.03 | 6.2 | 34 | 31 | 0.75 | 6.7 |
| 1993 | 27 | 1.23 | 7.8 | 52 | 19 | 0.84 | 6.1 |
| 1994 | 21 | 1.12 | 7.5 | 56 | 13 | 0.82 | 5.6 |

Total observations: Equity REITs = 409 and Hybrid-Mortgage REITs = 289. Equity REITs weighted average: market-to-book ratio = directors = 7.3 and % outside directors = 50%. Hybrid-Mortgage REITs weighted average: market-to-book ratio = 92%, number of and % outside directors = 48%.

immediate family of the director has one of the previously mentioned relationships with the REIT or one of its affiliated companies.

Our analysis refines this definition by employing a three-way classification scheme similar to that employed by Byrd and Hickman (1992) to classify directors. Individuals principally employed by the REIT, the REIT's advisor or those engaged in ongoing business relations with the REIT are considered inside directors. Directors that serve as directors of companies affiliated with the REIT through a parent- or sister-company relation but have no other association with the REIT are classified as affiliated directors. Outside directors have no affiliation with the REIT other than their directorship and shareholdings.

The level of stock ownership, the number of other positions held in addition to their board seats and the tenure of each director at the REIT are also recorded. Directors who have greater ownership of REIT stock, hold more outside positions and have greater tenure should have more influence in the organization.

To evaluate the relation between REIT market-to-book ratios and REIT board characteristics, the equity and hybrid-mortgage REIT samples are partitioned into two groups according to their relative market-to-book ratios. The first group consists of REITs with high relative market-to-book ratios, while the second group contains REITs with low market-to-book ratios. We employ standardized annual market-to-book ratios using the following equation:

$$[MB(i,t) - MB(p,t)]/\sigma(MB(p,t)),$$

where $MB(i,t)$ is the market-to-book ratio of REIT $i$ for time $t$, $MB(p,t)$ is the average market-to-book ratio of the same type REITs for time $t$ and $\sigma(MB(p,t))$ is the standard deviation of the market-to-book ratios of the same type REITs for time $t$. The use of standardized market-to-book measures controls for variation in market-to-book ratios across time.

Summary statistics for board of director composition and director characteristics, along with difference in means tests between the high and low market-to-book ratio groups for the equity and hybrid-mortgage REIT samples, are reported in Exhibits 2 and 3. The high market-to-book equity REITs traded at a 50% premium, while the low group traded at a 24% discount. High market-to-book hybrid-mortgage REITs traded at a 15% premium, while their low market-to-book counterparts traded at a 31% discount. The proportions of high market-to-book REITs self administered is significantly higher than the number of low market-to-book REITs for both the equity and hybrid-mortgage REIT groups.

Over the period examined, information is available for over 4,500 director-years of service. The average number of directors on the board is significantly higher for the high market-to-book equity REITs than for their low market-to-book counterparts. In addition, the percentage of both inside and outside directors is greater for the premium group of equity REITs. However, the percentage of inside directors is lower for the

## Exhibit 2
## Difference-in-Means Analysis of Board of Director Characteristics for Equity REITs with High and Low Market-to-Book Ratios

| | High Market-to-Book Group | | | Low Market-to-Book Groups | | | |
|---|---|---|---|---|---|---|---|
| | Obs. | Mean | Std. Dev. | Obs. | Mean | Std. Dev. | Difference |
| Market-to-Book Ratio | 205 | 1.5 | 0.5 | 204 | 0.8 | 0.3 | 0.7 |
| **Panel A: REIT Control Structure** | | | | | | | |
| Self Administered | 205 | 70.2% | 45.8% | 204 | 40.2% | 49.2% | 30.1%* |
| Number of Directors | 205 | 7.8 | 2.6 | 204 | 6.8 | 2.0 | 1.0** |
| Inside Directors | 205 | 40.9% | 19.8% | 204 | 37.6% | 18.4% | 3.2%* |
| Affiliated Directors | 205 | 6.1% | 17.8% | 204 | 15.9% | 28.6% | −9.8%* |
| Outside Directors | 205 | 53.0% | 23.2% | 204 | 46.5% | 26.3% | 6.5%* |
| Outsiders on Key Committees | | | | | | | |
| Audit | 162 | 73.2% | 33.4% | 170 | 65.5% | 39.1% | 7.7%* |
| Compensation | 88 | 71.5% | 30.2% | 71 | 69.9% | 36.4% | 1.5% |
| Investment | 25 | 63.9% | 26.8% | 28 | 72.2% | 26.2% | −8.26% |
| Nominating | 28 | 52.4% | 29.4% | 27 | 52.9% | 39.1% | −0.50% |
| **Panel B: REIT Ownership Structure** | | | | | | | |
| Average Director Stock Holdings | | | | | | | |
| Insiders | 205 | 11.1% | 16.9% | 204 | 13.0% | 17.1% | −2.0% |
| Affiliated | 205 | 0.3% | 1.1% | 204 | 0.7% | 1.4% | −0.3%* |
| Outsiders | 205 | 3.8% | 6.6% | 204 | 3.5% | 8.5% | 0.3% |
| Average Director Stock Blockholdings Over 5% | | | | | | | |
| Insiders | 205 | 6.6% | 13.2% | 204 | 12.2% | 17.9% | −5.6%* |
| Outsiders | 205 | 1.0% | 3.3% | 204 | 1.4% | 7.3% | −0.4% |
| Number of Shareholders | 199 | 4,595 | 5,145 | 194 | 3,518 | 4,606 | 1,077* |

**Exhibit 2** (continued)

**Difference-in-Means Analysis of Board of Director Characteristics for Equity REITs with High and Low Market-to-Book Ratios**

| | High Market-to-Book Group | | | Low Market-to-Book Groups | | | |
|---|---|---|---|---|---|---|---|
| | Obs. | Mean | Std. Dev. | Obs. | Mean | Std. Dev. | Difference |
| Panel C: REIT Director Characteristics | | | | | | | |
| Total Outside Board Seats and Other Positions Held by Directors | | | | | | | |
| Insiders | 205 | 6.1 | 5.4 | 204 | 8.6 | 9.8 | −2.52** |
| Affiliated | 205 | 1.6 | 5.7 | 204 | 4.7 | 10.5 | −3.09** |
| Outsiders | 205 | 9.9 | 9.2 | 204 | 7.6 | 6.6 | 2.32** |
| Director Tenure | | | | | | | |
| Insiders | 200 | 12.1 | 7.3 | 191 | 7.8 | 5.5 | 4.29** |
| Affiliated | 34 | 7.3 | 4.0 | 71 | 6.8 | 5.1 | 0.43 |
| Outsiders | 193 | 8.5 | 5.4 | 175 | 5.5 | 3.3 | 3.04** |

**Significant at the 1% level.
*Significant at 5% level.

## Exhibit 3
**Difference-in-Means Analysis of Board of Director Characteristics for Hybrid-Mortgage REITs with High Relative Market-to-Book Ratios**

| | High Market-to-Book Group | | | Low Market-to-Book Groups | | | |
|---|---|---|---|---|---|---|---|
| | Obs. | Mean | Std. Dev. | Obs. | Mean | Std. Dev. | Difference |
| Market-to-Book Ratio | 145 | 1.15 | 0.3 | 144 | 0.69 | 0.2 | 0.5 |
| Panel A: REIT Control Structure | | | | | | | |
| Self Administered | 145 | 25.5% | 42.8% | 144 | 13.9% | 34.7% | 11.6%* |
| Number of Directors | 145 | 6.8 | 2.2 | 144 | 7.1 | 3.3 | −0.3 |
| Inside Directors | 145 | 40.7% | 17.5% | 144 | 45.1% | 21.3% | −4.5%* |
| Affiliated Directors | 145 | 6.9% | 15.5% | 144 | 10.5% | 19.4% | −3.6%* |
| Outside Directors | 145 | 52.5% | 21.8% | 144 | 44.4% | 26.1% | 8.1%* |
| Outsiders on Key Committees | | | | | | | |
| Audit | 126 | 84.9% | 25.2% | 105 | 69.2% | 35.4% | 15.8%* |
| Compensation | 34 | 87.6% | 15.6% | 17 | 84.4% | 29.2% | 3.2% |
| Investment | 12 | 57.2% | 25.0% | 31 | 60.1% | 21.9% | −2.9% |
| Nominating | 26 | 88.9% | 27.5% | 9 | 81.6% | 24.2% | 7.3% |
| Panel B: REIT Ownership Structure | | | | | | | |
| Average Director Stock Holdings | | | | | | | |
| Insiders | 145 | 7.2% | 9.9% | 144 | 12.9% | 26.6% | −5.7%* |
| Affiliated | 145 | 1.0% | 3.6% | 144 | 0.6% | 2.1% | 0.4% |
| Outsiders | 145 | 1.9% | 4.1% | 144 | 1.8% | 2.8% | 0.1% |
| Average Director Stock Blockholdings Over 5% | | | | | | | |
| Insiders | 145 | 5.6% | 9.7% | 144 | 5.2% | 10.7% | 0.5% |
| Outsiders | 145 | 0.9% | 2.8% | 144 | 0.4% | 1.6% | 0.6%* |
| Number of Shareholders | 144 | 5422 | 5694 | 137 | 6288 | 6674 | −866 |

**Exhibit 3** (continued)
**Difference-in-Means Analysis of Board of Director Characteristics for Hybrid-Mortgage REITs with High Relative Market-to-Book Ratios**

| | High Market-to-Book Group | | | Low Market-to-Book Groups | | | |
|---|---|---|---|---|---|---|---|
| | Obs. | Mean | Std. Dev. | Obs. | Mean | Std. Dev. | Differenc |
| Panel C: REIT Director Characteristics | | | | | | | |
| Total Outside Board Seats and Other Positions Held by Directors | | | | | | | |
| Insiders | 145 | 6.1 | 6.0 | 144 | 9.8 | 8.5 | −3.8** |
| Affiliated | 145 | 1.2 | 4.6 | 144 | 3.5 | 8.8 | −2.3** |
| Outsiders | 145 | 8.4 | 6.8 | 144 | 7.4 | 8.7 | 1.1 |
| Director Tenure | | | | | | | |
| Insiders | 144 | 10.3 | 7.4 | 143 | 6.8 | 5.4 | 3.5** |
| Affiliated | 30 | 6.8 | 3.8 | 52 | 5.6 | 5.0 | 1.2 |
| Outsiders | 142 | 6.3 | 4.5 | 123 | 5.7 | 4.0 | 0.6 |

**Significant at the 1% level.
*Significant at 5% level.

premium group of the hybrid-mortgage REIT sample, while the proportion of outside directors remains higher. Both low market-to-book equity REITs and hybrid-mortgage REITs have a significantly larger proportion of affiliated directors.[9]

Increased numbers of outside directors are associated with increased levels of monitoring, while increased numbers of inside directors are associated with greater expertise on firm operations. This positive difference for equity REITs provides evidence of market pricing of both increased outside director representation on the board as well as the increased expertise provided by inside directors. However, the negative difference for the proportion of inside directors on premium hybrid-mortgage REIT boards, combined with a positive difference for the proportion of outsiders on these boards, indicates that the increased expertise of inside directors is valued far less than the increased monitoring provided by outside directors.

Ownership as a percentage of the shareholder equity of affiliated directors is lower for the equity REITs trading at a premium, while no significant differences are observed between inside and outside director ownership for the premium and discount groups. This result contradicts arguments contending that increased director ownership should be priced because director alignment is increased. In addition, hybrid-mortgage REITs with low market-to-book ratios have higher levels of both inside and affiliated director ownership, providing evidence that the market is pricing insider entrenchment for these REITs.

The average number of positions, in addition to their board appointment held by inside and affiliated directors for both equity and hybrid-mortgage REITs, is significantly lower for the premium group. One explanation for this result is that those directors with fewer outside responsibilities are viewed as being more effective monitors because they have more time to devote to the success of the REIT. Another explanation is that the increased number of outside positions held by inside and affiliated directors increases the opportunity for conflicts of interest when transactions occur between these firms. The number of other positions held by outside directors is significantly higher for equity REITs trading at a premium. The number of other positions held by a director is a proxy for director reputation within the business community. This result indicates that the market places a premium on outside directors with greater reputations as proxied by the number of other positions held by the director. A similar relation does not hold for the hybrid-mortgage REIT group.

The tenure of inside directors is higher for equity REITs trading at a premium. Outside director tenure is higher for the premium groups of both the equity and hybrid-mortgage REIT samples. This result may be a function of the market pricing increased experience and power, which increases the monitoring capability of these directors, or it may be function of survivorship of directors from more successful REITs.

## Analysis of Market Pricing of Board Composition and Characteristics

To further examine the relation between REIT market-to-book ratios and firm board characteristics, the following general ordinary least squares model is employed:

$$\text{Market-to-Book Ratio} = f(\text{Board Composition and Characteristics}).$$

Methodology employed by Friday and Peterson (1997) to examine REIT cross-sectional return characteristics across time is used for this analysis. Regression analysis is applied on a cross-sectional basis for each of the years examined. The coefficients for each of the explanatory variables from this series of regressions are then averaged across time and a simple *t*-test is performed to determine if the average is significantly different from zero.

Panel A of Exhibit 4 provides results for the examination of the relation between REIT market-to-book ratios and the proportion of outsiders on the board using a piecewise regression for the equity and hybrid-mortgage REIT groups. Interpretation of the coefficient estimates for this model follow that of a standard piecewise regression, with a single knot at 50% outside director representation. For cases where outside director representation is less than 50%, the correct relation is represented by the coefficient estimate for $\%OUT < 50$. However, to determine the relation between REIT market-to-book ratios and board representation exceeding 50%, the coefficient reported for $\%OUT > 50$ must be added to the coefficient for $\%OUT < 50$.

A positive relation is observed between REIT market-to-book ratios and outside director representation as levels of outside board representation increase towards 50% for the equity REIT group. However, a significant negative relation is observed between outside representation exceeding 50% and pricing for this group. These results indicate that the market prices outside director representation up to a point, then the marginal benefits of increased monitoring provided by additional outside directors is outweighed by the loss of expertise provided by inside directors.

Panel B of Exhibit 4 contain analysis of the market pricing of inside director representation. No significant relation is observed between REIT market-to-book ratios and levels of inside director representation, contradicting the entrenchment hypothesis that the market punishes firms with higher insider representation on the board.

Panel A of Exhibit 5 provides results for the analysis of the relation between REIT market-to-book ratios and director ownership as a percentage of shareholder equity. No significant relationship exists between REIT market-to-book ratios and inside and outside director ownership as a percentage of shareholder equity. However, a significant negative relation is found for affiliated director percentage ownership providing evidence of potential agency conflicts.

Panel B of Exhibit 5 shows the relationship between REIT market-to-book ratios and the natural log of total dollar values of director stockholdings. The dollar value of director holdings represent an absolute measure of the wealth at stake in the firm for each director. A significant positive relation exists between REIT market-to-book ratios and the dollar values of inside and outside director ownership for the equity REIT group. These results provide evidence of increased alignment by inside directors and greater monitoring for outside directors as the amount of wealth they have at stake in the firm increases. A similar result is not found for the hybrid-mortgage REIT

## Exhibit 4
## OLS Analysis of the Market Pricing of Director Representation for Equity and Hybrid-Mortgage R

| | Obs. | Intercept | *t*-Stat | *%OUT* < *50* | *t*-Stat | *%OUT* < *50* |
|---|---|---|---|---|---|---|
| Panel A: Outside Representation | | | | | | |
| Equity | 404 | 0.979** | 7.8 | 0.005* | 2.0 | −0.007* |
| Hybrid-Mortgage | 286 | 0.995** | 8.0 | 0.001 | 0.4 | −0.003 |
| Panel B: Inside Director Representation | | | | | | |
| Equity | 404 | 1.051** | 12.2 | 0.003 | 1.4 | −0.003 |
| Hybrid-Mortgage | 286 | 1.043** | 16.9 | −0.001 | −0.7 | 0.007 |

*Significant at the 5% level.
**Significant at the 1% level.
The coefficient estimates for *%OUT* < *50* represent the relation between market-to-book ratios and outside director representa controlled boards. The relation between market-to-book ratios and outside director representation on outsider controlled boards summing the coefficient estimates for *%OUT* < *50* and *%OUT* > *50*. The coefficient estimates for *%INS* < *50* and *%INS* > *50* are t except these coefficients represent inside director representation on outside and inside controlled boards.

**Exhibit 5**

**OLS Analysis of the Market Pricing of Board of Director Percentage and Total Dollar Value of Stock Ho**
**Equity and Hybrid-Mortgage REITs**

| | Obs. | Intercept | *t*-Stat | *%OWN-INS* | *t*-Stat | *%OWN-DOA* | *t*-Stat | *%OWN-O* |
|---|---|---|---|---|---|---|---|---|
| Panel A: Board of Director Percentage Stock Ownership | | | | | | | | |
| Equity | 404 | 1.200** | 23.4 | −0.249* | −1.8 | −10.533** | −2.9 | 0.887 |
| Hybrid-Mortgage | 274 | 1.034** | 14.2 | 0.060 | 0.3 | −2.377 | −1.7 | −1.693 |
| Panel B: Board of Director Total Dollar Stockholdings | | | | | | | | |
| Equity | 389 | 0.477** | 3.7 | 0.034** | 3.7 | −0.011** | −3.2 | 0.020** |
| Hybrid-Mortgage | 261 | 0.745** | 3.7 | 0.017 | 1.1 | −0.012** | −3.4 | 0.001 |

*Significant at the 5% level.
**Significant at the 1% level.
*%OWN-INS* = Percentage of outstanding shares owned by inside directors.
*%OWN-DOA* = Percentage of outstanding shares owned by affiliated directors.
*%OWN-OUT* = Percentage of outstanding shares owned by outside directors.
*$OWN-INS* = Natural log of total dollar value of stock ownership by inside directors.
*$OWN-DOA* = Natural log of total dollar value of stock ownership by directors of affiliated companies.
*$OWN-OUT* = Natural log of total dollar value of stock ownership by outside directors.

## Exhibit 6
## OLS Analysis of the Market Pricing of the Interaction Between Board Composition and the Percentage Dollar Value of Outstanding Shares Held by Directors for Equity and Hybrid-Mortgage REITs

| | Obs. | Intercept | *t*-Stat | *%INS** *%OWN* | *t*-Stat | *%DOA* *%OWN* | *t*-Stat | *%OUT* *%OWN* |
|---|---|---|---|---|---|---|---|---|
| Panel A: Interaction between board composition and percentage stock ownership | | | | | | | | |
| Equity | 404 | 1.191** | 24.8 | −0.120 | −0.5 | −33.039* | −2.0 | 1.234 |
| Hybrid-Mortgage | 274 | 1.027** | 15.5 | 0.157 | 0.5 | −15.739 | −1.4 | −2.408 |
| Panel B: Interaction between board composition and total dollar value of stock ownership | | | | | | | | |
| Equity | 389 | 0.168 | 0.9 | 0.084** | 5.2 | 0.052** | 3.5 | 0.066 |
| Hybrid-Mortgage | 273 | 0.532* | 2.1 | 0.034 | 1.7 | 0.017 | 0.7 | 0.030 |

*Significant at the 5% level.
**Significant at the 1% level.
*%INS*%OWN* = Percentage of inside directors on board multiplied by percent of outstanding shares owned.
*%DOA*%OWN* = Percentage of affiliated directors on board multiplied by percent of outstanding shares owned.
*%OUT*%OWN* = Percentage of outsiders on board multiplied by percent of outstanding shares owned.
*%INS*$OWN* = Percentage of insiders on board multiplied by natural log of dollar value of outstanding shares owned.
*%DOA*$OWN* = Percentage of affiliated directors on board multiplied by natural log of dollar value of outstanding shares owned.
*%OUT*$OWN* = Percentage of outsiders on board multiplied by natural log of dollar value of outstanding shares owned.

group. A negative relation is observed for the dollar ownership of affiliated directors for both REIT groups.

The influence of the interaction of both board composition and director stock ownership as a percentage of shareholder equity on REIT value is examined in Panel A of Exhibit 6 for the equity and hybrid-mortgage REIT groups. A significant negative relationship is documented between equity REIT market-to-book ratios and the interaction of the level of affiliated director representation on the board and their proportion of stock ownership. All but one of the annual coefficients is negative for this model.

Panel B of Exhibit 6 presents the market pricing of board composition and director stock ownership measured as the total dollar value of their stock holdings. A significant positive relationship exists between equity REIT market-to-book ratios and the interaction of the level of inside, affiliated and outside director representation on the board and their respective total dollar values of shareholdings. All but four of the coefficients are negative, providing further evidence that the market perceives the total dollar value of director ownership as a key measure of director alignment with shareholders.

## Conclusion

Evidence provided by McIntosh, Rogers, Sirmans and Liang (1994) suggest that internal monitoring by directors can act to create shareholder wealth in REITs and supports the widely held belief that outside directors serve to enhance shareholder value. This determines the impact of REIT board of director composition and characteristics on REIT value as measured by a firm’s market-to-book ratio. This analysis is performed for 135 REITs with over 4,500 director years of service for the period 1980–94.

Results show that increased outsider representation on the board of directors leads to increased market-to-book ratios as outside representation climbs towards 50%. However, this relation does not persist as outside director representation rises above the 50% level. These results provide evidence that the role of monitor played by outside directors is appreciated by the market. However, as this outside representation on the board becomes excessive, the benefits of additional monitoring provided by increased numbers of outside directors declines. In addition, evidence is provided that the market discounts the stock of REITs with increased numbers of affiliated directors.

Further support for the increased alignment associated with greater stock ownership is provided by the documentation of a positive relationship between REIT market-to-book ratios and the total dollar values of director stock ownership. As the level of wealth at risk in the firm increases for these directors, their levels of oversight and monitoring increase proportionately.

## Notes

[1] For a more detailed discussion of the REIT institutional form, see the Internal Revenue Code (Sections 356-358).

[2] REITs are not the only firms that may have assets that are hard to value. For example, industrial firms may have hard-to-value machinery and high-tech firms may have hard-to-value patents and other technology.

[3] See, for example, Jensen and Meckling (1976) for further analysis on the effectiveness of these other mechanisms to align management with shareholders.

[4] The perceived importance of outside directors on REIT boards is illustrated in the Statement of Policy of the North American Securities Administrators Association regarding REITs. Section 3(b) states that a majority of the trustees of a REIT shall be independent and all committees established by the trust should consist of a majority of independent trustees.

[5] Captive REITs and captive-financing affiliates are REITs that have interwoven business relationships with their sponsors and advisors.

[6] To be considered an equity REIT, at least 75% of the REITs investment portfolio must consist of income producing real property. Mortgage REITs lie on the opposite end of the spectrum with at least 75% of their assets consisting of mortgage instruments, while hybrid REITs fall between equity and mortgage REITs.

[7] It is important to note that some REITs will appear in the sample for most of the fifteen years examined, while some will only appear once. The results will be biased towards those REITs appearing more times in the sample. However, alternative analysis employing averages that condense each REIT's annual data items to a single observation reveal that this bias is not significant.

[8] Hybrid and mortgage REITs, hereafter referred to as hybrid-mortgage REITs, are examined together.

[9] All affiliated directors in this analysis served on boards of captive REITs or groups of affiliated REITs managed by a single advisor.

## References

Ang, J. S. and H. S. Friday, The Magnitude and Control of Agency Costs in Real Estate Investment Trusts, Working Paper, Tallahassee, FL: Florida State University, 1997.

Brickley, J. A. and C. James, The Takeover Market, Corporate Board Composition, and Ownership Structure: The Case of Banking, *Journal of Law and Economics*, 1987, 30, 161–81.

Byrd, J. W. and K. A. Hickman, Do Outside Directors Monitor Managers? *Journal of Financial Economics*, 1992, 32, 194–221.

Fama, E. F. and M. C. Jensen, Separation of Ownership and Control, *Journal of Law and Economics*, 1983, 26, 301–25.

Friday, H. S. and D. R. Peterson, January Return Seasonality in Real Estate Investment Trusts: Information vs. Tax-Loss Selling Effects, *The Journal of Financial Research*, 1997, 20:1, 33–52.

Hsieh, C. H. and C. F. Sirmans, REITs as Captive-Financing Affiliates: Impact on Financial Performance, *Journal of Real Estate Research*, 1991, 6, 179–89.

Jensen, M. C. and W. H. Meckling, Theory of the Firm, Managerial Behavior, Agency Costs, and Ownership Structure, *Journal of Financial Economics*, 1976, 3, 305–60.

Mangel, R., and H. Singh, Ownership Structure, Board Relationships and CEO Compensation in Large U.S. Corporations, *Accounting and Business Research*, Corporate Governance Special Issue, 1993, 339–50.

McIntosh, W., R. C. Rogers, C. F. Sirmans and Y. Liang, Stock Price and Management Changes: The Case of REITs, *The Journal of the American Real Estate and Urban Economics Association*, 1994, 22, 515–26.

Patton, A. and J. C. Baker, Why Won't Directors Rock the Boat? *Harvard Business Review,* 1987, 65, 10–8.

Weisbach, M. S., Outside Directors and CEO Turnover, *Journal of Financial Economics*, 1988, 20, 431–60.