When Passive Index Investors Engage in Activist Corporate Governance: The Existence of Correlated Institutional Block Ownership Within REIT Capital Markets

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The paper shows that Vanguard has approximately a 20% stake in almost 80% of all publicly traded REITs. Other institutions, many of which are index mutual funds and ETFs, also consistently own blocs in the same firms. Results show that passive institutional investors engage in firm-specific activist corporate governance. Aggregate correlated bloc ownership by these institutions both increases the likelihood of REITs' obtaining new equity capital (SEO) and corporate control changes such as mergers, liquidations, decisions to go private, and removal from established stock exchanges to trading on the pink sheets that remove firms from indexes.

INTRODUCTION

Appel et al. (2015) highlight that passive institutional investors are a large component of the U.S. stock market, and find that these type of shareholders influence governance choices related to more independent directors, the removal of poison pills, the elimination of restrictions on calling special meetings, and fewer dual class share structures. They conclude that passive investors exert influence through their large voting blocs by supporting (or resisting) shareholder (or management)-initiated governance proposals. Yet, little is known about activist corporate governance by institutions with passive investment strategies (Appel et. al., 2015 and Levy and Lieberman, 2015).

The decline in individual retail investors who directly own stock and the growing presence of dominant institutions in the securities markets such as Vanguard Index Funds is a concern to the SEC. This trend, referred to as the institutionalization of the capital markets, evokes questions about the correlation and concentration of ownership, an indicator of the degree of influence amongst a limited number of institutions in a single market segment. For example, Campus Crest Communities, a student housing properties REIT, announced that it is exploring a broad range of operational and financial alternatives to enhance shareholder value because of unsolicited conversations with multiple highly-

qualified institutional investors (PR Newswire). Overt influence over corporate governance by institutions is a new and long-term market trend with no sign of reversal (The Economist, 2015 and Vanguard, 2014).

One concern is that retail investors in the capital markets are not aware of the extent of correlated aggregate institutional ownership, whether physical or synthetic. This concern is reflected in the SEC's current call for greater transparency relating to institutions' ability to avoid rules requiring disclosure under Section 13(d) of the 1934 Act and similar regulatory provisions (Weingarten and Magnor, 2009). Appel et al. (2015) suggests that the influence of passive institutional investors has been overlooked because most individuals assume that a passive strategy is focused on delivering the return of a market index with the lowest expenses possible and that these funds do not sell a stock unless it is removed from the tracked index.

There are many mechanisms that influence firm's governance that may be attractive to passive institutions that can remove poorly performing firms from indexes. Institutions with passive investment strategies that do not divest their position in poorly performing stocks that are part of an index can affect the success of secondary equity capital issuances (SEOs) or facilitate control events such as mergers that remove firms from indexes. Given that these institutions sometimes own a sizeable proportion of a firm's shares enables them to influence managers' decisions. Moreover, the influence of Vanguard and other passive institutional investors could be related to the interconnectedness amongst passive investors, coupled with the size of their block positions, which may require management to converse with a select group of institutions about corporate control and financing choices. For example, real estate investment trusts (REIT) management desire continued funding from institutional investors with long-term investment horizons and extensive real estate industry knowledge. (REITs are one of the few public traded stock sectors that rely on almost annual equity issuances to grow, since they cannot retain much earnings with a 90% dividend payout requirement) Therefore, if publicly traded firms are owned by well-known funds and institutions with identical equity strategies as defined by purchasing bloc shares in the same firms, it is vital to take a close look at their identity and motivations.

In this study, the analysis examines whether passive institutional investors directly influence firm governance choices. Evidence consistent with a positive correlation between aggregate correlated block ownership amongst large institutions with passive investment and corporate control or financing events is consistent with firm-specific intervention. REITs provide an excellent laboratory for examining the influence of block institutional investors due to the fact that institutional ownership has increased steadily over the past several decades (Striewe et al., 2013 and Chan et al., 1998). Devos et al. (2013) find that, between 2004 and 2010, the percentage of aggregate institutional ownership has increased from roughly 40 percent to just below 60 percent, and 85 percent of the sample has at least 25 institutional investors that in aggregate hold more than 50 percent of the outstanding shares. Yet, to our knowledge, no article focuses on whether real estate-focused institutions with bloc ownership clusters pursue both passive index investment strategies and direct activist corporate governance. To our knowledge, existing research in either finance or real estate does not measure the correlation of bloc ownership by institutions with passive investment strategies (Iliev and Lowry, 2015, Fich et al., 2015, Allen and Phillips, 2000; and Barclay and Holderness, 1991).

By definition, real estate-focused institutions have a substantial amount of wealth in REIT stocks, a high level of ownership percentage, and enough financial sophistication to evaluate firm and industry prospects. The results in this study provide evidence of commonality among institutional purchases of REITs. The findings are as follows: 1) a small group of institutions have bloc ownership in over ninety percent of all the publicly traded REITs may have formed an informal business network); 2) Vanguard and Vanguard REIT own approximately 20% in almost 80% of the sample and an established group of other institutions own at least 5% in each REIT that Vanguard invests in; 3) correlated institutional ownership is positively related to the likelihood of an SEO, especially during the 2000-2002 and the 2008-2009 financial crises; and 4) the likelihood of a control event (merger, bankruptcy/liquidation, change to a private firm, or trading on a pink sheet) that removes the REIT from all indexes increases with the percentage of aggregate correlated institutional bloc ownership.

Instead of hiring managers to actively select stocks, Vanguard index funds and Vanguard REIT exchange-traded fund replicate the movement of indexes by buying almost all of the securities within specific indexes. For example, Vanguard index mutual and ETF funds purchase REIT shares relative to their weighted average value in indexes such as the S&P 500, MSCI REIT index, FTSE NAREIT Index and the Dow Jones Select REIT Index. Vanguard is very influential because its management invests over $80 billion in the $900 billion REIT equity capital market.

Vanguard REIT index fund is a real estate investment trust that invests solely in the real estate industry by purchasing REIT shares that own office, industrial, retail, apartment, hotels and other real estate property types. As of April 6, 2015, the Vanguard REIT fund had $54.6 billion in 141 REITs (large, small or mid-cap stocks). The selection of REITs replicates the returns of real estate stocks within the MSCI REIT index. The 0.24% expense ratio is 82 % lower than the average expense ratio of other REIT funds with similar holdings.

It may appear that institutions with passive investment strategies do not affect firm corporate governance due to the fact that they do not sell REIT shares as long as they belong to a particular index. Yet, as highlights by Appel et al. (2015), passive investment is not synonymous with passive external corporate governance. John Wilcox from TIAA-CREF states that, "a large part of the portfolio was indexed, but that had nothing to do with our decision about whether to examine the companies in our portfolio... Being a "permanent" owner is not an excuse not to engage (with firms), it is a reason to engage. " In fact, Jane Welsh, head of indexation research at Towers Watson, says that index and ETF funds are "generally such large investors and have such large positions that their vote (or opinions) is worth a lot. The last thing companies want is to have these investors vote against them." Similarly, Rakhi Kumar, head of corporate governance at State Street Global Advisors says, "there is a big difference between a passive investment and passive ownership."

There are benefits to passive investors engaging in active external corporate governance. Large correlated stock ownership can increase a REITs' access to equity capital markets during periods of uncertainty and illiquidity. The increased ability to obtain equity financing is important especially since Case, Hardin, Wu and Wu (2012) find that REIT capital markets behaved erratically and affected firms' ability to obtain external capital during the 2007 crisis. The disadvantage to management, however, is that these same institutions engage in activism related to control change events such as going private transactions that remove the REIT from all indexes. This finding extends Appel's (2015) and Chang et al.'s (2014) findings that inclusion in the Russell 1000 and Russell 2000 affects passive institutions' willingness to invest in firms.

The evidence of correlated and possibly coordinated institutional block ownership provides an explanation for why the pecking order theory does not explain the financing behavior of publicly traded REITs that rely so heavily on external equity financing. Bloc ownership by a few primarily passive institutions with long term horizons decreases information asymmetry and is viewed as a positive signal to actual and potential investors in the capital market. The results also extend the literature in industrial economics that focuses on the variation in ownership concentration between sectors, arguing that industry conditions – such as regulation that requires a minimum 90% dividend payout ratio which requires REITs to go to the equity capital market frequently– partly account for variation in ownership structure (Demsetz and Lehn, 1985, Van der Elst, 2004, and MacKay and Phillips, 2005).

INSTITUTIONAL INVESTORS' PREFERENCE FOR REIT STOCKS

Ciochetti, Craft and Shilling (2002) find that institutional investors take large positions in REIT stocks for the years 1993 and 1998, but these institutions' preferences and incentives differ. Their sample consists of 8,801 institutions in 1993 and 11,313 in 1998. Of these, 2,019 are shown to have REIT holdings totaling $5.7 billion in 1993, comprising nearly 18 percent of the REIT market. Institutional allocation of REIT stocks increases dramatically by 1998, with 5,301 institutional investors holding nearly $72.7 billion of REIT stocks, or nearly 53 percent of the outstanding market.

In contrast to Devos et al. (2013), pension plans are shown to be the dominant institutional investors in REIT stocks for both 1993 and 1998, with $3.9 billion and $38.6 billion in shares outstanding. The REIT market share held by pension plans is shown to have increased from 12.3 percent in 1993 to slightly less than 28 percent in 1998. By 1998, mutual funds (73), insurance companies (46), bank trust departments (119) and other institutions (283) had increased their ownership within the REIT industry. Mutual funds had 6.1% of all publicly traded shares in the REIT industry in 1998, which is an increase of 205% from the 2.0% institutional industry wide ownership in 1993.

In their study, an individual mutual fund held between 5 and 20 different REIT stocks. In 1998, 41.1% of mutual funds held shares in 1 to 5 REITs and 9.6% held shares in 51 to 100 REITs. The authors stated that 4 or 5 REITs accounted for half of the market value of the REIT stocks held by an individual mutual fund, the firms with the largest market capitalization. The data, however, does not identify whether interdependence exists with respect to REIT focused investment strategy either within an individual REIT or among many firms within and related to the REIT industry. Therefore, additional empirical analysis is needed.

Activism by passive institutional investors with correlated (would "concentrated" be a better term?-I did not use concentrated because I wanted to emphasize the several blockholders are possibly acting in concert-the fact that a passive strategy causes a few institutions to have massive blocks leads to concentration levels that have important implications from a corporate governance perspective) blocs is an extension of the above and existing literatures. Appel (2014) and Choi et al. (2013) find that passive investors like Vanguard engage in active corporate governance through proxy voting and by investing in Russell 1000 and Russell 20000 firms with more independent directors, removing poison pills and restrictions on calling special meetings, and non-dual class structures. The authors show that passive investors influence corporate governance by supporting (or resisting) shareholder (or management)-initiated proposals, which improve firms' long-term performance. They conclude that passive investors effectively use low-cost monitoring of best governance practices, but these institutions do not necessarily evaluate each stock in the index portfolio.

Other recent papers focus on the role of active investors that have passive investment strategies. Iliev and Lowry (2015) also find that mutual funds are active monitors. Funds with higher net benefits of actively voting and conducting research independent from proxy advisory service companies are less likely to consistently support management initiatives. They report extreme variation in funds' reliance on proxy advisory service companies.

Instead of focusing on voting strategy, we focus on corporate governance outcomes directly related to two of managements' corporate decisions- SEOs and change in control events. Both of these corporate governance choices affect whether an individual firm remains part of an index. Focusing on these decisions provides evidence of alternative and complementary mechanisms for influencing corporate governance. This approach extends Fich et al.'s (2015) finding that institutional monitoring is greatest when a target firm represents a significant allocation in the fund's portfolio. Their results are consistent with large shareholders facilitating acquisitions even when they do not initiate them when the target firm represents a large part of the total portfolio. In our analysis, we also hypothesize that passive investors with the largest holding focus their efforts on firm-specific corporate governance decisions when dominant institutional investors have multiple holdings across firms within a specific industry.

Specifically, institutions allocate their activism to firms based on the relative importance of the industry in their portfolio. Correlated stock ownership that mitigates coordination frictions leads to favorable negotiation in debt markets also (Chakraborty and Gantchev. 2013). To date, no study to our knowledge has analyzed the relationship between correlated block ownership by passive investors and SEOs (Boudry, Kallberg and Liu, 2010).

Choi et al. (2015) provide a motivation for evaluating the relationship between correlated passive bloc ownership and SEOs. Using a sample of Shanghai Stock Exchange investors, they show that, in general, stocks in the top decile of wealth-weighted mutual fund ownership outperform the bottom decile by 8% per year and mitigate overpricing. The evidence is consistent with retail investors causing overvaluation. If mutual funds are credible signals of stock price value, their presence should increase the likelihood of

an SEO, especially since Kim and Purnanandam (2015) find that weak governance is a primary reason that investors react negatively to the announcement of SEOs.

The authors find that support for Jung, Kim and Stulz's (1996) theoretical argument that investors react negatively due to concerns regarding the possible misuse of proceeds. Even if the firm has low growth opportunities or high capital expenditures, the reaction to the SEO will not be negative because strong corporate governance as defined by firms in states that did not enact the business combination statutes during the period 1985 to 1990 assures investors that the proceeds will be used productively. Our study uses aggregate correlated ownership by passive block institutional investors as a signal of strong corporate governance to the capital markets.

It is also unknown, however, whether the passive institutions with correlated block ownership facilitate these control events. In general, Campbell, Giambona, and Sirmans (2009) show long-run underperformance of REIT acquirers. In contrast, Allen and Sirmans (1987) find positive stock returns for acquirers for mergers between Real Estate Investment Trusts (REITs). They suggest that more efficient management is a motivation behind the takeover decision. Further studies by Campbell, Ghosh, and Sirmans (2001) and Campbell, Ghosh, Petrova, and Sirmans (2009) find that abnormal shareholder returns for REIT acquirers are also significantly positive when the target firms are private companies. The conclusion is that since almost all REIT takeovers are a friendly transaction, which implies less severe information asymmetry, external governance mechanisms are not an important part of corporate governance. As documented in Campbell, Ghosh, and Sirmans (2001), most REIT mergers are friendly transactions, which indicate that managers of target firms agree with the merger without any fight back.

The OECD Principles of Corporate Governance espouses that incentivized, well informed and highly skilled institutional investors promote good corporate governance in companies. The underlying presumption is that these institutions have sufficient voting rights and access to information to be active shareholders that can influence corporate decisions. In this paper, correlated bloc ownership, a real estate industry-wide strategy of buying shares in the same companies, is proposed to be related to active corporate governance. The first research question empirically examines whether the dominant passive institutions within the REIT capital market have common investment portfolios.

H1: REITs have correlated institutional ownership owned by a few dominant passive institutions.

The second question evaluates whether correlated institutional block ownership increases the likelihood of an SEO relative to a SDOs and/or private financing. Theoretically and empirically, most literature states that institutional ownership should affect the allocation of resources and the corporate governance decisions of individual firms (Brockman, French and Tamm, 2014, Boudry, Kallberg, and Liu, 2010, and Khoran, Servaes and Tufano, 2005). It is rational for influential institutional investors to coordinate regarding the value implications equity issuances and control change events. Yet, no existing empirical study measures institutional ownership correlation across a specific industry directly (Gillian and Starks, 2000 and Kahn and Winton 1998). Instead, much of the corporate governance empirical literature treats institutional investors (or certain types of institutions) as independent entities or as a monolithic group and hence ignores the interconnectedness of institutions (Brickley, Lease and Smith, 1988).

H2: REITs are more likely to use equity (SEO) instead of debt (SDO) and/or other private sources of financing when aggregate correlated institutional block ownership is high, especially during the 2008-2009 or 2000-2003 recessions.

This finding would support Williams and Ryan's (2007) theory that managers of publicly traded firms need investor groups to support a variety of different business initiatives. Given that informal business networks are implicit contracts primarily built on mutual trusts, the sought after institutions need to have a reputation of being a "good partner." Over the long run this relationship must be beneficial to all

shareholders, otherwise future investors will vote with their feet by not buying SEOs when correlated institutional ownership is large. Less information asymmetry is especially important during periods of volatility or when the capital market receives a recessionary shock (Luchtenberg and Seiler, 2014).

The study also evaluates whether correlated institutional block ownership is related to corporate control changes that remove REITs from indexes in the third question.

H3: If active monitoring and engagement in corporate governance exists, the likelihood of a change in control event that removes a firm from indexes should be positively related to aggregate correlated institutional block ownership.

Due to the long-term focus of institutions with passive investment strategies, activism that induces non-hostile changes in control is most likely not due to short-term payoffs. Tufano (1996) finds that institutional blockholders, in general, do not have a long term horizon with respect to investment strategy because most corporations diversify their block positions in firms in their own as well as a number of different industries. The authors propose that institutions typically do not actively influence management decisions and are more likely to have incentive structures similar to atomistic shareholders. Similarly, Gillian and Starks (2000) finds that institutional blockholders in general are ineffective monitors and can only lead to small changes in corporate governance.

DATA SELECTION AND METHODOLOGY

Our initial sample consists of 4,495 equity REIT capital issues covered by the NAREIT/SNL REIT Data source database from the time period 1990-2014 as well as a control sample of equity REITs that did not make any capital market transactions for a specific year. The control sample is matched by size, property type, and operating profitability.

We identify those firms that issued Secondary Equity Offerings (SEOs) (2593) and Secondary Debt Offerings (SDOs) (1628) from the NAREIT database. Since Ghosh, Nag and Sirmans (2000) find that pre-1990 REIT equity SEOs are more underpriced than post-1990 ones, 1989 is excluded from the sample (0 IPO, 14 SEO, and 8 SDO). During the first recession from 2000-2002, REITs completed 137 SEOs and 0 SDOs. In the second recession from 2007 to 2009, REITs issued 173 SEOs and 87 SDOs. A few firms had dual or triple issues within the same year (Dual IPO/SDO 21, Dual SEO/SDO 98, and Dual SEO/IPO 22). These transactions are not included in the initial sample. Following convention, we also exclude rights offerings, warrants, and unit offerings. Our study focuses on common stock and public debt offerings.

The REIT.com/investing database provides information on the name of the REIT issuer, issue price, issue size, filing date, classification (hybrid, equity or mortgage), property sector (industrial/office, diversified, residential, retail, health care, lodging/resorts, or other). The property sector and property subsector are used to classify investors into privileged and non-privileged.

The NAIREIT/SNL sample is then compared to the CRSP and COMPUSTAT databases in order to obtain financial information for each REIT. Quarterly accounting and daily stock price financial variables are obtained from Compustat and the Center for Research in Security Prices (CRSP), respectively. Financial information on this subsample of REITs is then extracted from their balance-sheet, income expense and cash flow statements in Standard and Poor's COMPUSTAT database. The number of publicly traded firms on NAREIT, Compustat and CRSP reduced the sample to 210 unique REITs that resulted in 762 SEOs and 377 SDOs for a total of 1079 unique capital market transactions.

Additional criteria reduce this final sample to the above numbers. Consistent with Ooi, Ong and Li (2010) only material financing activities are in the sample because the dollar amount must be larger than US $1 million. For equity issues, the amount must also constitute more than 1% and 5% of the REIT's equity capitalization. For debt activities, the amount must constitute at least 2% of the REIT's total assets; and 2) private and public non-traded REITs are eliminated from the sample. Survivorship bias does not play a role in the samples because both active and inactive (acquired, bankrupt, etc.) firms are retained.

To test the hypotheses, we hand collected data on the identity and percentage of block ownership held by shareholders from proxy statements filed with the Securities and Exchange Commission at year end prior to the SEO or SDO date. After obtaining the name of each block holder we google search the investor's business focus and potential relationship to the real estate industry or the REIT. Affiliation is defined by common block ownership. The identity of investors with at least 5 percent ownership for REITs is obtained from Proxy Statements. Investor's affiliation with the real estate industry network is also taken from NAREIT's list of influential U.S. Real Estate Mutual and Exchange Traded funds.

Moreover, many of these institutions do business with each other. BlackRock Real Asset Trust (BCF) is Cohen & Steers' investment advisor (BlackRock Fund Advisor). BCF is also a non-diversified closed-end management investment company that invests part of its assets in REITs that uses BlackRock Fund Advisor is its investment advisor. The owners of iShares Cohen & Steers REIT ETF (CNS), Martin Cohen and Robert Steers, are considered pioneers in REIT investment.

Two recession dichotomous variables cover the periods from 2000-2002 and 2007-2009. The correlation between the decision to issue equity and correlated institutional stock ownership is examined for the two recessions: Choe, Masulis and Nanda (1993) suggest that adverse selection costs are low (high) during a period business expansion (downturn).

The premise underlying the hypotheses is that informed investors have inter or intra firm relationships that provide them with detailed information about the location, property type, economy, competition, and management expertise for a specific REIT and the industry as a whole. As a result, the regression models include dichotomous property type variables. Property type dichotomous variables equal one if the REIT operates in a given property type sector and zero otherwise. The property types consist of office, industrial, retails, apartments, hotels, and other real estate (timber, mortgage, self-storage facilities, etc.).

A dichotomous variable to control for specific indexes is also included. The index dichotomous variables control for exogenous variation in passive investors' ownership given that stock selection is based on arbitrary rules such as the largest 1000 firms – 100 in the case of REITs (Apple et al, 2015). The index variables partially control for the extent of passive investing given that these funds mimic the performance of a portfolio by holding the same securities based upon their weights within the index. Index funds are passive because they hold nearly all of the firms in the index. The largest dominant investors, Vanguard Funds and Vanguard REIT Funds, have passive index funds. The inclusion of the index variable controls for the fact that indexes may select stocks on characteristics such as size that are related to different firm characteristics such as dividend payout ratio, growth and diversification.

Additional control variables include firm size as measured by the logarithm of equity capitalization, the market value of equity/net asset value ratio, number of institutions, risk (standard deviation of stock returns in the three month period prior to the issue announcement), total institutional ownership, the relative issuance amount, and leverage. Pearson correlations for the independent variables are in Table 1.

TABLE 1
PEARSON CORRELATIONS

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Ln(Size)	1.00	-	-	-	-	-	-	-	-
(2) Leverage	0.34	1.00	-	-	-	-	-	-	-
(3) M/B assets	0.51	-0.11	1.00	-	-	-	-	-	-
(4) Market volatility	0.19	-0.08	0.02	1.00	-	-	-	-	-
(5) # Institutions and Mutual Funds	0.37	0.15	0.06	0.13	1.00	-	-	-	-
(6) Correlated Institution Block %	0.14	0.40	0.42	-0.29	0.12	1.00	-	-	-
(7) Total Institution and Mutual Fund %	0.54	0.28	0.22	0.07	0.33	0.26	1.00	-	-
(8) Cash ratio	0.01	0.05	0.00	-0.01	-0.06	-0.09	-0.04	1.00	-
(9) Ln(Size of Offer)	0.44	0.17	0.50	-0.12	0.29	0.37	0.32	-0.05	1.00

RESULTS

The Importance of Correlated Institutional Ownership in REIT Corporate Governance

The percentage of institutional investors making similar stock purchases (our definition for affiliated ownership) is one measure of institutional interconnectedness within the REIT industry. The predominance of a wholesale REIT market evolves from the removal of the 1993 Revenue Reconciliation Act removing the 5/50 rule, which previously limited the presence of large blockholders and alliances of shareholders.

Detailed analysis of the identity and ownership level of dominant institutions and mutual funds in the REIT industry does not exist. One exception, NAREIT provides a list of influential REIT mutual funds and investors that include Vanguard, Fidelity, FMR, T. Rowe Price, BlackRock, Goldman Sachs, Vanguard REIT, Fidelity REIT, Cohen & Steers, Invesco, State Street, Sab Capital, Daiwa, Capital Research Global, CBRE Clarion, LaSalle, and others. These institutions have industry knowledge that should enable them to evaluate information they receive from management and know what questions to ask about information they are not in receipt of. It is unknown, however, whether these dominant institutions have interlocking REIT stock positions. To evaluate this issue, Table 2 provides the list of influential block holders.

TABLE 2
INSTITUTION AND MUTUAL FUND BLOCK OWNERSHIP ACROSS THE REIT INDUSTRY

Table 2 reports the percentage of block ownership that 14 influential institutional investors have in the 210 publicly traded REITS in the sample. To be considered influential, the investor must have a block position in at least five percent of the publicly traded firms. For example, Vanguard has block ownership in 79.10% of all publicly traded REITs (# of REITs that Vanguard has block ownership/# of all REITs). Influence is also measured by the percentage of times a specific investor is the lead owner with respect to percentage of shares (# REITs that Vanguard has lead ownership position/# of REITs that Vanguard has block ownership). Vanguard has the highest block ownership in 88.70% of the REITs that it invests in. To determine whether conscious parallelism exists, the percentage of shareholder interlocking connections between Vanguard and the other influential investors with block positions across the sample of all REITs in the sample (# times that Vanguard has block ownership when another investor has block ownership/ the # of REITs that the other investor has block ownership).

Investor	% of REITs with block ownership	Lead Owner	Vanguard Connection
Vanguard Mutual Fund	79.10%	88.70%	79.24%
Vanguard REIT	56.72%	0%	89.47%
BlackRock Fund	29.85%	0%	100%
Black Rock Trust	10.45%	0%	100%
Cohen & Steers	25.37%	0%	100%
State Street Bank	25.37%	5.88%	100%
Invesco	23.88%	6.25%	100%
FMR	16.42%	9.09%	80%
JP Morgan	14.93%	12.50%	100%
CBRE Clarion	11.94%	0%	100%
Morgan Stanley	11.94%	0%	75%
Daiwa	7.46%	0%	100%
Goldman Sachs	5.97%	0%	75%
T. Rowe Price	5.97%	0%	50%

Passive Index Funds: Vanguard Fund, Vanguard REIT, BlackRock Trust
Actively Managed Asset Funds: BlackRock Fund, Daiwa Asset Management Fund, Invesco, Fidelity Asset Management Fund FMR, T Rowe Price Asset Management Fund
Investment Management advisory and mutual fund services: JP Morgan, Morgan Stanley, Goldman Sachs
Commercial/Investment Bank with underwriting and equity placement services: State Street Corporation
Real Estate development, property management, and mutual fund services: Cohen and Steers, CBRE Clarion

Based upon the statistics in Table 2, informal business networks induced by passive index investing could explain the pattern of REIT block ownership. We find that Vanguard Index Fund has a block position in 79.10% of the publicly traded REITs in the sample. For these firms, Vanguard Index Fund has the largest block ownership in 88.70% of the REITs it invests in. The largest block position is referred to as the lead position in the third column of Table 1. The consistency of their leader role is due to their $80 billion dollar investment aggregated in every REIT that is included in an index. The next largest investor in the industry is Vanguard REIT with block positions in 56.72% of the publicly traded firms in the sample. Thus, Vanguard and Vanguard REIT combined potentially have substantial joint influence within

the REIT industry. The extensive connection between their and other institutions' REIT share purchases, 79.24%, reveals that if Vanguard has a block position many other influential institutions also have a block positions. From an activist monitoring perspective, this connection ratio indicates that Vanguard may have a dominant role in external corporate governance.

The next group of investors with block ownership in over 20% of the publicly traded REITs includes BlackRock Fund/BlackRock Trust, Cohen & Steers, State Street Bank and Invesco Securities. In contrast to Vanguard, however, these firms do not invest in every publicly traded REIT. These other firms own blocks in greater than 5% but less than 20% of the publicly traded REITs in the sample, they are actively managed funds that pick a smaller number of stocks than index funds.

Legally, investors with correlated stock ownership are not required to file as a "group" on a Schedule 13D because they have not entered into a legal agreement to act in concert. It is unknown, however, whether these affiliated institutional investors own enough stock individually and collectively to affect managerial decisions. Table 3 provides ownership statistics for each dominant institutional investor for a sample of firms that issued SEO and a matched sample of REITs that issued a SDO or did not go to the capital market within a specific year.

TABLE 3
MEAN PERCENTAGE OF OWNERSHIP FOR A SPECIFIC INFLUENTIAL INVESTOR

This table reports the average percentage of block ownership for each dominant institutional investor across for the portfolio of publicly traded REITs that they own. The first column provides the statistic for the sub-sample of firms that did not issue an SEO within a specific year. The second column gives the statistics for the sample of firms that issued an SEO.

Institution	No SEO/SDO	SEO
Vanguard Fund	12.40%	14.68%*
Vanguard REIT	6.51%	7.19%
BlackRock Fund	4.66%	6.44%*
BlackRock Trust	4.18%	4.23%
Cohen and Steers	7.67%	7.95%
State Street Co.	4.35%	4.84%
Invesco	5.29%	8.00%*
FMR	4.78%	9.00%*
CBRE Clarion	5.83%	2.11%*
JP Morgan	6.54%	0.77%*
Morgan Stanley	4.55%	4.07%
Daiwa	5.27%	4.63%
Goldman Sachs	4.08%	4.92%
T. Rowe Price	3.18%	1.95%*

Consistent with index investing, Vanguard Index Fund and Vanguard REIT Fund have the largest ownership in both sub-groups. The second highest ownership position belongs to BlackRock Fund and BlackRock Trust combined. BlackRock Fund, Invesco and FMR hold more stocks as a percentage of total shares in REITs that are engaged in financing activities during a specific year. In contrast, CBRE Clarion, JP Morgan and T. Rowe Price have less ownership in REITs that issue SEOs than otherwise.

Taken together, Tables 2 and 3 reveal that interlocking stock positions between institutional investors with controlling block positions appear to be wide spread in the REIT industry. The existence of these institutional alliances raises questions about whether active corporate governance within the real estate industry exists. In a sense, these relationships are trans-corporate networks that overarch the entire real estate industry potentially allowing a small group of institutional investors to exert immense influence and pressure on REIT management. Table 4 provides additional evidence on REITs' overall ownership structure.

TABLE 4
DESCRIPTIVE STATISTICS ON INSTITUTIONAL OWNERSHIP
(Definitions in Appendix B)

This table reports summary statistics for different institutional ownership variables

Variable	Median	Mean	Minimum	Maximum	SD
Correlated Institutional Block %	34.65%	35.21%	0%	82.76%	18.45%
Total Institution & Mutual Fund %	83.00%	74.16%	5.00%	100.00%	29.20%
Number of Institutions and Mutual Funds	275	299	2	925	189.98
Number of Controlling Institutions and Mutual Funds	5	4.92	0	12	2.54
Individual Block%	0%	1.52%	0%	61.00%	8.09%
Institution Block%	0%	3.18%	0%	15.66%	4.22%
Mutual Fund Block%	9.18%	7.31%	0%	17.61%	5.29%

Apparently, retail individual participation in the REIT capital market is small. Table 3 shows that institutions and mutual fund investors hold a mean (median) percentage of 74.16% (83.00%). This high level of total ownership is purchased by a small number of institutions and mutual funds ranging from a high of 925 to a low of 2 for an individual REIT, with a mean (median) of 299 (275). In addition, although not reported in Table 4, the 75th and 25th percentiles have means of 426 and 166 institution and mutual fund holders.

The fact that institutions and mutual funds own a large percentage of shares within a REIT is not evidence of active corporate governance and monitoring." To test the informal business network hypothesis, a measure for correlated ownership is calculated based upon the number of predominant institutional investors at a specific REIT and the percentage of block ownership held by these investors. In Table 4, as few as 5 institutions with block positions control 35% of REIT shares, on average, on an individual firm basis. As a result, the possibility of concerted corporate governance action among these institutions and mutual funds is plausible given that these large ownership positions ensure that

institutions and mutual funds have the economic incentive to exert influence over board of directors and management. The median and mean block ownership levels are 34.65% and 35.21%, respectively. The range is 0% to 82.76% (75^{th} and 25^{th} percentiles are 28.45% and 46.23%, respectively). As such, institutions' influence on REIT management decisions varies substantially.

Table 4 also reports the percentage of block ownership by individuals, institutions (pension funds, bank trusts, etc.), and mutual funds. In our sample, individual blockholders are for all practical purposes non-existent. The median and mean affiliated individual ownership are 0% and 1.52%, respectively. The largest concentration of institutional block investors is in the mutual fund industry (median of 9.18% and mean of 7.31%). In order for an individual retail investor to compete on a more level playing field with institutions, they need to be as sophisticated and tied to the informal real estate business network as affiliated institutions.

Correlated Institutional Block Investors and Board of Director Relationships

The NYSE and NASDAQ require that 70% of a firm's board of directors have no material business relationship. The NYSE's director independence requirements are designed to increase the quality of board oversight at publicly listed companies and to lessen the possibility of damaging conflicts of interest. The standards, however, do not clearly define the characteristics of a relationship consistent with conflicting interlocking stock ownership as a part of the definition of material for purposes of determining a director's independence from management. Material relationships could include industry ties, commercial transactions, banking, consulting, legal, accounting, and familial relationships, among others. The NYSE, however, does not consider interlocking ownership ties or even a significant amount of stock, by itself, as a bar to an independence finding. Yet, intertwined blockholders who are on the on each other's boards is other evidence on informal networks within the REIT industry. Board of directors with current or past relationships with any of the dominant institutions are presumed to be a part of the network.

This section of the paper redefines board independence to reflect correlated block ownership positions by dominant institutions that have board seats. The interconnections are presented in the Appendix.

TABLE 5
INDEPENDENT BOARD OF DIRECTOR INTERRELATEDNESS
AMONG DOMINANT BLOCKHOLDER (Appendix A)

Table 5 reports the percentage of independent directors on the board as required by NYSE rules, the percentage of directors that have current or past relationships with a firm in the coordinated affiliated group, and the percentage block ownership by firms in the correlated affiliated group.

Firm	Independent Directors %	Affl. Director %	Affil. Block %
Vanguard Group	80%	0%	23.30%
BlackRock	79%	0%	0%
Cohen & Steers	67%	34%	4.33%
State Street Co.	92%	17%	11.80%
Invesco	75%	0%	10.05%
FMR	58%	0%	20.99%
CBRE Clarion	80%	0%	0%
JP Morgan	82%	0%	0%
Morgan Stanley	80%	0%	7%
Daiwa	N/A	N/A	N/A
Goldman Sachs	77%	0%	10.50%
T Rowe Price	73%	0%	10.05%

Table 5 reveals that the NYSE definition of board independence would not be affected by the amended definition that considers interlocking block relationships among institutions for the majority of the firms except for Cohen & Steers and State Street Co. The dominant institutions' block ownership within each other, however, is substantial and ranges from 0% to 23.3%. Thus these firms own a substantial percentage of stock in each other, additional evidence of industry networks. These statistics shed light on the need for atomistic shareholders, practitioners and academics to understand networks within the capital markets.

Correlated Institutional Block Ownership and Stock Price Stability

Speculative markets ceteris paribus are volatile (Tauchen and Pitts 1983), especially since risk-averse and short term horizon traders sell off stock during recessionary periods. Conversely, if institutional shareholders with long term investment horizons are encouraged to buy stock within a particular firm or industry, equity capital markets may become more stable as evidenced by lower stock return volatility and transaction volume. It is important to understand whether these institutional groups with correlated ownership positions have a stabilizing effect on REIT stock prices. Table 6 provides summary statistics on volatility and trading volume.

TABLE 6
REIT RETURN VOLATILITY AND CORRELATED INSTITUTIONAL BLOCK OWNERSHIP

This table reports statistics for trading volume and stock return standard deviation for the subsamples of firms that did and did not issue SEOs as well as the firms in the 75th and 25th percentile with respect to correlated institutional block ownership. The definitions are in Appendix B.

	SEO	SDO or Private	75th	25th
Trading volume	16.77	10.22	14.09	18.7
Volatility of stock returns (sd)	0.087	0.073	0.064	0.091

The statistics in Table 6 reveal that trading volume and stock price volatility are smaller, on average, when REITs have a large percentage (75th percentile) of correlated institutional block ownership than when firms have a small percentage (25th percentile). It appears that the existence of a few dominant institutions has a stabilizing effect in the capital market, consistent with more sophisticated and interlocked investors improving information flows about REITs. The reduced volatility and transaction volume is consistent with some institutions engaging in indexing and relational investing, a commitment to buy and hold significant blocks of stock for an individual REIT or multiple firms within an industry. Higher percentage of correlated institutional block ownership generates a positive externality for actual and potential investors by decreasing the riskiness of the REIT shares, which in turn should lower risk and, thereby, enable firms to issue additional equity in the secondary capital market.

Correlated Institutional Block Ownership and Financing

The evidence in Table 7 is consistent with correlated ownership by passive institutions mitigating the collective action problem and, therefore, increasing the availability of external equity capital by validating SEOs.

TABLE 7
DECISION TO ISSUE SECONDARY EQUITY OFFERINGS

This table presents the results from a logistic regression on the incidence of SEO issuance relative to SDO, private debt and internal funding. The dependent variable equals one if the REIT issued an SEO in a specific year and 0 otherwise. The symbols *** and ** indicate significance levels of 1% and 5%, respectively. The variables definitions are in Appendix B.

	Issue Choice	Issue Choice
Intercept	3.36***	1.49
	(0.01)	(0.16)
Size	0.55***	0.60***
	(0.00)	0
Leverage	0.02	0.07
	(0.68)	(0.55)
M/B assets	0.54***	0.60***
	(0.00)	(0.00)
Cash Ratio	0.18	0.19
	(0.33)	(0.17)
Market volatility	-0.11*	-0.29
	(0.06)	(0.24)
Ln (Size of Offer)	0.00	0.00
	(0.75)	(0.81)
# Institutions	0.23	0.12
	(0.24)	(0.62)
Recession 2000-2002 (1)	-1.35***	-1.06**
	(0.01)	(0.02)
Recession 2007-2009(2)	-1.48***	-0.87***
	(0.01)	(0.01)
Correlated Blocks%	0.84***	
	(0.03)	
Recession1*75 percent. Correlated	0.68**	
	(0.05)	
Recession1*25 percent. Correlated	0.00	
	(0.97)	
Recession2*75 percent. Correlated	1.41***	
	(0.00)	
Recession2*25 percent. Correlated	-0.02	
	(0.16)	
Total Institution and Mutual Fund %		0.71***
		(0.00)
Recession1*75 percentile Institution		-0.08
		(0.37)
Recession1*25 percentile Institution		-0.43**

		(0.05)
Recession2*75 percentile Institution		-0.10
		(0.50)
Recession*25 percentile Institution		-1.35***
		(0.01)
Property Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes Yes
Index Fixed Effects	Yes	Yes
Log Likelihood statistic	292.10	204.43
P-value	0.0001	0.0001

We provide insight into the likelihood of REITs issuing equity (SEO) instead of relying on public debt (SDO), private financing or internal cash flow. SEO issuance is positively related to both aggregate correlated institutional block ownership by dominant institutions and total institutional ownership. During economic downturns, correlated institutional block ownership is more strongly related to equity issuances than institutional ownership. Interestingly, the opposite is true for REITs that primarily have non-correlated atomistic institutional ownership. Hence, there is a clear divergence indicative of heterogeneous financing preferences by different categories of institutions. Thus, the results show that correlated index investing in the real estate industry gives some institutions information and monitoring advantages, which is most likely a signal to other non-focused shareholders. The contribution to the literature is empirical results that partially explain why real estate firms do not follow Myer's (1984) pecking order.

Apparently, Vanguard and the other affiliated institutions reduce equity financing constraints both within and outside of recessions by increasing the likelihood that a publicly traded REIT will issue equity. (Investors prefer lower REIT firm leverage to reduce risk and have made that clear to REIT management) The reduction in information asymmetry may enable REITs to prefer equity to debt without a loss of efficiency when the firm has a small number of affiliated institutions with long-term horizons. In contrast, firms prefer public debt or private financing sources when ownership is predominantly held by non-affiliated atomistic institutions.

Control Changes and Correlated Institutional Block

The next part of this paper analyzes whether correlated institutional block ownership facilitates activism among institutions as defined by control events among institutions with passive investment strategies. Control changes occur with acquisitions/mergers, bankruptcy/liquidation, change from a public to a private firm as a result of a merger or otherwise, and removal from an organized stock exchange to the pink sheets. All of these control changes remove REITs from indexes.

In Tables 8 and 9, we empirically examine whether change of control events happen within five years after the year of the SEO for publicly traded REITS relative to those that had SDOs and/or other types of private financing. If new equity financing reduces value, pressure from institutional blockholders with correlated stock positions may influence managers to agree to friendly business structure changes that avoid costly actions that decrease shareholder wealth such as hostile actions to takeover proposals (if the pack owns a combined 40% block why fight?).

TABLE 8
SUMMARY OF CONTROL EVENTS

This table reports the type of change in control events.

	No SEO	SEO
Acquisitions/Mergers	19.40%	11.11%
Bankrupt/Liquidated	7.46%	2.78%
Went Private/Merger	2.99%	22.22%
Pink Sheet	0%	5.56%
Total Control Events	29.85%	41.67%

The statistics in Table 8 reveal that REITs that issued SEOs experience control events more frequently than other publicly traded firms in the control sample, however the type of control event varies across the two sub-samples. For firms that are involved in new equity issuances, 41.67% of the sample had a control change event within the five year period subsequent to the SEO. What stands out is that in this sample of firms 22.2% changed from publicly traded to privately held institutions, e.g., "going dark." This incidence of "going dark" is twice as large as the 11.11% probability of the REIT being acquired by another firm subsequent to the SEO. In contrast, in the comparison sample that had an SDO and/or private financing, only 29.85% of the sample experienced control events. The majority (19.40%) had mergers, but an appreciable amount (7.46%) went bankrupt or voluntarily liquidated the assets and returned the proceeds to investors.

Table 9 reports the results from a model that estimates the likelihood of a control event within five years after the SEO. The first column measures correlated block institutional ownership. The second column uses the traditional total institutional ownership measure. Two different ownership measures are used in the logistic regression because existing works suggests that total institutions play an active role in monitoring managerial behavior and enhancing performance. Empirical work on activist institutions suggests that pension funds are the most aggressive shareholder activists (Guercio and Hawkins, 1999), while mutual funds are not active monitors. The results in our study extend their findings by showing that real estate focused investors with passive investment strategies engage in activism through corporate control events that remove REITs from indexes, a form of external corporate governance.

The findings are consistent with the percentage of correlated institutional block ownership increasing the likelihood of a control event, especially following the two recessionary periods. In column 1, the coefficient on Correlated Block % of 0.03 is statistically significant. The probability of a control event is greatest (lowest) when the combined ownership percentage is in the 75 (25) percentile of the sample during both recessions as indicated by the positive coefficient of the dichotomous recession variables, whereas the likelihood of a control change event rises most in the five year period subsequent for those REITs that issued SEOs.

The results from column 1 in Table 8 are consistent with Chen, Hartford and Li's (2007) suggestion that institutions with long-term investors specialize in monitoring and influencing efforts above and beyond their trading strategy expertise. Control events provide evidence that passive index investors as a group affect management's corporate decisions given that they cannot simply sell their shares when dissatisfied with corporate performance. Thus, institutions with passive index investment strategies do actively monitor firms by using non-hostile external governance mechanisms to remove REITs from.

TABLE 9
ANALYSIS OF CORRELATED INSTITUTIONAL BLOCK OWNERSHIP AND LIKELIHOOD OF CONTROL

This table provides the results from a logistic regression model that predicts the likelihood of a change in control event during the five year period subsequent to an SEO issuance. The dependent variable equals one if a change of control event occurred and 0 otherwise. The symbols *** and ** indicate significance levels of 1% and 5%, respectively. The variables definitions are in Appendix B

	(1)	(2)
Intercept	0.12	0.11
	(0.47)	(0.39)
Size	-0.31***	-0.91***
	(0.01)	0.00
Leverage	-0.38	-0.03
	(0.50)	(0.16)
M/B assets	0.06	-0.05
	-0.41	-0.17
Standard Deviation	-0.41	-0.71
	(0.40)	(0.37)
# Institutions	-0.01	0
	(0.88)	(0.92)
Recession 2000-2002 (1)	1.43***	1.10***
	(0.01)	(0.01)
Recession 2007-2009 (2)	1.61***	1.03***
	0.00	(0.01)
Correlated Blocks%	0.03**	
	(0.02)	
Recession1*75 percentile Correlated	0.55**	
	(0.04)	
Recession1*25 percentile Correlated	-2.61***	
	0.00	
Recession2*75 percentile Correlated	0.27***	
	0.00	
Recession2*25 percentile Correlated	-1.09**	
	(0.03)	
Total Institution and Mutual Fund %		0.72**
		(0.04)
Recession1*75 percentile Institution		0.34
		(0.29)
Recession1*25 percentile Institution		-0.68**
		(0.01)
Recession2*75 percentile Institution		0.1
		(0.47)
Recession2*25 percentile Institution		-0.15
		(0.07)
SEO=1	0.24**	0.53**
	(0.05)	(0.02)
Property Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Index Fixed Effects	Yes	Yes
Log Likelihood statistic	140.56	121.01
P-value	0.0143	0.0257

In these transactions, REIT management does not appear to resist the blockholders' efforts to influence corporate policy, possibly due to the fact that these blockholders have specific skills and expertise that is important, above and beyond the concentration and level of ownership. It appears that correlated block institutional ownership reduces the threat of hostile takeovers or proxy fights.

Column 2 in Table 9 provides the results for total institutional ownership. Total institutional ownership is different from total correlated institutional block ownership. The findings in column 2 on total institutional ownership cannot differentiate between real estate and non-real estate focused institutions' monitoring and influence with respect to control change strategic decisions as total institutional ownership increases. The coefficient of 0.72 on Total Institution percentage is statistically significant. During the first recession of 2000-2002, however, REITs had fewer control events if they had low total institutional ownership. The coefficient of -0.68 for firms in the lower 25 percentile during the first recession is statistically significant. Yet, this statistical relationship does not exist during the second recession of 2007-2009. Alternatively, REITs in the highest 75 percentile did not increase the likelihood of a control event in either recessionary period. We suspect that correlated institutional block ownership, a large portion of total institutional ownership, is a key driver of changes in corporate control within the REIT industry.

Correlated Institutional Block Ownership's Effect on REIT Value

Although not reported in this paper, we find evidence of benefits of the real estate business networks as measured by the percentage of correlated institutional block ownership at REIT institutions for seasoned equity offerings (SEOs). The first finding is the likelihood of a REIT issuing equity, instead of relying on debt or other types of financing, is positively related to the percentage of correlated institutional block ownership, especially during economic downturns. The impact of real estate focused, influential investors is also positively related to both SEO announcement returns and post-stock issue returns for a one year period after equity issuance announcement.

TABLE 10
WEALTH EFFECTS

Three day abnormal return for SEO announcements for a 250 trading day period prior to the announcement date [-250,-1]. ***Significant at the 0.01 level; **Significant at the 0.05 level

CAR (-1,1)	Entire Sample	Correlated Block 75th Percentile	Correlated 25th Percentile
Mean	-1.26	-0.64	-2.01
Median	-1.13	-0.51	-1.89
Std Dev	3.1	2.73	1.55
t-statistics	-3.21***	-1.75**	-2.55***
Z-statistics	-3.77***	-2.01***	-2.85***

In addition, operating performance is positively related to real estate focused institutional block ownership. An interesting finding is that the opposite is true for REITs that primarily have non-correlated atomistic institutional ownership. Thus, the results show that 1) correlated stock ownership by institutions with block positions gives some investors information and monitoring advantages within the real estate industry, which is most likely positive news to other shareholders, and 2) these active monitoring benefits

are most likely tied to the informal business networks. These results are inconsistent with the pecking order given that REIT SEOs have less negative valuation effects when correlated institutional block ownership by index investors is large.

DISCUSSION AND CONCLUSION

The pecking order theory (Myers and Majluf, 1984) postulates that firms have a preference for internal cash flow, then debt, and lastly equity. The rationale behind this theory is that the cost of equity is much higher than the other two sources of funding due to greater uncertainty (information asymmetry) regarding future value. The empirical implication of this theory is that equity issuances should be a last resort for firms that are not financially strong. Yet, it is an anomaly that businesses do not adhere to this financing hierarchy, especially REITs. Our research extends the real estate and corporate finance literatures by empirically showing that REITs' tendency to issue equity is related to the reduction in information asymmetry between the firm's management and its institutional block investors with long-term horizons. This type of ownership structure is necessary because unlike most non-regulated publicly traded corporations that rarely have secondary equity offerings of stock (because they can retain earnings and use cash) REITs must pay 90 percent of their net income in dividends and thus need to issue equity and debt to grow their business and earnings.

Information asymmetry is a problem for potential purchasers of new equity because firms have a tendency to time the market and sell at an overvalued issue price, which reflects opportunistic behavior. When potential investors do not have confidence that management is fully disclosing all information, the likelihood of a successful offer will lessen without a credible commitment to disclose the true value. The presence of correlated index investors with block positions within the firm's capital structure appears to be a credible signal that the SEO is not a value reducing action. Most likely, the short-term gain from selling shares at an inflated issue price is much less than the long-term valuation loss. Future research should more thoroughly analyze the valuation implications of our findings (see Kim and Purnanandam, 2014 and Demiralp, Mello, Schlingemann, and Subramaniam, 2011).

Vanguard and other institutions clearly hold a prodigious influence in publicly traded REITs. Their exposure allows them to obtain considerably more pertinent information and potentially influence management decisions. Purchasing the same REIT shares enables these institutions to engage in active corporate governance. Because REITs are forced to frequently raise capital, Danielsen, Harrison, Van Ness and Warr (2014) argue that management has strong incentives to transparently communicate their financial condition to investors. Given that information asymmetries create economic disadvantages, implicitly coordinated affiliated institutional networks may be sought after by REIT management for the increased ability to issue secondary equity offerings. A cost to management is a greater likelihood of a subsequent change in control event. Future research should directly analyze how or whether implicitly correlated block ownership affects systemic risk in the REIT capital markets (Hautsch, Schaumburg and Schienie, 2015).

The overall findings provide a rationale for why REITs appear to be less sensitive to information asymmetry and agency problems, a supposition proposed by Feng, Ghosh and Sirmans (2007), and make financing choices inconsistent with the pecking order theory (Myers and Majluf, 1984). High levels of correlated institutional block ownership decreases information asymmetry and provides a certification effect. When potential actual and potential investors have confidence that REIT management is fully disclosing all information, secondary equity offerings are more likely due to the credible commitment from the collective block ownership position. Additional evidence in our paper shows that as their ownership increases active corporate governance (external monitoring) increases as exhibited by the likelihood of a change in control event. For example, the collective block ownership may also explain why REITs are able to use a large number of accelerated equity offers and have few hostile takeovers.

The uniqueness of our study should spur further research on correlated institutional blocks within the REIT and other industries (Choi, Jin and Yan, 2013, Howe. and Shilling, 1988, and Below, Stansell and Coffin, 2000). If there were to be a serious financial shock to global financial systems, what has been

coined by economist Nassim Taleb as a Black Swan, it could cause a significant market event in this sector of financial securities. For example, if Vanguard and Vanguard REIT decide to expedite the sale of their shares, other shareholders may follow suit. This phenomenon could precipitate a cascading effect within REIT capital markets, an unknown cost, simply because the party with the most information has decided to exit.

ENDNOTES

1. For helpful comments and suggestions, we thank participants at the 2015 American Real Estate Society, Brett Weyman, Dennis Schoenmaker, and Mike Grupe. Please address correspondence to Jocelyn Evans, Department of Finance, School of Business, College of Charleston, 5 Liberty St., Charleston, S.C. 29424. The email and phone (fax) are evansj@cofc.edu and 843-953-6405 (843-953-0754). Timothy Jones is an Assistant Professor at Xaviar University, Department of Finance, Williams College of Business, Xavier University, 3800 Victory Parkway, Cincinnati, Ohio, 45207. The email and phone (fax) are tim.jones.19@gmail.com and 678-852-8608 (850-644-4225). Glenn Mueller is a Professor at the Franklin L. Burns School of Real Estate and Construction Management, College of Business, University of Denver, 2101 S. University Blvd, Denver, Colorado, 80208. The email and phone (fax) are glen.mueller@du.edu and 303-871-3564 (303-871-2971). We are responsible for all remaining errors.
2. Some companies have included language about correlated ownership when defining their poison pill to deter the formation of aggregate correlated institutional ownership in excess of a trigger threshold.
3. In a different context, Dimson et al. (2014) find that collaboration among activist is instrumental in increasing the success rate of environmental/social engagements.
4. There are 157 equity REITs that trade on the U.S. stock exchange according to FTSE NAREIT.
5. Passive investment, active ownership by Mike Scott, Regulations & Governance, April 6, 2014.
6. They state that traditional measures such as total institutional and bloc ownership are noisy measures of monitoring.
7. Specialized REIT indices are affected twice as much as stocks in the S&P 500 Index according to Anderson, Boney, and Guirguis (2012).
8. For example, Goldman Sachs Real Estate Securities Fund, a financial advisor to many public and non-public REITs. Goldman both buys shares in publicly traded REITs and has its own private REITs. In addition, Goldman Sachs is closely tied to the real estate industry network because it provides quality ratings for REITs. The entire list includes U.S. Real Estate Mutual Funds (Alpine Funds, American Century Real Estate Investments, AMG Funds, AR Capital, AssetMark Real Estate Securities, Aston Funds, Baron Funds, BlackRock Real Estate Securities, Brookfield U.S. Listed Real Estate Funds, CGM Funds, Chilton Capital Management LLC, Cohen & Steers, Columbia Real Estate Securities, Compass CMP Funds, Cohen & Steers, Columbia Real Estate Securities, Compass EMP Funds, Davis Funds, Delaware Funds, Dimensional Fund Advisors, Dunham & Associates, DWS Investments, Eaton Vance Real Estate Fund, European Investors, Fidelity Funds, Forward Funds, Franklin Templeton Investments, GMO, Goldman Sachs Real Estate Funds, Great-West Real Estate Fund, Heitman REIT Fund, ING Funds, INVESCO, Ivy Funds, John Hancock, Johnson Mutual Funds, JP Morgan, Lazard, Manning & Napier, Morgan Stanley Funds, Natixis Funds, Neuberger Berman, Nuveen Investments, Oppenheimer Funds, Phocas Financial, PIMCO Funds, Pioneer Investments, Principal Financial Group, Profunds, Prudential Mutual Funds, REMS Group, Rydex SGI, SA Funds, SEI, Spirit of America Mutual Funds, State Street Global Advisors, Stratton Mutual Funds, T. Rowe Price, TIAA-CREF, Vanguard, and Virtus Investment Partners) and Exchange-Traded Funds (Cohen & Steers, First Trust, FlexShares, Guggenheim, Powershares, Schwabb, Vanguard REIT, and Wisdom Tree).

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APPENDIX A – DOMINANT INSTITUTIONAL

Vanguard Funds and Vanguard REIT

Vanguard Funds and Vanguard REIT has 10 board members, eight (80%) are deemed to be independent by the board of directors. The board members include, John J. Brennan Chairman (former CEO), F. William McNabb III (CEO), Charles D. Ellis (Chairman of the Whitehead Institute for Biomedical Research and previous senior adviser to Greenwich Associates international business strategy consulting; **Vanguard pays Greenwich subscription fees for research-consulting services**), Emerson Fullwood (Xerox), Rajiv L. Gupta (Rohm and Haas Co chemicals), Amy Gutman (President of the University of Pennsylvania), JoAnn Heffernan Heisen (Johnon & Johnson), Andre F. Perold (Harvard Business School), Alfred M. Rankin (NACCO Industries), and Peter F. Volanakis (Corning Incorporated). Based upon the real estate informal business network, only 7 of the directors (70%) would be considered independent Mr. McNabb previously worked at a firm that had a business relationship with Vanguard. Vanguard is unique in that the Fund cannot invest directly in real estate unless it is acquired as a result of ownership of securities or other instruments such as companies that invest, deal, or otherwise engage in transactions in real estate, or REIT funds that acquire backed or secured by real estate or interests in real estate. Only Vanguard REIT can act as an ETF or invest directly in real estate properties.

For Vanguard as a whole, several shareholders have block holdings: Charles Schwab & Co. 6.61%, Signal Shares Charles Schwab & Co., Inc. 12.53%, National Financial Services Corp. 15.12%, TIAA-CREF as agent for **JP Morgan Chase Bank** Retirement 8.74%, **State Street Bank & Trust Co.** 6.80%, and **State Street Bank & Trust Co. Trustee** FBO Sun Microsystems Inc. and Tax Deferred Retirement Savings 7.76%. Some of the institutions including JP Morgan and State Street Bank & Trust Co. that coordinate with Vanguard Fund and Vanguard REIT indirectly hold a substantial amount of stock in the Vanguard holding company. The majority of institutions that are consistent block purchasers of REITs do not have intertwining board or stock ownership relationships.

BlackRock Fund and BlackRock Trust

BlackRock is the world's largest asset manager. The fund recently launched iShares MSCI Target Real Estate UCITS ETFC for tracking investments in physical real estate assets in the United States. The blockholders include PNC Financial Services Group (20.8%), Norges Bank (9.2%), and Wellington Management Company (6.0%). As such, none of the coordinated affiliated institutions hold block positions.

With respect to the board of directors, the 19 members include 4 high ranking employees that possess institutional knowledge about BlackRock's businesses and corporate culture. The board categorized 15 directors as independent (79%). The members include Abdlatif Yousef Al-Hamad (Advisory Board of Morgan Stanley), Mathis Cabuallavetta (Union Bank of Switzerland), Dennis Dammerman (GE Company), Jessica Einhorn (Dean John Hopkins University), Fabrizo Freda (Estee Lauder), David Komansky (Board of Merrill Lynch), James Rohr (CEO/Chairman PNC), Susan Wagner (BlackRock CFO), Murry Gerber (energy sector), James Grosfeld (private investor and CEO Pulte Homes), Sir Deryck Maughan Senior advisor of (Kohlberg Kravis Roberts KKR). Thomas Montag (Bank of America), John S. Varley (Rio Tinto), William S. Demchak (President PNC), Laurence D. Fink (Chairman and CEO BlackRock), Robert S. Kapito (President BlackRock), Thomas H. O'Brien (PNC), and Ivan G. Seidenberg (Advisory Partner of Perella Weinberg Partners). Only 1 director from **Morgan Stanley** is affiliated with the coordinated block, and 1 director is directly related to the real estate industry.

Cohen & Steers (RFI)

Cohen & Steers is the nation's first real estate mutual fund. The fund has one affiliated investor from the pack, Morgan Stanley that has a 4.33% ownership stake. The board of directors determined that Mr. Rhein, Mr. Simon, Mr. Villani and Mr. Connor does not have a material relationship with the firm either directly or as a partner, shareholder or officer and is, therefore, "independent" in accordance with the NYSE listing standards and the applicable SEC rules. Advisory relationships and outstanding common stock of the firm are not considered. Further, the board of directors considered, but did not believe to be material, the fact that certain members of the board of directors are investors in certain mutual funds that the firm manages. Only Mr. Steers and Mr. Cohen are not independent. As a result, 4 out of 6 or 67% of the directors are considered independent by NYSE standards.

Robert H. Steers is the Chief Executive Officer and Director, whereas Martin Cohen is the Executive Chairman and Director. Both men are the co-founders with substantial experience in the real estate industry. For example, Martin Cohen is a founding member of the Board of Governors of the National Association of Real Estate Investments in addition to previously managing the Citibank Real Estate Stock Fund. Other board members are also directly or indirectly connected to the real estate informal business network. Peter Rhein is a general partner of Sarlot and Rhein, a real estate investment partnership. Edmond D. Villani previously served as Vice Chairman of Deutsche Asset Management. Of the key affiliated investors, the only tie is Richard Simon, retired from Goldman, Sachs & Co. The board of directors, however, did not consider any of these people to be an internal director because of the following statement: "Under the NYSE listing standards, a director does not qualify as independent unless our Board of Directors affirmatively determines that the director does not have a "material relationship" with us, either directly or as a partner, shareholder, or officer of an organization that has a relationship with us."

Frank Connor, CFO of Textron Inc, could be considered an independent director, but he was over the telecom investment banking division at Goldman Sachs (a part of the coordinated pack). As a result, 2 out of 6 board of directors or 34% have past ties to a firm in the coordinated affiliated pack. Thus, from the informal business network perspective, Cohen & Steers has 0 independent directors.

State Street Co.

State Street Corporation (STT) is the world's leading provider of financial services to institutional investors. For example, State Street Global Markets, LLC is the distributor for the Dow Jones U.S. Select REIT Index (RWR) since its inception in 2001 (SPDR Dow Jones REIT ETF). Hence, the firm is well trenched within the real estate industry informal network.

State Street Bank has 12 board of directors from which 11 (92%) are considered to be independent by the firm. The directors include José E. Almeida Chairman (President and Chief Executive Officer, Covidien plc, global healthcare products company), Kennett F. Burnes (Retired Chairman, President and Chief Executive Officer, Cabot Corporation, manufacturer of specialty chemicals and performance

materials), Peter Coym (Retired Head of Lehman Brothers Holdings Inc. in Germany, financial services), Patrick de Saint-Aignan (Retired Managing Director and Advisory Director for **Morgan Stanley**, global financial services), Amelia C. Fawcett Deputy Chairman (Investment AB Kinnevik, a long-term oriented investment company based in Sweden), Linda A. Hill Wallace Brett (Donham Professor of Business Administration, Harvard Business School), Joseph L. Hooley Chairman (President and Chief Executive Officer State Street Corporation Chairman), Robert S. Kaplan (Senior Associate Dean for External Relations and Professor of Management Practice, Harvard Business School), Richard P. Sergel (Retired President and Chief Executive Officer, North American Electric Reliability Corporation, electric reliability organization), Ronald L. Skates (Former Chief Executive Officer and President, Data General Corp., manufacturer of muti-user computer systems; private investor), Gregory L. Summe (Managing Director and Vice Chairman of Global Buyout, Carlyle Group, global alternative asset manager), and Thomas J. Wilson Chairman (President and Chief Executive Officer, Allstate Corporation, property and casualty insurance). The blockholders consist of **T. Rowe Price Associates** (6.8%), Massachusetts Financial Services Company (6.2%), and **State Street Corporation** (5.0%).

T. Rowe Price

T. Rowe Price has 8 directors (6 independent). The directors are Edward C. Bernard (vice chairman of the Board of Governors of the Investment Company Institute, the national trade association for the mutual fund industry), James Brady Ballantrae International LTD (a management consulting firm), Mary Bush (chairman of Bush International LLC, an advisor to U.S. corporations), Donald Hebb (chairman and a founding partner of ABS Capital Partners), Dr. Freeman Hrabowski (president of the University of Maryland), James A.C. Kennedy (CEO, Robert MacLean Northleaf Capital Partners, Canada's leading independent global private markets fund manager and advisor), Brian Rogers (CIO), Dr. Alfred Sommer (John Hopkins), and Anne Marie (Whittemore McGuireWoods LLP). The blockholders are **BlackRock** 5.00%, **Vanguard Group** 5.05%.

Invesco

Invesco has 11 directors (10 independent). The directors are Denis Kessler (SCOR SE), Richard Wagoner (General Motors, Martin Flanagan (CEO Invesco), Robert Henrikson (MetLife), Ben Johnson (Alston & Bird), Thomas Presby (Deloitte), Joseph Canion (AIM acquired by Invesco), Edward Lawrence (Ropes & Gray), Phoebe Wood (CompaniesWood), Rex Adams (Duke University), and John Banham (Confederation of British Industry). The blockholders are **T. Rowe Price Associates, Inc.** 8.9%, FMR LLC 7.1%, BlackRock, Inc.5.6%, The **Vanguard Group** 5.4% and **JPMorgan Chase & Co**. 5.4%.

FMR

FMR has 12 directors with 5 additional employee directors. The non-employee directors are Edward Boykin (Computer Sciences Corporation CSC), Linda Levinson (partner of GRP, a private equity investment fund for start-up firms in the retail and electronic industries), Deanna Oppenheimer (CEO of CameoWorks LLC, a global retail and financial services advisory firm), Kurt Kuehn (CEO of UPS), William Nuti (Chairman of NCR), Gary Daichendt (private investor and managing member of Theory R Properties LLC, a commercial real estate firm), Robert DeRodes (founder of DeRodes Enterprises LLC information technology), and Richard Clemmer (CEO NXP B.V. semiconductor). The blockholders include FMR insiders 9.12%, Greenlight Entities 6.40%, **BlackRock** 6.34%, and **Vanguard Group** 5.53%.

CBRE Clarion

CBRE Clarion Global Real Estate Income Fund is an established firm in the industry with five trustees that are mostly tied to the real estate industry. The trustees include T. Ritson Ferguson (CEO CBRE), Asuka Nakahara (Director of Zell-Lurie Real Estate at Wharton School of Business), Frederick Hammer (Annuity and Life), Richard Sutton (Board of Directors of Investors in Global Real Estate Limited), and John Bartholdson (Trump Group). This fund has no blockholders.

JP Morgan

J.P. Morgan has 11 directors (9 independent). The directors are Linda Bammann (JP Morgan Chase), James Bell (Boeing), Crandall Bowles (The Springs Company window products), Stephen Burke (NBC Universal), James Crown (Henry Crown and Company, privately owned investments in real estate), James Dimon (JP Morgan Chase), Timothy Flynn (KPMG), Laban Jackson (Clear Creek Properties), Michael Neal (GE Capital), Lee Raymond (Exxon Mobil), and William Weldon (Johnson & Johnson). The only blockholder is **BlackRock** (6.7%).

Morgan Stanley

Morgan Stanley had 15 directors. Twelve of these directors are categorized as independent based upon NYSE specifications, but 2 of the 12 have relationships with Morgan Stanley. The board of directors include Erskine Bowles (University of North Carolina), Howard Davies (Phoenix Group Holdings), Thomas Glocer (Thomson Reuters Corporation), James P. Gorman (Chairman of the Board and CEO of **Morgan Stanley**), Robert Herz (Presidend Robert H. Herz LLC, consulting), C. Robert Kidder (Chairman and CEO of 3Stone Advisors LLC), Klaus Kleinfeld (Chairman and CEO of Alco Inc), Donald T. Nicolaisen (Chief Accountant for the U.S. SEC), Hutham S. Olayan (President and CEO of Playan Group), James W. Owens (Chairman and CEO of Catepillar), O. Griffith Sexton (Advisory Director of **Morgan Stanley**), Ryosuke Tamakoshi (Senior Advisor if The Bank of Tokyo-Mitsubishi), Massaki Tanaka (MUFG), Laura D. Tyson (University of California), and Rayford Wilkins Jr. (AT&T) . The institutions with block positions include MUFG 22.1% and **State Street Bank** 7.0%.

Daiwa Asset Management Co.

Information is unavailable

Goldman Sachs

Goldman Sachs has 13 directors (77% independent). These directors include Lloyd C. Blankfein, Chairman and CEO Goldman Sachs), M. Michele Burns (Stanford), Gary D. Cohn (President Goldman Sachs), Claes Dahlback (AB and Foundation Asset Management), William W. George (Harvard), James A. Johnson (Johnson Capital Partner), Lakshmi N. Mittal (ArcelorMittal), Adebayo Ogunlesi (Global Infrastructure Partners), Peter Oppenheimer (Apple), James J. Schiro (Zurich Insurance Group Ltd), Debora L. Spar (Barnard College), Mark E. Tucker (AIA Group Limited), and David A. Viniar (Retired Goldman Sachs). Although none of the directors have affiliations with any other institutions within the affiliated group, a few have block ownership positions in Goldman Sachs (Berkshire Group over 5%, Parties to Shareholders' Agreement 9.53%, **BlackRock** 5.13%, and **State Street Corporation** 5.37%).

T Rowe Price

T. Rowe Price Fund and REIT have 11 directors on the board, with 82% independence percentage based on NYSE rules. The directors include Edward C. Bernard (Price Group), James T. Brady (Ballantrae International), Mary K. Bush (Bush International), Donald Hebb Jr. (ABS Capital Partners), Dr. Freeman A. Hrabowski (University of Maryland), James A. Kennedy (Price Group), Robert F. MacLellan (Northleaf Capital Partners), Brian Rogers (Price Group), Dr. Alfred Sommer (John Hopkins), Dwight S. Taylor (COPT Development & Construction Services real estate), and Anne Marie Whittemore (McGuire Woods LLP). None of the affiliated institutions have a board of directors in T. Rowe Price, but **BlackRock** Fund (5%) and the **Vanguard Group** (5.05%) had block positions.

APPENDIX - B VARIABLE DEFINITIONS

Variable	Definition
Size	The logarithm of the market value of equity measured as the number of shares times the stock price one quarter prior to the SEO or SDO announcement.
Leverage	Book value of debt divided by the market value of equity plus book value of liabilities.
M/B	The market value of equity plus book value of liabilities divided the book/book value of assets one quarter prior to the announcement of an SEO or SDO.
Cash Ratio	Cash plus cash equivalents/book value of assets for an individual firm.
Market Volatility	Standard deviation of daily stock returns over a 3 month period ending one month prior to the announcement of an SEO or SDO.
Size of Offer	The logarithm of the number of shares times the offer price.
# Institutions	Number of institutions and mutual funds with outstanding shares at an individual firm.
Correlated Blocks%	Total ownership for an individual firm held by institutions and mutual funds with block positions in at least 5% of the publicly traded REITs in the industry.
Total Institution%	Proportion of outstanding shares by institutions and mutual and Mutual Fund% for an individual firm.
Trading Volume	Average number of shares traded over a 3 month period ending one month prior to the announcement of an SEO or SDO.