

Do Management Changes Matter? An Empirical Investigation of REIT Performance

Authors G. Stacy Sirmans, H. Swint Friday and
Russell M. Price

Abstract

Management's (board of directors or executive officers) contribution to a firm is difficult to directly observe, although stock return performance can be a source of information. This study addresses this issue by extending the work of McIntosh, Rogers, Sirmans and Liang (1994) by analyzing management changes within REITs from 1984 to 2002. The findings indicate a significant relationship between negative performance and a management change from a period three months prior to the change in management. Logit and probit analysis are used to determine whether negative firm performance (measured by its relationship to market returns) can predict the likelihood of a management change. No predictive ability is found.

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Major events in a firm's life include management turnover. This may include changes in the structure of the board or executive management. In some cases, top management departure is a result of raiding firms buying away good talent (Fee and Hadlock, 2003) while a better opportunity to utilize one's talents is another reason. In many cases, changes in management improves overall firm performance. This implies that the previous performance of the firm was not meeting expectations.

Top management in a firm is identified by its board structure and executive management structure. Typical board makeup consists of the chair, vice-chair, trustees and other directors. Executive management is usually identified as the chief executive officer (CEO), chief operating officer (COO), chief financial officer (CFO), president, vice-president and other officers.

McIntosh, Rogers, Sirmans and Liang (1994) provided the first study on the performance of real estate investment trusts (REITs) and their ability to predict

changes in management. They found an inverse relationship between firm performance and the probability of a management change. Their study included 55 REITs established by 1990. The study presented here extends their work by analyzing the performance of 158 REITs based on performance measures centered on events from 1984 to 2003. This time period includes the effects of the huge REIT boom from 1996 to 1999.

Real estate investment trusts have been in place since the 1970s. They are similar to closed-end mutual funds that act as an intermediary for individuals to passively invest in income-producing real estate. The purpose for their creation was twofold: to give investors another vehicle to invest in real estate and offer firms and asset holders a tax relief incentive for their real estate holdings. Regulation requires that 95% of REIT profits be distributed to stockholders. This requirement is the primary stipulation for the tax relief.

Prior to the 1990s, the upper management (directors, trustees, or employees) of a REIT could not actively engage in managing REIT property holdings, but could engage in day-to-day operations. Usually, independent and external real estate professionals managed REIT assets. However, as Ling and Ryngaert (1997) point out, the REIT management structure dramatically changed in the 1990s when REIT management was allowed to more actively participate in the management of real estate assets. Today, most REITs are actively managed, requiring greater managerial skill than previously. According to Ling and Ryngaert, this change may make REITs more vulnerable to the asymmetric information problems faced by other firms.

As with other firms, REIT performance will be interpreted by the market in an efficient setting. If the firm is performing badly relative to the market, a change in management may be in order. This study looks to identify negative performance in a firm prior to a change in management, and positive performance shortly after the change event. If management change is a result of poor firm performance, it would follow that once the change occurs, positive reaction by the market would occur. The issue in question is the time required for the firm to realize positive performance after the management change.

The Literature on Management Turnover

Furtado and Karan (1990) provide a detailed review and summary of various empirical studies of the causes, consequences and market effects of management turnover for typical corporations. Other studies examine internal forces monitoring management performance such as the board of directors (Fama, 1980), competing managers (Fama and Jensen, 1983) and block shareholders (Shleifer and Vishny, 1986). Results show an inverse relationship between firm performance and management turnover (Warner, Watts and Wruck, 1988). The relationship generally weakens when the manager acquires power through family ties or stock ownership. Firms that have outsider-dominated boards tend to have a strong relationship between firm performance and turnover (Weisbach, 1988).

Higher management turnover also occurs following mergers, acquisitions, tender offers, proxy fights and negotiated block trades (Klein and Rosenfeld, 1988; Martin and McConnell, 1989; and Barclay and Holderness, 1989). Unsuccessful tender offers can still prompt management turnover, as the offer signals potential change (DeAngelo and DeAngelo, 1989). Positive firm performance, appearing after the payment of “greenmail” (stock repurchases on favorable terms) leads to above average turnover one year after the payment (Klein and Rosenfeld, 1988). Contradictory results exist among studies of share price effects around the announcement of management turnover (Reinganum, 1985; Bonnier and Bruner, 1989; Warner, Watts and Wruck, 1988; and Weisbach, 1988).

The focus of this analysis is on the relationship between performance and top management turnover and the concurrent market reaction to the announcement of the impending change. Forced resignations of top managers are generally preceded by large declines in performance and followed by sharp increases. However, normal resignations show minimal effect (Denis and Denis, 1995). The length of CEO tenure can affect performance. Using return on assets (ROA) instead of stock returns as a measure of performance, Allgood and Farrell (2000) find that a constant negative relationship between performance and forced turnover exists throughout an entrenched CEO’s tenure. The result becomes more pronounced after ten years.

Examining Performance

Top managers’ contributions to the firm cannot be directly observed. However, stock returns can be a source of information. The study by McIntosh et al. (1994) performs a joint test on the hypothesis that information about management performance is reflected in stock returns, and the return information is then used to evaluate performance. Poor performance is implied from declining or negative stock returns, on an absolute level or in relation to the market. If poor performance is persistent, then a change in management will likely occur. The manager may either be fired or reassigned. New management will come either from within via promotion, or “new blood” will be imported. Poor performance can lead to changes on the board level as well.

Management change can also occur when the firm is doing well. Promotions can occur due to superior performance. The firm’s good fortune can put managers in a position of strength, making them a hot commodity and a target to outsiders. The subsequent wooing can lead to manager departure as a result of a successful management raid (Fee and Hadlock, 2003).

The hypothesis in this study is that poor performance, as measured by negative abnormal returns (AR) and cumulative abnormal returns (CAR), will lead to a management change. That is, $AR = 0$ and $CAR = 0$. Conversely, positive AR and CAR will occur after the announcement. In addition, the study looks for an ability to predict a change in management based on the level of performance.

Performance, measured by stock returns, can be evaluated in absolute terms. The study also looks at the return of the subject firms in relation to the market.

The Data

The database contains 434 management changes within 158 REITs from 1984 to 2003. The distribution of events and REITs by year is displayed in Exhibit 1. These stocks trade on the NYSE and AMEX. Real estate investment trusts that trade on the NASDAQ are omitted since change information is not readily available.

The changes in management are identified from *The Wall Street Journal Index*, *Lexis-Nexis*, *Business Newswire*, *PR Newswire*, *Southwest Newswire* and other

Exhibit 1 | Management Changes

Year	Changes	REITs
1984	1	1
1985	2	2
1986	2	2
1987	2	2
1988	1	1
1989	6	5
1990	5	4
1991	0	0
1992	5	5
1993	10	10
1994	29	19
1995	32	26
1996	37	24
1997	58	33
1998	74	55
1999	51	42
2000	43	23
2001	32	27
2002	35	26
Total	425	307

Notes: Annual listing of management changes at REITs from 1984 to 2002.

publications. The type of individual affected by the change is also identified. Board position changes include the chair of the board, the vice-chair of the board, the trustees, and directors. Corporate position changes include the CEO, COO, CFO, president, or vice-president. Multiple individuals within the trustee, director, or vice-president categories are treated as one individual in that category. Multiple changes within the board or corporate category are treated as one.

The analysis is performed in two stages. The first task is to determine which management changes have the most profound effect and are easiest to predict: changes in the board structure or corporate structure (officers). Since the corporate structure is most closely involved in the day-to-day operations of the firm, it would produce the most influence on performance, and should create a greater contribution to management change.

The second step is to examine the type of change relative to performance. Change is evaluated in three categories: announcement/appointment (annapp), hire and resign. Promotions from within are classified as announcements/appointments. Elections of present board members to new positions (existing board member becomes vice-chairman, for example) are classified as announcements/appointments. If the election involved an outsider, it is classified as a hire. The resign category is classified as forced departure (firings and dismissals are included), although events such as death are included. The hire category captures the effect of all outsiders.

Firms that are not identifiable by CUSIP number are eliminated along with events in 2003 due to limited access to returns data. The remaining data contain 410 management changes among 153 REITs. Exhibit 2 shows the breakdown of the 410 events.

The Methodology

Since the performance level of top management is not directly observable, stock returns are used as a measure of performance. To examine the effect of poor performance on management change, return performance measures (NYSE/AMEX/NASDAQ composite equal-weighted returns) are compiled from CRSP, starting three years prior to the date of the management change. Real estate investment trust composite equal-weighted and value-weighted returns are also used as performance benchmarks.

Cumulative abnormal returns are analyzed for a window one year before the event date to one day after the event date (-255, +1), three months before the event date to one day after the event date (-65, +1), along with change two weeks prior (-10, +1) to the event date. Short-term information effects of the event are examined by looking at a (-1, +1) window. Windows of (-255, +10), (-65, +10), (-10, +10) and (-1, +10) are also examined to check for any post-event information effects.

Exhibit 2 | Management Changes

Year	All Firms	AnnApp	Board	Hire	Officer	Resign
1984	1	1	1	0	0	0
1985	2	0	2	0	0	0
1986	2	1	0	1	2	0
1987	2	1	0	0	1	1
1988	1	1	0	0	1	0
1989	6	4	6	0	4	2
1990	5	3	3	1	2	1
1991	0	0	0	0	0	0
1992	5	0	2	1	4	4
1993	10	8	7	2	3	0
1994	29	16	17	7	14	3
1995	32	22	19	7	14	3
1996	35	19	17	8	26	8
1997	56	40	21	12	38	6
1998	73	52	29	8	45	11
1999	50	34	19	10	28	6
2000	37	24	16	7	28	10
2001	31	24	12	10	18	0
2002	33	25	15	5	21	5
Total	410	275	186	79	249	60

Note: The table is an annual listing of analyzed management changes at REITs, by category, from 1984 to 2003.

As a variation to the estimation technique of Brown and Warner (1985), an estimation window from three years prior to three months prior ($-765, -65$) is created. β is then used to calculate ARs:

$$AR_i = R_i - \alpha_i - \beta_i^* R_m. \quad (1)$$

In addition, the calculation:

$$AR_i = \log(1 + R_i - \alpha_i - \beta_i^* R_m). \quad (2)$$

Leads to:

$$CAR_i = \exp\left(\sum_{i=1}^n AR_i\right), \quad (3)$$

where n = the number of days in the event window.

Average AR and CAR are calculated and tested to see if they are different from zero. The expected results are that a negative CAR precedes changes in management, followed by a positive CAR post-event.

To examine the extent to which poor performance predicts management changes, a logit analysis similar to that of McIntosh et al. (1994) is used. If returns are normally distributed, however, probit analysis will determine the probability of predicting returns. Previous studies have used lagged firm returns (expected sign negative) and lagged market returns (expected sign positive) as independent variables. The returns measure against the market is accounted for by using a variable that represents the difference between the firm return and the market return. These variables will have lags of one, two and three years. The dependent variable is a binary variable with a value of one when a change occurs, zero otherwise. Each event date uses the firm performance against the performance of all REITs present at the event date. Real estate industry performance is incorporated by using returns from the Fama–French 48 return database.

The stock price performance time period is not known *a priori*. As a result, several different time periods are used to analyze and measure performance. Poor performance is hypothesized to measure increased probability of a management change, thus a negative sign is expected on the probability coefficient, with the probability increasing as the event date nears.

Results

Return Performance One Year Prior to Management Change

Exhibit 3 provides the results of the statistical analysis of testing how ARs are significantly different from zero over varying event windows. Panel A uses the NYSE/AMEX/NASDAQ composite equal-weighted return as the benchmark to determine ARs. For a period of one year prior to the announcement of a management change, performance has a significant effect on management changes overall. The average daily AR of -6.3 basis points (t -Statistic of -8.49) indicates that negative firm performance will lead to a management change. Negative performance has a significant effect on change in board and officer structure at

Exhibit 3 | Performance Around Management Change

	All Changes	AnnApp	Board	Hire	Officer	Resign
Panel A: The NYSE/AMEX/NASDAQ composite equal-weighted return index is the performance benchmark.						
[-255, +1]	-0.063 -8.494*** (0.000)	-0.072 -7.397*** (0.000)	-0.078 -6.581*** (0.000)	-0.035 -2.343** (0.019)	-0.046 -5.979*** (0.000)	-0.068 -3.887*** (0.000)
[-255, +10]	-0.063 -8.569*** (0.000)	-0.072 -7.439*** (0.000)	-0.077 -6.619*** (0.000)	-0.035 -2.389** (0.017)	-0.048 -6.386*** (0.000)	-0.070 -4.034*** (0.000)
[-65, +1]	-0.070 -4.601*** (0.000)	-0.071 -3.533*** (0.000)	-0.075 -3.164*** (0.002)	-0.052 -1.689* (0.091)	-0.035 -2.300** (0.021)	-0.095 -2.760*** (0.006)
[-65, +10]	-0.066 -4.628*** (0.000)	-0.066 -3.506*** (0.000)	-0.070 -3.114*** (0.002)	-0.051 -1.710* (0.087)	-0.043 -2.995*** (0.003)	-0.093 -2.896*** (0.004)
[-10, +1]	-0.111 -2.401** (0.016)	-0.001 -2.087** (0.038)	-0.001 -1.771* (0.077)	-0.027 -0.434 (0.665)	0.009 0.279 (0.780)	-0.097 -1.378 (0.169)
[-10, +10]	-0.079 -2.519** (0.012)	-0.095 -2.165** (0.030)	-0.067 -1.600 (0.110)	-0.032 -0.585 (0.559)	-0.038 -1.447 (0.148)	-0.089 -1.605 (0.109)
[-1, +1]	-0.168 -1.166 (0.244)	-0.195 -0.905 (0.366)	0.140 0.411 (0.681)	-0.120 -0.792 (0.429)	0.014 0.178 (0.859)	-0.079 -0.480 (0.632)
[-1, +10]	-0.069 -1.481 (0.139)	-0.073 -1.131 (0.258)	-0.016 -0.291 (0.771)	-0.060 -0.716 (0.474)	-0.072 -1.994** (0.046)	-0.079 -1.001 (0.317)
Panel B: The REIT composite equal-weighted return index is the performance benchmark.						
[-255, +1]	-0.068 -9.255*** (0.000)	-0.077 -7.981*** (0.000)	-0.084 -7.105*** (0.000)	-0.051 -3.514*** (0.000)	-0.045 -5.968*** (0.000)	-0.057 -3.307*** (0.001)
[-255, +10]	-0.068 -9.401*** (0.000)	-0.076 -8.021*** (0.000)	-0.084 -7.270*** (0.000)	-0.053 -3.694*** (0.000)	-0.047 -6.312*** (0.000)	-0.059 -3.459*** (0.001)
[-65, +1]	-0.096 -6.023*** (0.000)	-0.105 -4.889*** (0.000)	-0.102 -4.084*** (0.000)	-0.083 -2.686*** (0.007)	-0.064 -3.951** (0.000)	-0.084 -2.419** (0.016)
[-65, +10]	-0.093 -6.235*** (0.000)	-0.099 -4.945*** (0.000)	-0.102 -4.365*** (0.000)	-0.087 -2.934*** (0.003)	-0.068 -4.512*** (0.000)	-0.086 -2.669*** (0.008)

Exhibit 3 | (continued)
Performance Around Management Change

	All Changes	AnnApp	Board	Hire	Officer	Resign
Panel B: The REIT composite equal-weighted return index is the performance benchmark. (continued)						
[-10, +1]	-0.167 -3.479*** (0.005)	-0.219 -3.067*** (0.002)	-0.137 -2.425** (0.015)	-0.062 -1.018 (0.309)	-0.510 -1.427 (0.154)	-0.093 -1.483* (0.139)
[-10, +10]	-0.125 -3.824** (0.000)	-0.147 -3.149*** (0.002)	-0.122 -2.841*** (0.005)	-0.086 -1.559 (0.119)	-0.073 -2.635*** (0.009)	-0.097 -1.885* (0.060)
[-1, +1]	-0.248 -1.690* (0.091)	-0.325 -1.473 (0.141)	-0.034 -0.314 (0.754)	-0.152 -0.988 (0.324)	-0.103 -1.341 (0.180)	-0.000 -0.002 (0.999)
[-1, +10]	-0.113 -2.361** (0.018)	-0.119 -1.754* (0.080)	-0.086 -1.507 (0.132)	-0.126 -1.503 (0.133)	-0.103 -2.699*** (0.007)	-0.077 -1.049 (0.295)
Notes: Average abnormal return (AR) performance (in percent) on event windows around management change. Announcements of REITs from 1984 to 2002 (<i>t</i> -Stats. shown, prob < <i>t</i> in parentheses).						
* Significant at the 10% level.						
**Significant at the 5% level.						
*** Significant at the 1% level.						

the 1% level (7.8 basis points and 4.6 basis points, respectively). Performance also has a significant influence on the type of management change. Changes that involved an announcement or appointment are negative (7.2 basis points) and significant at the 1% level. Forced departures (actual or “reported” resignations, firings and dismissals) are negative (6.8 basis points) and significant at the 1% level. The effect of changes that brought in outside hires is negative (3.5 basis points), but significant only at the 5% level. When the event window is adjusted to ten days after the management change to test for the effects post-event, increased negative effects of performance around the event are observed. These results imply continued negative response to the management change in the short-term period after the event occurs.

Panel B of Exhibit 3 uses the REIT composite equal-weighted return as a performance benchmark. For a period of one year prior to the announcement of a management change, performance has an even greater effect on management changes overall. The average daily AR of the overall sample is -6.8 basis points

(*t*-Statistic of -9.25). There is an increased negative performance on change in board structure at the 1% level (from -7.8 to -8.4 basis points). Performance also has a significant influence on the type of management change. An increased negative performance involving an announcement or appointment (from -7.2 to -7.7 basis points) is significant at the 1% level. Forced departures (actual or “reported” resignations, firings and dismissals) are negative (6.8 basis points) and significant at the 1% level. The effect of changes that brought in outside hires is now significant at the 1% level (from -3.5 to -5.1 basis points). An increased negative effect is evident post-event. When the analysis is performed using NYSE/AMEX/NASDAQ and REIT composite value-weighted returns, the results (not shown) are consistent with the results using equal-weighted returns.

Return Performance Three Months Prior to Management Change

For a period of three months prior to the announcement of a management change, performance has a significant effect on management changes overall. Panel A of Exhibit 3 shows the average daily AR of 7.0 basis points (*t*-Statistic of 4.60) indicates a continuing effect of negative firm performance. Negative performance has a significant effect on change in officer structure at the 5% level. Performance also has a significant influence on the type of management change. Changes that involved an announcement or appointment are negative and significant at the 1% level. Forced departures (actual or “reported” resignations, firings and dismissals) are negative and significant at the 1% level. The effect of changes that brought in outside hires is negative, but significant only at the 5% level. When the event window is adjusted to ten days after the management change to test for the effects post-event, the results show increased negative effects of performance around the event, with the exception of board changes. These results imply continued negative response to the management change in the short-term period after the event occurs. When the REIT equal-weighted composite returns are used (Panel B of Exhibit 3), an increased negative effect of performance on change is shown.

Return Performance Two Weeks Prior to Management Change

The effect of performance measured two weeks prior to the management change is measured. At this point, a decision probably has been made on the imminent changes (death being an exception, especially if sudden), so a smaller effect than previous results is expected. A look at Panel A of Exhibit 3 shows a larger coefficient of performance on all categories except new hires and officer changes. Although the coefficients are higher, the number of standard errors from zero is lower. As expected, performance measures taken the day before the event have no significant effect; surprisingly, the officer change category is significant at the 5% level. When the REIT composite equal-weighted returns are used as

the benchmark, the AR coefficients increase; a significant negative effect of performance on changes overall now appears in the short-term event window.

Overall, performance measures of one year and performance measures three months prior to the change are significant. Announcements/appointments are significant at periods from three months to ten days before the management change. Forced departures are significant three months prior to the management change. Changes in officer structure produce more profound effects up to ten days after the management change. Results are stronger when the REIT composite equal-weighted return is used as a benchmark.

Cumulative Abnormal Returns Prior to Management Change

The results of the analysis for CARs are shown in Exhibit 4. Panel A uses the NYSE/AMEX/NASDAQ composite equal-weighted returns as a benchmark; Panel B uses the REIT composite equal-weighted returns. Results in Panel A show at a period of one year prior to a management change, there is an average CAR of -6.59% overall, significant at the 1% level. Negative performance has a stronger effect on board structure (-9.26% , 1% significance level) than officer structure (-4.28% , 10% significance level). Across types of management change, announcement/appointment (-7.39%) is significant at the 1% level. Returns in the resign category is the largest (-10.4%), but only significant at the 5% level. At a period of three months prior to a management change, firm performance affects management change overall. The level of significance is at the 5% level one day after the change and at the 1% level for the ten-day post-event period. Panel B shows larger average CARs. All categories are significant at the 1% level; the new hire category is significant only at the 5% level.

There is a strong relationship three months prior to the management change between performance and forced departures, as evidenced by the same levels of significance that are in the overall sample. The performance relationship with announcements/appointments is significant at the 5% level. The performance relationship with board changes is significant at the 5% level at one day after a management change and a 10% level ten days after a management change. No significant effect of performance on hires and officer changes is found.

A 5% level of significance is found ten days before changes (overall sample, board changes +1 and forced departures +10). Surprisingly, there is a post-announcement effect of performance on officer changes starting one day prior to the management change.

The results in Panel B of Exhibit 4 show larger average CARs across all categories. The effect of performance on new hires disappears at ten days before the event. When the event window is examined from one day before to ten days after the event, a significant negative effect of performance on changes is present in the overall sample, along with announcement/appointments and officer changes.

Exhibit 4 | Performance Around Management Change

	All Changes	AnnApp	Board	Hire	Officer	Resign
Panel A: The NYSE/AMEX/NASDAQ composite equal-weighted return index is the performance benchmark.						
[-255, +1]	-6.585 -3.657*** (0.000)	-7.386 3.353*** (0.001)	-9.261 -3.497*** (0.001)	-1.512 -0.327 (0.745)	-4.276 -1.851* (0.066)	-10.400 -2.530** (0.014)
[-255, +10]	-6.642 -3.573 (0.000)	-7.395 -3.251*** (0.001)	-9.202 -3.340*** (0.001)	-1.471 -0.302 (0.764)	-4.890 -2.057** (0.041)	-11.102 -2.743*** (0.008)
[-65, +1]	-2.398 -2.584** (0.010)	-2.021 -1.666* (0.097)	-2.998 -2.141** (0.034)	-1.869 -0.908 (0.367)	-0.566 -0.485 (0.629)	-4.939 -2.549** (0.013)
[-65, +10]	-2.551 -2.634*** (0.009)	-2.168 -1.703* (0.090)	-2.907 -1.906* (0.058)	-1.867 -0.868 (0.388)	-1.319 -1.105 (0.270)	-5.641 -2.963*** (0.004)
[-10, +1]	-0.724 -1.708* (0.090)	-0.841 -1.387 (0.167)	-0.906 -1.752* (0.082)	-0.175 -0.298 (0.767)	0.305 0.723 (0.470)	-0.953 -1.211 (0.231)
[-10, +10]	-0.942 -1.920* (0.057)	-1.079 -1.617 (0.107)	-0.934 -1.372 (0.172)	-0.271 -0.291 (0.772)	-0.468 -0.884 (0.378)	-1.591 -1.772* (0.082)
[-1, +1]	-0.210 -0.722 (0.4701)	-0.172 -0.417 (0.677)	0.140 0.411 (0.681)	-0.266 -0.570 (0.570)	0.106 0.447 (0.656)	-0.167 -0.351 (0.727)
[-1, +10]	-2.551 -0.952 (0.342)	-0.344 -0.623 (0.534)	0.181 0.280 (0.780)	-0.392 -0.474 (0.637)	-0.677 -1.724* (0.086)	-0.784 -1.081 (0.284)
Panel B: The REIT composite equal-weighted return index is the performance benchmark.						
[-255, +1]	-8.591 -5.893*** (0.000)	-8.676 4.560*** (0.000)	-10.810 -4.749*** (0.000)	-7.804 -2.477** (0.016)	-6.128 -3.416*** (0.001)	-9.800 -2.905*** (0.005)
[-255, +10]	-8.845 -6.000*** (0.000)	-8.711 -4.490*** (0.000)	-11.095 -4.771*** (0.000)	-8.612 -2.764*** (0.008)	-5.525 -3.111*** (0.002)	-10.432 -3.127*** (0.003)
[-65, +1]	-3.750 -4.006*** (0.000)	-3.584 -2.876*** (0.000)	-4.402 -3.151*** (0.002)	-4.028 -1.966* (0.053)	-2.192 -1.945* (0.053)	-4.447 -2.466** (0.017)
[-65, +10]	-4.141 -4.314*** (0.000)	-3.794 -2.943*** (0.004)	-4.862 -3.256*** (0.001)	-4.820 -2.350** (0.022)	-2.970 -2.639*** (0.009)	-5.286 -2.979*** (0.004)

Exhibit 4 | (continued)
Performance Around Management Change

	All Changes	AnnApp	Board	Hire	Officer	Resign
Panel B: The REIT composite equal-weighted return index is the performance benchmark. (continued)						
[-10, +1]	-1.321 -2.876*** (0.004)	-1.642 -2.462** (0.015)	-1.341 -2.407** (0.017)	-0.604 -0.983 (0.329)	0.353 -0.788 (0.432)	-0.950 -1.301 (0.199)
[-10, +10]	-1.837 -3.559*** (0.000)	-1.079 -2.789*** (0.006)	-1.997 -2.691*** (0.008)	-1.430 -1.593 (0.116)	-1.201 -2.352** (0.020)	-1.815 -2.268** (0.028)
[-1, +1]	-0.461 -1.539 (0.125)	-0.172 -1.349 (0.179)	0.008 0.023 (0.981)	-0.357 -0.719 (0.474)	0.249 -1.086 (0.279)	0.048 0.115 (0.909)
[-1, +10]	-0.947 -2.342** (0.020)	-1.642 -2.462** (0.015)	-0.659 -1.025 (0.307)	-0.392 -1.423 (0.159)	-1.071 -3.005*** (0.003)	-0.784 -1.194 (0.238)
Notes: Average cumulative abnormal return (CAR) performance (in percent) on event windows around management Change. Announcements of REITs from 1984 to 2002 (<i>t</i> -Stats. shown, prob < <i>t</i> in parentheses).						
*Significant at the 10% level.						
**Significant at the 5% level.						
***Significant at the 1% level						

Cumulative Abnormal Returns Following Management Change

As seen, there is a continued negative effect on management change ten days after the announcement. Next is to examine over what period the negative performance persists after the announcement. Exhibit 5 shows the analysis of CARs up to two years after the announcement of a management change.

Panel A of Exhibit 5 shows that the overall sample has a significant negative returns effect up to nine months past the announcement date. The level of significance increases from 5% to 10% from the six to nine month period. At three months after the announcement, a negative significant effect on performance by announcements/appointments and forced departures occurs at the 10% level. The negative significant effect between announcements/appointments and performance remains after six months.

It is expected that, since poor performance signals a management change, positive performance with the new management would eventually follow. Surprisingly, the

Exhibit 5 | Long-Term Performance Around Management Change

	All Changes	AnnApp	Board	Hire	Officer	Resign
Panel A: CAR from three months prior to two years after management change, taken at three months, six months, one year, eighteen months, and two years after the event (NYSE/AMEX/NASDAQ equal-weighted returns as benchmark).						
[-65, +65]	-2.785 -2.205**	-3.172 -1.932*	-2.935 -1.317	-0.659 -0.227	-1.229 -0.779	-5.149 -1.935*
[-65, +130]	-3.851 -2.257**	-4.581 -2.021**	-3.829 -1.184	-1.385 -0.391	-2.154 -1.055	-5.294 -1.452
[-65, +260]	-1.387 -0.465	-0.678 -0.162	0.088 0.014	-1.031 -0.195	-0.116 -0.041	-5.427 -1.149
[-65, +390]	1.289 0.391	0.751 0.169	1.037 0.180	4.365 0.636	4.443 1.121	-1.101 -0.190
[-65, +520]	8.458 1.739*	8.761 1.304	8.840 1.077	12.088 1.239	11.080 1.903*	2.445 0.363
Panel B: CAR from three months prior to two years after management change (REIT equal-weighted returns as benchmark).						
[-65, +65]	-5.056 -4.386***	-5.401 -3.601***	-5.308 -2.682***	-4.770 -1.856*	-4.175 -3.360***	-5.132 -1.914*
[-65, +130]	-6.640 -4.644***	-7.310 -3.742***	-7.050 -2.615***	-6.054 -1.891*	-6.318 -4.310***	-5.747 -1.691*
[-65, +260]	-7.654 -3.512***	-6.993 -2.320**	-7.083 -1.658*	-10.440 -2.549**	-7.677 -3.993***	-7.534 -1.938*
[-65, +390]	-9.408 -4.482	-9.595 -3.425***	-10.070 -2.691***	-11.402 -2.681***	-7.859 -3.440***	-6.456 -1.468
[-65, +520]	-9.107 3.805***	9.308 -2.923***	-10.382 -2.518**	-12.671 -2.735***	-7.031 -2.601**	-3.628 0.676
Panel C: CAR from one day to two years after management change (in percent), taken at three months, six months, one year, eighteen months, and two years after the event (NYSE/AMEX/NASDAQ equal-weighted returns as benchmark).						
[+1, +65]	-1.162 -1.536	-2.163 -2.235**	-1.130 -0.826	0.688 0.438	-1.125 -1.363	-0.714 -0.381
[+1, +130]	-2.924 -2.357**	-4.371 -2.592**	-3.054 -1.341	-0.489 -0.231	-2.528 -1.854*	-1.569 -0.568
[+1, +260]	-1.785 -0.775	-1.883 -0.584	-1.014 -0.220	-1.841 -0.499	-1.398 -0.653	-1.785 -0.436
[+1, +390]	0.574 0.213	-0.818 -0.230	0.500 0.105	2.969 0.552	2.207 0.714	2.784 0.502
[+1, +520]	6.875 1.736*	6.345 1.178	0.075 1.091	9.377 1.175	7.976 1.764*	6.296 0.965

Exhibit 5 | (continued)

Long-Term Performance Around Management Change

	All Changes	AnnApp	Board	Hire	Officer	Resign
Panel D: CAR from one day to two years after management change (REIT equal-weighted returns as benchmark).						
[+1, +65]	-2.053 -2.825***	-2.163 -2.235**	-1.130 -0.826	0.688 0.438	-1.125 -1.363	-0.714 -0.381
[+1, +130]	-4.433 -3.889**	-4.371 2.592**	-3.054 -1.341	-0.489 -0.231	-2.528 -1.854*	-1.569 -0.568
[+1, +260]	-6.095 -3.415***	-5.916 -2.358**	-5.650 -1.595	-8.338 -2.940***	-6.580 -4.247***	-4.545 -1.336
[+1, +390]	-7.822 -4.273***	-8.374 -3.337***	-8.113 -2.418**	-9.500 -3.009***	-7.057 -3.717***	3.397 -0.888
[+1, +520]	-7.073 -2.923***	-7.164 -2.091**	-8.433 -2.216**	-11.132 -3.227***	-5.419 -1.821*	-0.761 -0.161
<p>Note: Cumulative abnormal return (CAR) performance (in percent) through two years on event windows around management change announcements of REITs from 1984 to 2002 (mean returns shown).</p> <p>*Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.</p>						

expected positive relationship between performance and management change does not occur until two years after the management change. Other than the overall sample, only announcements involving officers show significance at the 10% level. When the REIT composite equal-weighted returns is introduced (Panel B of Exhibit 5), the negative effect of returns is present even two years after the announcement.

In order to determine how much post-announcement performance affects the pre-to-post announcement window, Panel C of Exhibit 5 shows results of CARs only after announcement. Significant results do not occur until six months after the announcement and remain at nine months after the announcement; the overall sample and announcements/appointments are significant and negative at the 5% level. At fifteen months, positive results can begin to be seen with outside hires and officer changes, although they are not significant. Negative effects, although not significant, still exist with announcements/appointments at eighteen months after announcement. At two years after the announcement of a management change, a positive and significant effect appears in the overall sample and officer changes.

Panel D of Exhibit 5 shows results using the REIT composite equal-weighted returns. The negative effects of performance on changes persist throughout the two-year post-event period.

Predicting Management Change Based on Performance

Probit and logit analysis are used to determine if performance levels can predict management changes. The dependent variable is one if a change occurs, zero otherwise. The independent variables are based on the difference between firm returns and market returns for a period of three years prior (*diff3yr*), two years prior (*diff2yr*), one year prior (*diff1yr*) and the day of the event (*diff00*). Analysis is also performed at nine months prior (*diff09*), six months prior (*diff06*) and three months prior to the event (*diff03*). The expectation is that, as performance relative to the market decreases, the probability of predicting a management change increases.

Results of the probit and logit regressions are given in Exhibit 6. Logit regressions are used in a manner consistent with McIntosh et al. (1994). Probit regressions

Exhibit 6 | Predictability of Management Change

Variable	Coefficient	Std. Error	t-Stat.	prob < t
Panel A: Logit Analysis				
Intercept	-5.087	0.063	81.036***	0.000
<i>Diff3yr</i>	2.982	2.540	1.174	0.240
<i>Diff2yr</i>	-2.680	3.976	-0.647	0.500
<i>Diff1yr</i>	-0.956	3.080	-0.310	0.756
<i>Diff00</i>	-1.267	3.582	-0.354	0.724
Panel B: Probit Analysis				
Intercept	-5.087	0.022	-113.511***	0.000
<i>Diff3yr</i>	2.982	0.951	1.123	0.261
<i>Diff2yr</i>	-2.680	1.406	-0.667	0.505
<i>Diff1yr</i>	-0.956	1.089	-0.301	0.764
<i>Diff00</i>	-0.455	1.267	-0.359	0.719
Notes: Analysis of the probability of a management change, based on the difference between firm and market returns. Periods measured were three, two, and one year prior to the management change.				
*Significant at the 10% level.				
**Significant at the 5% level.				
***Significant at the 1% level.				

are used assuming that returns generally are normally distributed. The results show the expected sign on all the return coefficients except the one at three years prior. However, there is no statistical significance.

Conclusions

Management's effects on REIT performance cannot be directly observed. Stock returns provide a source for this information. This study analyzed 420 management changes affecting 158 REITs from 1984 to 2002. The purpose was to determine if negative performance, measured by abnormal returns and cumulative abnormal returns, leads to a management change. The effects of performance are measured over several categories: announcements/appointments, hires (including elections to board) and forced departures (resignations). Performance is also measured in relation to changes in board structure and officer structure. The results show that, at a period of one year prior to the management change, negative performance is significant across the entire sample and the five aforementioned categories. When performance is measured up to ten days after the change announcement, it shows an increased effect. At ten days prior to changes, the level of significance decreases. This suggests that the effects of the proposed change have already been accounted for. The one-year pre-event window shows that negative performance has the most significant effects on board structure and forced resignations; it has little to no effect on hires and officer changes. The use of a REIT composite equal-weighted return, instead of the NYSE/AMEX/NASDAQ composite equal-weighted return, produces a larger negative performance effect.

Examining the long-term effects of management changes, a persistent negative effect up to nine months after the change announcement was found. Surprisingly, expected positive effects after announcement of a management change do not occur at a significant level until two years after the announcement. When a REIT composite equal-weighted return is used, a positive effect does not occur at all.

The ability of negative performance to predict management changes was examined. No significant effects were found.

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G. Stacy Sirmans, Florida State University, Tallahassee, FL 32306-1110 or ssirman@cob.fsu.edu.

H. Swint Friday, Texas A&M University–Corpus Christi, Corpus Christi, TX 78412 or sfriday@cob.tamucc.edu.

Russell M. Price, Florida State University, Tallahassee, FL 32306-1110 or rmp02g@fsu.edu.