

REIT Price-to-Net Asset Value, Performance, and Managerial Entrenchment

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This study examines P/NAV dynamics in the REIT industry, utilizing NAV estimates from SNL Financial and stock returns and distributions from CRSP. The findings reveal that REITs typically trade at a premium to their NAVs around IPOs, transitioning to a discount approximately 30 months later. The analysis also shows a positive association between P/NAV and future excess NAV returns, consistent with Chay and Trzcinka (1999). Furthermore, the results suggest high past excess stock returns indicate managerial ability, creating market expectations reflected in premiums. However, when controlling cross-sectional correlation, this relationship loses statistical significance. Additional findings indicate that REITs with positive excess NAV returns, longer public trading histories, or CEO replacements are likelier to trade at a premium to NAV. In contrast, those led by older CEOs, CEOs with longer tenures, or recent outside appointments tend to trade at a discount. Although the negative relationship between CEO tenure and P/NAV is not statistically significant, it supports Berk and Stanton's (2007) assertion that entrenched CEOs contribute to NAV discounts.

Keyword: REITs, NAV, premium, discount

INTRODUCTION

I investigate price-to-net asset value or Price-to-NAV (P/NAV) dynamics in the REIT Industry. REITs are similar to closed-end funds, but they have to meet certain requirements to avoid taxation at the corporate level. Although the closed-end fund P/NAV has been studied extensively, there are not many studies on REIT P/NAV because assets owned by REITs do not have readily available market prices to compute NAVs. In my analysis I use analysts' NAV estimates available from SNL Financial, and stock returns and distributions from CRSP.

Berk and Stanton (2007) suggest that managerial ability and labor contract can explain many observed characteristics of closed-end fund discounts. Managerial ability is not easy to measure and would not show up in the stock market return, but it can be detected in NAV returns. According to Lee, Schleifer, and Thaler (1990) managerial ability can explain discounts if investors expect managerial performance to decline over time. Berk and Stanton (2007) argue that investors would have poor performance expectations if managers became entrenched over time due to low turnover. If some managers demonstrate superior ability, then they eventually get pay raises for their performance. Other managers who do not demonstrate superior ability are not fired and maintain their compensation. Investors' poor performance expectations are justified due to managerial entrenchment.

The managerial turnover evidence shows that closed-end fund and REIT managers are rarely fired, therefore, closed-end funds and REITs are likely to be dominated by entrenched managers. For example,

McIntosh, Rogers, Sirmans (1994) report that there are 53 forced managerial replacements by 55 REITs over 21 years and that proxy battles are uncommon. Even though I do not search for forced managerial replacements, I observe in my dataset that CEO replacements are not very common and in cases where there are CEO replacements, most are appointed internally.

Berk and Stanton (2007) suggest that managers initially receive compensation less than the value they add for the shareholders, leading to premiums at the time of IPOs. Berk and Stanton (2007) also suggest that the excess NAV returns should be related to a manager's tenure. Managers with long tenure are more likely to be entrenched and they receive compensation in excess of the value they create for the shareholders.

In order to examine the REIT discounts, I use analysts' NAV estimates available from SNL Financial and stock returns and distributions from CRSP. My NAV data set contains NAV estimates since 2001. I use these NAV estimates together with closing stock prices from CRSP to compute P/NAV. I investigate how the P/NAV evolves after Initial Public Offerings (IPOs) as well as the effects of past P/NAV and managerial tenure on future excess NAV returns. I compute NAV returns following the methodology of Chay and Trzcinka (1999). However, since NAVs are derived from analyst estimates, SNL Financial does not provide daily NAV data. To address this, I assume that the NAV remains unchanged between the reporting dates provided by SNL Financial, using the most recent estimate as a constant value until the next update. The Jensen's alpha uses the Fama French Four Factor Model to measure the excess returns.

The study finds that REITs typically trade at a premium to their NAVs around the time of their IPOs, but this premium transitions to a discount approximately 30 months later. This result aligns with the closed-end fund literature and the predictions of Berk and Stanton (2007). Additionally, the analysis shows that P/NAV is positively correlated with future excess NAV returns, consistent with the findings of Chay and Trzcinka (1999). According to Chay and Trzcinka, discounts and premiums in closed-end funds reflect the market's expectations of managers' future performance. Funds trading at high premiums tend to achieve high excess NAV returns, whereas those with steep discounts often experience poor excess NAV returns in the subsequent year. They attribute the underperformance of high-discount funds to the market's adjustment for anticipated weak managerial performance.

Berk and Stanton (2007) propose that high past excess stock returns signal managerial ability, leading to elevated market expectations and a corresponding premium. Findings support this proposition, as full sample results indicate a positive relationship between past excess stock returns and P/NAV. However, this effect is not statistically significant when controlling for cross-sectional correlation using the Fama and MacBeth (1973) procedure.

Furthermore, results suggest that REITs with positive excess NAV returns, longer public trading histories, and instances of CEO replacement tend to trade at a premium to NAV. Conversely, REITs led by older CEOs, those with longer tenures, or those appointed from outside the organization are likelier to trade at a discount to NAV. Importantly, past excess NAV returns emerge as the only variable consistently exhibiting statistical significance, regardless of the testing method.

While the relationship between CEO tenure and P/NAV lacks statistical significance, the observed negative correlation aligns with Berk and Stanton's (2007) assertion that longer-tenured CEOs are more likely to become entrenched. This finding underscores the potential impact of managerial characteristics on REIT valuation dynamics.

The paper is organized as follows: I review the relevant literature in Section 2 and discuss data and methodology in Section 3. Section 4 reports results and Section 5 concludes the paper.

LITERATURE REVIEW

Earlier studies by Gyourko and Keim (1992) and Barkham and Geltner (1995) explore the relationship between returns on appraisal-based indices and securitized real estate, concluding that securitized real estate returns can predict those of appraisal-based indices. Capozza and Lee (1996) provide the first empirical evidence on REIT P/NAV discounts and premiums, analyzing a sample of 75 REITs from 1985 to 1992. Using a methodology similar to income capitalization, they apply a property-weighted cap rate to the net

operating income of REITs. Their findings reveal that REITs typically trade at an 8% discount to NAV, with smaller REITs experiencing more significant discounts due to their higher expense ratios.

Barkham and Ward (1999) investigate the P/NAV discounts observed in U.K. property companies, proposing two potential explanations: a rational perspective based on agency costs, taxes, and firm-specific factors, and a behavioral perspective involving noise traders limited by arbitrage constraints. Their findings support both hypotheses in explaining P/NAV discounts. Building on this, Clayton and MacKinnon (2000) interpret earlier evidence from Gyourko and Keim (1992) and Barkham and Geltner (1995) to suggest that price discovery in securitized markets drives adjustments in P/NAV, which are more likely attributed to changes in NAV rather than market price. Clayton and MacKinnon (2000) also explore the role of noise trading, where uninformed investors contribute to P/NAV premiums and discounts. Due to limits to arbitrage, informed investors cannot fully eliminate these discrepancies. They further find that the convergence of price and NAV increases trading costs for REITs, as market makers demand compensation for the risk of trading with better informed investors. This suggests that noise trading by uninformed investors drives the divergence between prices and NAVs. Their findings strongly support the noise trading explanation of REIT P/NAV dynamics. Later, Clayton and MacKinnon (2002) expand this framework, identifying three key factors influencing P/NAV premiums and discounts: growth opportunities, REIT liquidity, and investor sentiment. Their results confirm that both liquidity and sentiment play significant roles in explaining these P/NAV variations.

Liow (2003) examines the relationship between prices and NAVs in Singapore using a sample of 16 property companies over 15 years (1985–1999). The findings indicate that while NAV has some explanatory power for property company stock valuations, the relationship is weak. Gentry, Jones, and Mayer (2004) investigate the connection between REIT stock prices and NAVs using Green Street NAV estimates from 1990 to 2003. They construct REIT portfolios based on P/NAV quartiles and demonstrate that a strategy of buying REITs in the lowest P/NAV quartile (trading at a discount) and selling those in the highest P/NAV quartile (trading at a premium) yields an abnormal return of 1.7% per month. Gentry et al. (2004) rule out liquidity, leverage, insider ownership, and investor sentiment as potential drivers of this abnormal return. Liow and Li (2006) analyze P/NAV characteristics in a sample of 248 real estate companies across Hong Kong, Singapore, Japan, Malaysia, Indonesia, Thailand, Australia, and the Philippines from 1995 to 2003. Their study finds that real estate companies in these markets generally trade at discounts to their fundamental values and that P/NAV tends to exhibit mean reversion. Furthermore, they report that NAVs help explain volatility in the stock market returns of real estate companies.

Patel, Pereira, and Zavodov (2009) examine the REIT P/NAV mean-reversion in the UK using a data set from 1989 to 2008. They show that P/NAV discounts in the UK revert to its long-term mean value. More interestingly, Patel et al (2009) find that persistence in P/NAV discounts is due to quick adjustments in public market valuations versus slow adjustments in private market valuations of REITs. This conclusion of Patel et al (2009) is consistent with earlier evidence on price discovery in real estate markets as reported by Gyourko and Keim (1992) and Barkham and Geltner (1995).

Closed-end fund discounts have been a focal point of extensive research in finance literature. Typically, these funds trade at a discount to their net asset values (NAVs). While closed-end funds often debut at a premium to NAV, this premium usually transitions to a discount over time. The literature identifies two primary explanations for this phenomenon: rational and irrational.

Rational explanations attribute the discount to factors such as taxation of gains on fund holdings, management costs, and liquidity constraints. On the other hand, De Long, Shleifer, Summers, and Waldmann (1990) propose an irrational explanation centered on investor sentiment. According to their theory, investor sentiment drives prices away from NAVs, and rational investors cannot fully correct this mispricing due to limits to arbitrage. These limits include the finite investment horizons of rational investors and the unpredictability of sentiment-driven behavior. As a result, the risks associated with arbitrage allow deviations from NAV to persist in the market.

More recently, Berk and Stanton (2007) proposed a rational explanation for closed-end fund premiums and discounts, centered on managerial ability and compensation structures. They argue that managerial ability, coupled with the terms of labor contracts, accounts for many observed patterns in closed-end fund

discounts. Specifically, managers tend to receive compensation below the value they contribute to shareholders during the initial stages of a fund, which often results in premiums at the time of IPOs.

Lee, Schleifer, and Thaler (1990) propose that managerial ability can influence discounts if investors anticipate a decline in managerial performance over time. Similarly, Merton (1980) highlights the need for large datasets to establish that one manager consistently outperforms another. Berk and Stanton (2007) argue that even if such data exists, managers often capture the majority of the benefits generated by their abilities. They further suggest that managerial ability, while not reflected in stock returns, can be detected in NAV returns. Over time, entrenched managers—those who remain in their roles despite underperformance—tend to diminish investors' expectations, leading to discounts. Managers who demonstrate superior ability eventually receive pay raises, while those who do not perform are rarely dismissed and continue to receive compensation.

Chay and Trzcinka (1999) find that discounts and premiums in closed-end funds reflect market expectations of managers' future performance. Funds with high premiums typically deliver strong excess NAV returns, while those with steep discounts experience poor excess NAV returns the following year. They attribute this underperformance to the market adjusting for anticipated weak managerial outcomes. Additionally, current discounts often correlate with past returns, reinforcing this expectation.

Evidence from McIntosh, Rogers, and Sirmans (1994) supports the notion of managerial entrenchment in closed-end funds and REITs. Over a 21-year period, their study identified only 53 forced managerial replacements among 55 REITs, and proxy battles were notably rare. This lack of turnover further suggests that entrenched management often dominates these entities, contributing to sustained NAV discounts.

Berk and Stanton (2007) propose that a manager's tenure influences excess NAV returns. Managers with longer tenures are more likely to become entrenched, leading to compensation that exceeds the shareholder value they generate. Conversely, newly appointed managers are less likely to exhibit entrenchment and are more likely to demonstrate their ability through higher excess NAV returns. This distinction underscores the potential impact of managerial tenure on the performance dynamics of NAV returns.

In light of the previous discussion, I formulate the following testable hypotheses:

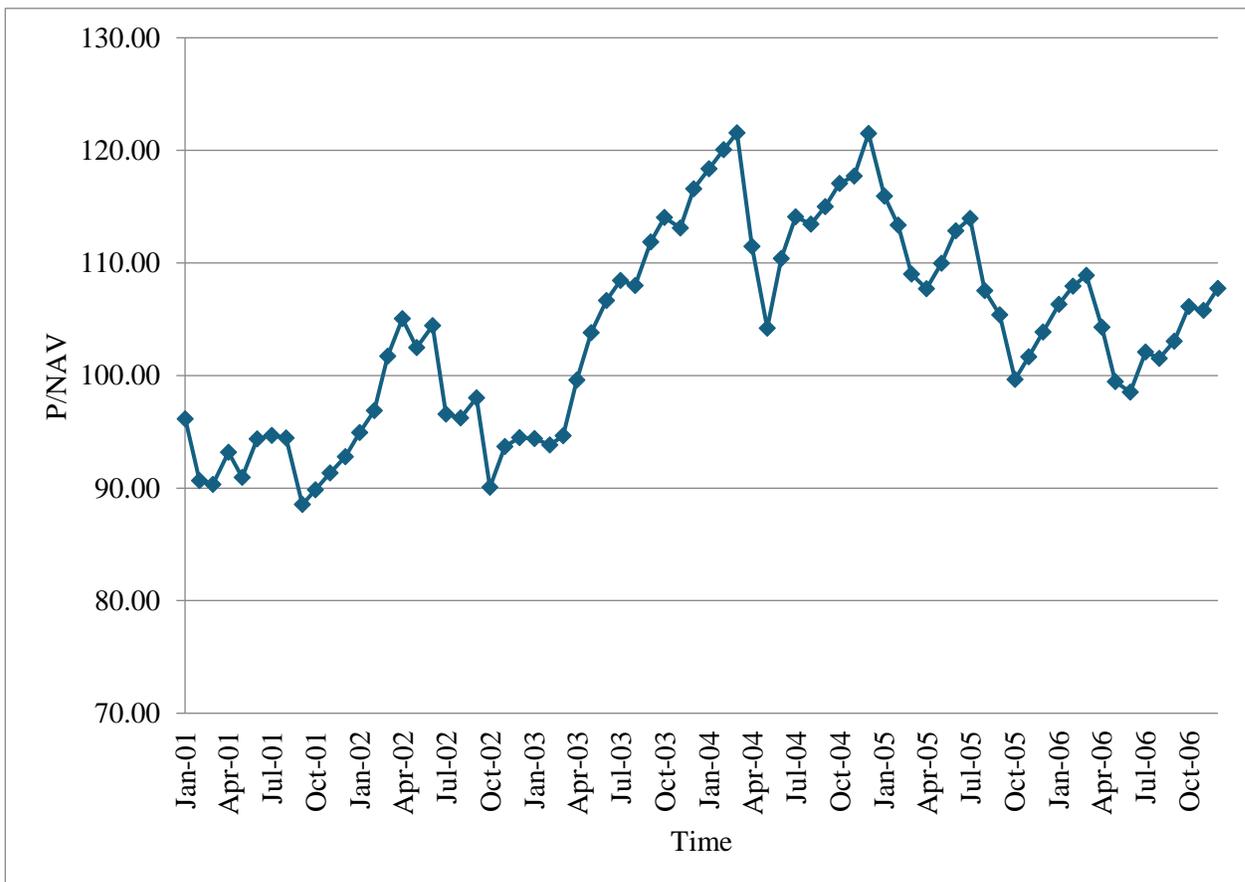
1. **REITs trade at par to their NAVs around IPOs.** This hypothesis is grounded in the no-arbitrage condition, which suggests that initial valuations align with intrinsic value. However, Berk and Stanton (2007) propose that managers initially receive compensation below the value they add to shareholders, leading to premiums shortly after IPOs.
2. **The current premium or discount has no predictive power for future excess NAV returns.** This hypothesis examines whether market expectations about managerial ability, reflected in current premiums or discounts, influence future performance. Berk and Stanton (2007) and Chay and Trzcinka (1999) argue that premiums capture positive expectations, while discounts indicate anticipated underperformance.
3. **Past excess stock returns are not related to the current premium or discount.** This hypothesis tests whether historical stock performance signals managerial ability. Berk and Stanton (2007) suggest that strong past excess returns create higher market expectations, reflected as premiums in current P/NAV ratios.
4. **CEO tenure has no effect on excess NAV returns.** This hypothesis investigates whether the length of a CEO's tenure correlates with future NAV performance. Berk and Stanton (2007) argue that longer-tenured CEOs are more likely to be entrenched, receiving compensation exceeding the value they generate, which could negatively affect NAV performance.
5. **New managers have no effect on excess NAV returns.** This hypothesis evaluates whether newly appointed managers influence NAV performance. According to Berk and Stanton (2007), new managers are less likely to be entrenched and may demonstrate greater ability, potentially resulting in positive excess NAV returns.

DATA AND METHODOLOGY

Data

To examine REIT discounts, I utilize analysts' NAV estimates provided by SNL Financial, along with stock returns and distribution data from CRSP. The NAV dataset includes 7,907 estimates spanning January 2001 to December 2006, covering 161 REITs. Additionally, I gather CEO-specific information—such as age, initial hire date, and date of appointment as CEO—from SEC filings. This comprehensive data enables a detailed analysis of the relationship between REIT discounts and managerial characteristics.

FIGURE 1
REIT P/NAV, JANUARY 2001 - DECEMBER 2006



The P/NAV premium or discount is calculated using $(P/NAV) - 1$. A positive value indicates a premium, meaning the market price exceeds the NAV, while a negative value reflects a discount, where the market price is less than the NAV. Figure 1 illustrates the historical trends in REIT P/NAV from January 2001 to December 2006, showing an average premium of 3.95%. REITs traded at a premium throughout most of the study period, except for the months before May 2003. From January 2001 to April 2003, the average discount was 4.84%. Panel A of Table 1 provides additional insights into P/NAV variations across property types and two distinct sub-periods: (1) January 2001 to April 2003 and (2) May 2003 to December 2006. Notably, Hotel REITs were the only property category to consistently trade at discounts to NAVs, averaging around 6%. By contrast, all REIT categories traded at premiums during the second sub-period, reflecting a shift in market valuation trends.

The average ages of REITs and CEOs are 54 years and 12 years, respectively, with an average CEO tenure of slightly more than six years. Previous studies have noted that CEO replacements are relatively uncommon in the REIT industry. Panel B of Table 1 provides data on annual CEO turnover rates and the proportion of CEOs hired externally. However, the analysis does not distinguish whether the incumbent CEOs left their positions voluntarily or involuntarily.

TABLE 1
DESCRIPTIVE STATISTICS

Panel A. REIT P/NAV Trends						
Property Focus	P/NAV (%)			Average Number of REITs per month		
	January 2001 - December 2006	January 2001 - April 2003	May 2003 - December 2006	January 2001 - December 2006	January 2001 - April 2003	May 2003 - December 2006
Diversified	106.75	98.11	112.25	23	15	29
Health Care	109.98	100.28	115.71	24	10	33
Hotel	94.01	80.68	101.59	46	23	58
Industrial	108.66	98.25	114.81	42	32	47
Manufactured Homes	100.21	95.23	102.92	12	11	12
Multi-Family	104.40	96.53	109.41	73	49	88
Office	100.98	88.41	108.69	101	68	121
Regional Mall	105.79	96.78	111.32	45	32	53
Retail: Other	109.71	104.38	112.49	16	11	19
Self-Storage	110.21	98.33	117.24	17	10	21
Shopping Center	107.97	104.39	110.08	58	34	73
Specialty	109.62	104.66	112.56	17	6	23
Unavailable	101.61	96.20	104.80	44	20	58

Panel B. New CEOs			
Year	New CEOs	New Outside CEOs	
2001	5	2	
2002	7	2	
2003	7	4	
2004	12	3	
2005	14	4	
2006	10	2	

The NAV estimates and property focus data for the REITs analyzed in this study are obtained from SNL Financial. The dataset includes 7,907 NAV estimates for 161 REITs, spanning January 2001 to December 2006. This extensive timeframe offers a robust basis for examining P/NAV dynamics across a diverse array of property-focused REITs. To facilitate detailed analysis, the sample period is divided into two sub-periods: (1) January 2001 to April 2003 and (2) May 2003 to December 2006. Additionally, data on new CEOs, including their appointment and tenure, are sourced from SEC filings to provide insights into the potential influence of managerial changes on P/NAV behavior.

Methodology

I compute NAV returns in the same way as Chay and Trzcinka (1999), however, because NAVs are based on analysts' estimates, there are trading days where there are no updated NAV estimates. To address this limitation, I assume that the NAV remains constant between the reporting dates provided by SNL Financial, using the most recent estimate until the next update is available.

$$R_{i,t}^S = \ln(P_{i,t} + DIV_{i,t}) - \ln(P_{i,t-1}) \quad (1)$$

$$R_{i,t}^N = \ln(NAV_{i,t} + DIV_{i,t}) - \ln(NAV_{i,t-1}) \quad (2)$$

where, $R_{i,t}^S$ and $R_{i,t}^N$ are the stock market and NAV returns for REIT i , respectively. $NAV_{i,t}$ is the net asset value per share reported by SNL Financial, $P_{i,t}$ is the price per share in the market, and $DIV_{i,t}$ is the dividend payment at time t for REIT i .

I calculate excess stock market and NAV returns using the Fama-French Four-Factor Model, which incorporates market, size, book-to-market, and momentum factors. The first three factors were introduced by Fama and French (1992, 1993), with the momentum factor later added by Carhart (1997). This comprehensive model provides a robust framework for assessing excess returns. The model is implemented through the following regression:

$$R_{i,t}^N - R_{ft} = \alpha_i^N + \beta_i RMRF_t + s_i SMB_t + h_i HML + m_i WML_t + e_{i,t}, \quad (3)$$

where R_{ft} is the risk-free rate of return, $RMRF_t$ is the excess return on the value-weighted market portfolio over the risk-free return, SMB_t is the return difference between portfolios of small and big company stocks, HML_t is the return difference between portfolios of high and low book-to-market stocks, and WML_t is the momentum factor of Carhart (1997) that is the return differential between portfolios of winners and losers over the last twelve months.¹ The α_i^N is the average monthly excess NAV return of REIT i . I estimate the regression shown in equation (3) for each calendar year in the same manner as Chay and Trzcinka (1999). The regression (3) is also estimated for stock market returns to get α_i^S .

The relationship between P/NAV and excess NAV returns is examined using the following regression for the entire sample period and annually:

$$\alpha_{i,t}^N = a_0 + a_1(P/NAV)_{i,t-1} + e_{i,t}, \quad (4)$$

where the α_i^N is the average monthly excess NAV return of REIT i . The $(P/NAV)_{i,t-1}$ is the P/NAV at the end of the previous year for firm i . I also use the $(P/NAV)_{i,t-2}$ and $(P/NAV)_{i,t-3}$ to examine the effects P/NAV on future excess NAV returns. To address potential cross-sectional correlation, I apply the Fama and MacBeth (1973) procedure to assess the statistical significance of coefficients derived from annual regressions. This method provides robust standard errors by accounting for the possibility that observations across entities may correlate within a given period.

The relationship between past excess stock returns and P/NAV by employing a regression analysis conducted over the entire sample period as well as on an annual basis. This approach allows for a comprehensive evaluation of how historical stock performance influences P/NAV dynamics, both in aggregate and within specific time frames. The regression equation used in this analysis is structured as follows:

$$(P/NAV)_{i,t} = a_0 + a_1(\alpha_{i,t-1}^S) + e_{i,t}, \quad (5)$$

where the $\alpha_{i,t-1}^S$ is the average monthly excess stock return of REIT I during the previous year for firm i . I also analyze excess stock returns over two- and three-year intervals to capture longer-term effects. To account for potential cross-sectional correlation, I assess the statistical significance of the coefficients obtained from annual regressions using the Fama and MacBeth (1973) procedure.

To analyze the impact of managerial entrenchment on P/NAV, I employ regression models incorporating variables such as CEO tenure, new CEO appointments, and external CEO hires to account for different aspects of managerial entrenchment. The regression takes the following form:

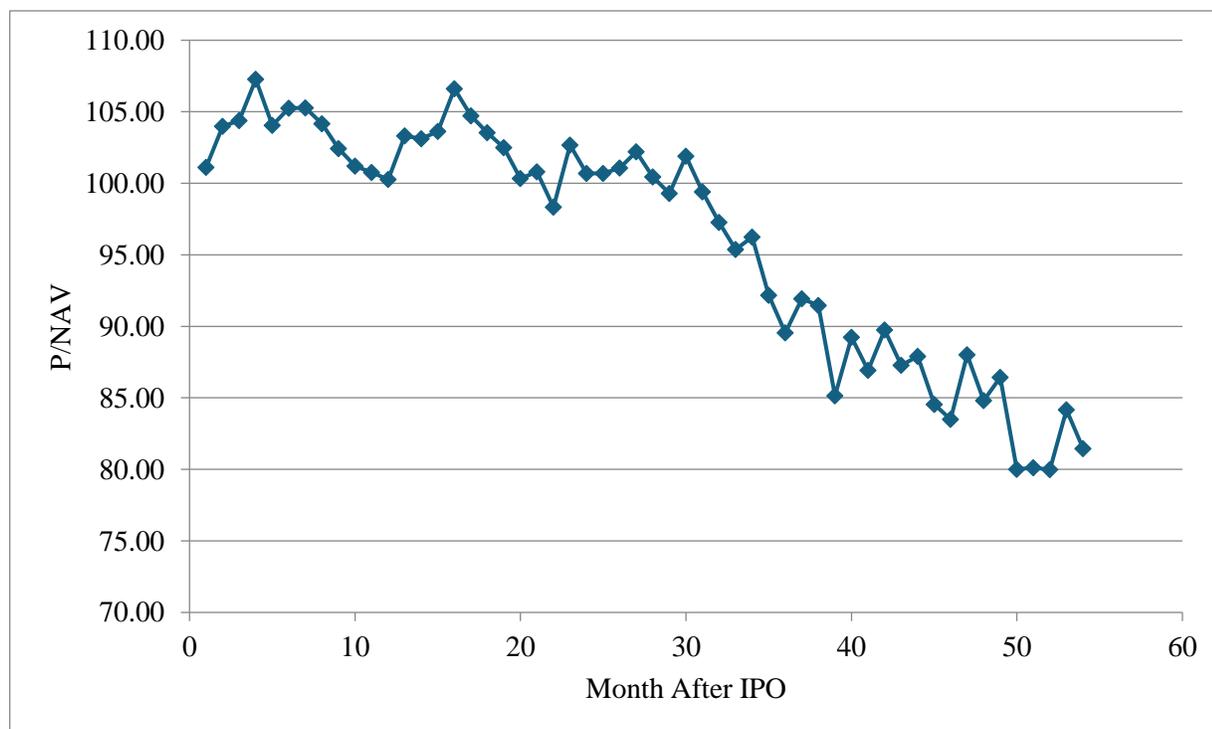
$$\alpha_{i,N} = f(\text{lag1}(\alpha_i^N), \text{CEOA}, \text{REITA}, \text{CEOTENURE}, \text{NEWCEO}, \text{OUTSIDECEO}) \quad (6)$$

The α_i^N and $lag1(\alpha_i^N)$ are the excess NAV return, and excess NAV return at first lag, respectively. *CEOA* refers to the age of a CEO, *REITA* is the age of a REIT since its IPO, and *CEOTENURE* is the number of years a CEO held that position. *NEWCEO* and *OUTSIDECEO* are dummy variables. *NEWCEO* is set to 1 if a new CEO is appointed and *OUTSIDECEO* is set to 1 when the new CEO was not employed by the REIT previously. I expect $lag1(\alpha_i^N)$ to be positively related to α_i^N . I expect *NEWCEO* and *OUTSIDECEO* to have a positive relationship with excess NAV returns. This expectation aligns with Berk and Stanton's (2007) argument that new and externally appointed CEOs are less likely to be entrenched and, therefore, less likely to receive compensation exceeding the value they contribute. In contrast, *REITA*, *CEOA*, and *CEOTENURE* are expected to negatively impact excess NAV returns. *REITA* accounts for the established relationship between REIT age and P/NAV discounts, as illustrated in Figure 2. *CEOA* is anticipated to negatively influence P/NAV due to the higher likelihood of managerial entrenchment associated with older CEOs. Similarly, Berk and Stanton (2007) suggest that longer CEO tenure correlates with increased entrenchment, which may result in diminished excess NAV returns.

RESULTS

Figure 2 illustrates the P/NAV trajectory for REITs following their IPOs. Initially, REITs exhibit a maximum premium of 7.3%. However, the P/NAV transitions to a discount in 30 months after their IPOs and reaches a substantial discount of 20% by the 50th month. This pattern contrasts with Weiss's (1989) findings on closed-end funds, which report that initial premiums turn into discounts within just four months. Conversely, Cherkas, Sagi, and Stanton (2008) observe a longer duration before premiums transition to discounts in closed-end funds, aligning more closely with the behavior seen in REITs.

FIGURE 2
P/NAV After IPO



Berk and Stanton's (2007) model, which incorporates managerial ability and compensation contracts, predicts an extended period during which new closed-end funds trade at premiums. According to their

framework, early premiums reflect lower compensation paid to managers relative to the value they add to shareholders. Over time, however, managers become entrenched, and their excess compensation drives P/NAV into discount territory. The observed P/NAV trends in REITs are consistent with Berk and Stanton's (2007) predictions, supporting the notion that managerial entrenchment plays a key role in the decline from premium to discount.

The results of testing the effects of P/NAV on excess NAV returns are presented in Table 2. Both Berk and Stanton (2007) and Chay and Trzcinka (1999) suggest that current premiums or discounts reflect the market's expectations of a manager's ability to add value, with discounts signaling poor expected performance. Consistent with Chay and Trzcinka (1999), I find that the current P/NAV is positively associated with excess NAV returns one year into the future. Moreover, this relationship extends to excess returns up to two years ahead.

TABLE 2
P/NAV PREMIUM/DISCOUNT AND EXCESS RETURNS

Panel A. Cross-sectional Regressions				
	Dependent Variable: Excess NAV Returns		Dependent Variable: Excess Stock Market Returns	
(P/NAV) _{t-1}	0.0388	***	-0.0078	*
	10.51		-1.79	
(P/NAV) _{t-2}	0.0243	***	-0.0080	
	5.50		-1.63	
(P/NAV) _{t-3}	0.0122	**	0.0006	
	2.53		0.12	
Panel B. Fama and MacBeth (1979) Procedure				
	Dependent Variable: Excess NAV Returns		Dependent Variable: Excess Stock Market Returns	
(P/NAV) _{t-1}	0.0384	**	-0.0101	
	4.43		-0.78	
(P/NAV) _{t-2}	0.0197	*	-0.0188	*
	2.37		-3.08	
(P/NAV) _{t-3}	0.0124	*	-0.0114	
	3.08		-2.65	

The relationship between P/NAV and excess NAV returns is examined using the following regression for the entire sample period and annually:

$$\alpha_{i,t}^N = a_0 + a_1(P/NAV)_{i,t-1} + e_{i,t}, \quad (4)$$

where the α_i^N is the average monthly excess NAV return of REIT i . The $(P/NAV)_{i,t-1}$ is the P/NAV at the end of the previous year for firm i . I also use the $(P/NAV)_{i,t-2}$ and $(P/NAV)_{i,t-3}$ to examine the effects P/NAV on future excess NAV returns. Due to possible cross-sectional correlation, I use Fama and MacBeth (1973) procedure when assessing statistical significance using coefficients from annual regressions. The Panel A reports the results of entire sample period and Panel B shows results based on annual regressions.

*** Significant at 1 percent level.

** Significant at 5 percent level.

* Significant at 10 percent level.

According to Chay and Trzcinka, closed-end fund discounts and premiums capture market expectations of managerial performance, where funds with high premiums tend to deliver strong excess NAV returns. In contrast, those with higher discounts exhibit poor excess NAV returns in subsequent years. They attribute the underperformance of high-discount funds to compensation adjustments for anticipated weak managerial

performance. For comparison, I also examine excess stock market returns and find no significant association between P/NAV and stock returns.

Table 3 presents the relationship between excess stock returns and current P/NAV. Berk and Stanton (2007) propose that strong past excess stock returns indicate managerial ability, which raises market expectations and leads to a premium on P/NAV. My analysis of the full sample supports this hypothesis, showing a positive relationship between past excess stock returns and P/NAV. However, after accounting for cross-sectional correlation using the Fama and MacBeth (1973) procedure, the effect is no longer statistically significant, suggesting that the observed relationship may not be robust across different subsets of data.

TABLE 3
PAST EXCESS RETURNS AND P/NAV PREMIUM/DISCOUNT

Panel A. Cross-sectional Regressions					
	Dependent Variable: P/NAV			Dependent Variable: P/NAV	
α^N_{t-1}	1.0351	**	α^S_{t-1}	2.7967	***
	2.19			5.55	
α^N_{t-2}	0.4922		α^S_{t-2}	1.4777	***
	1.15			3.21	
α^N_{t-3}	1.0642	**	α^S_{t-3}	0.1369	
	1.99			0.28	
Panel B. Fama and MacBeth (1979) Procedure					
	Dependent Variable: P/NAV			Dependent Variable: P/NAV	
α^N_{t-1}	2.9439		α^S_{t-1}	4.1686	
	1.01			1.68	
α^N_{t-2}	2.6921		α^S_{t-2}	1.7698	
	1.38			2.50	
α^N_{t-3}	2.5494		α^S_{t-3}	1.4426	
	1.28			1.13	

The relationship between past excess stock returns and P/NAV is examined using the following regression for the entire sample period and annually:

$$(P/NAV)_{i,t} = a_0 + a_1(\alpha^S_{i,t-1}) + e_{i,t}, \quad (5)$$

where the $\alpha^S_{i,t-1}$ is the average monthly excess stock return of REIT i during the previous year. I also use excess stock returns at two- and three-year intervals. Statistical significance of coefficients from annual regressions is assessed using Fama and MacBeth (1973) procedure due to possible cross-sectional correlation. The Panel A reports the results of entire sample period and Panel B shows results based on annual regressions.

*** Significant at 1 percent level.

** Significant at 5 percent level.

Table 4 presents the relationship between managerial entrenchment and P/NAV, analyzed through three regression models. The results confirm prior expectations regarding the signs of coefficients for variables such as *CEOA*, *NEWCEO*, and *CEOTENURE*. However, the signs for *REITA* and *OUTSIDECEO* deviate from expectations. Specifically, past excess NAV returns, *REITA*, and *NEWCEO* show a positive association with P/NAV, indicating that REITs with positive excess NAV returns, longer public trading histories, or recent CEO replacements are more likely to trade at a premium to NAV. Conversely, *CEOA*, *CEOTENURE*, and *OUTSIDECEO* are negatively associated with P/NAV, suggesting that REITs led by

older CEOs, those with longer tenures, or recently appointed external CEOs tend to trade at a discount to NAV.

TABLE 4
MANAGERIAL ENTRENCHMENT AND P/NAV

Panel A. Cross-sectional Regressions						
	Model 1		Model 2		Model 3	
Intercept	1.4469	**	1.3834	**	1.4468	**
	2.12		2.10		2.24	
$lag1(\alpha_i^N)$	0.0431	***	0.0439	***	0.0439	***
	10.34		10.67		10.71	
<i>CEOA</i>	-0.0073		-0.0072		-0.0076	
	-0.54		-0.55		-0.58	
<i>REITA</i>	0.0087		0.0079		0.0080	
	0.84		0.80		0.81	
<i>CEOTENURE</i>	-0.0260		-0.0149		-0.1900	
	-0.98		-0.59		-0.79	
<i>NEWCEO</i>	0.0555		0.2168			
	0.11		0.51			
<i>OUTSIDECEO</i>	-0.2206					
	-0.24					
Panel B. Fama and MacBeth (1979) Procedure						
$lag1(\alpha_i^N)$	0.0414	***	0.0431	***	0.0431	***
	5.34		4.63		4.82	
<i>CEOA</i>	-0.0106		-0.0097		-0.0048	
	-1.03		-0.72		-0.38	
<i>REITA</i>	0.0035		0.0043		0.0047	
	0.21		0.31		0.35	
<i>CEOTENURE</i>	-0.0231		-0.0100		-0.0180	
	-1.38		-0.67		-1.35	
<i>NEWCEO</i>	-0.1862		0.1910			
	-0.33		0.22			
<i>OUTSIDECEO</i>	-0.2031					
	-0.31					

I use regression models to examine the effects of managerial entrenchment on P/NAV. The regression is of the following form:

$$\alpha_{i,N} = f(lag1(\alpha_i^N), CEOA, REITA, CEOTENURE, NEWCEO, OUTSIDECEO) \quad (6)$$

The α_i^N and $lag1(\alpha_i^N)$ are the excess NAV return, and excess NAV return at first lag, respectively. *CEOA* refers to the age of a CEO, *REITA* is the age of a REIT since its IPO, and *CEOTENURE* is the number of years a CEO held that position. *NEWCEO* and *OUTSIDECEO* are dummy variables. *NEWCEO* is set to 1 if a new CEO is appointed and *OUTSIDECEO* is set to 1 when the new CEO was not employed by the REIT previously. The Panel A reports the results of entire sample period and Panel B shows results based on annual regressions.

*** Significant at 1 percent level.

** Significant at 5 percent level

Only past excess NAV returns among these variables show statistical significance across all testing methods. While the negative relationship between CEO tenure and P/NAV is not statistically significant, it aligns with Berk and Stanton's (2007) proposition that long-tenured CEOs are more likely to be entrenched, potentially impacting investor expectations and NAV premiums.

CONCLUSIONS

I examine P/NAV dynamics in the REIT industry using NAV estimates from analysts provided by SNL Financial and stock returns and distributions from CRSP. My findings indicate that REITs initially trade at a premium to their NAVs around their IPOs, but this premium transitions to a discount approximately 30 months later. This trend aligns with the closed-end fund literature and the predictions of Berk and Stanton (2007). Additionally, I find that P/NAV is positively correlated with future excess NAV returns, consistent with the findings of Chay and Trzcinka (1999). According to their study, premiums and discounts in closed-end funds reflect the market's expectations about managerial performance. Funds trading at high premiums tend to achieve high excess NAV returns, while those with significant discounts often experience poor excess NAV returns in subsequent years. Chay and Trzcinka attribute the underperformance of high-discount funds to the market's pricing in anticipated poor managerial performance.

Berk and Stanton (2007) further propose that high past excess stock returns signal managerial ability, creating market expectations that result in premiums. My full-sample results support this proposition, showing that past excess stock returns positively affect P/NAV. However, this effect becomes statistically insignificant when controlling for cross-sectional correlation using the Fama and MacBeth (1973) procedure. I also find that REITs with positive excess NAV returns, longer public trading histories, and CEO replacements are more likely to trade at premiums to NAV. In contrast, REITs with older CEOs, long-tenured managers, or recently appointed external CEOs are more likely to trade at discounts. While CEO tenure's negative relationship with P/NAV is not statistically significant, this observation supports Berk and Stanton's (2007) suggestion that long-tenured CEOs are more likely to be entrenched.

Although my results provide some evidence for Berk and Stanton's (2007) hypothesis that managerial entrenchment influences NAV premiums and discounts, they are not conclusive. Future research could enhance this analysis by exploring alternative measures of CEO entrenchment. If subsequent findings confirm these relationships, they would have important policy implications for REITs, particularly regarding the role of CEO turnover in mitigating P/NAV discounts.

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