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REIT Short Sales and Return Predictability

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Abstract

We examine REIT short sale transactions and show REITs are shorted less frequently than non-REITs. Results also show short sellers are less able to predict negative future returns for REITs, relative to non-REITs, which is consistent with increased pricing efficiency for REITs and suggests REIT assets are more transparent. In a broader context, these results suggest differences in transparency across asset types influence the effectiveness of short selling. Results showing REIT short sellers are contrarian imply traders target REITs that are performing well instead of underperforming REITs, suggesting restrictions on REIT short sales should be re-evaluated.



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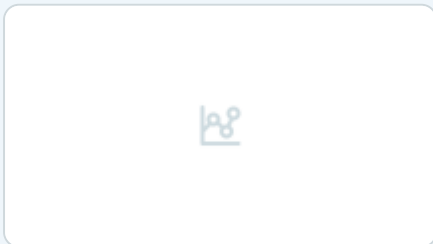
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Notes

1. D'Avolio ([2002](#)) and Diether et al. ([2009a](#)) argue that costs of short selling are relatively low, however, their samples exclude REITs.
2. Another reason for examining characteristics of REIT short selling activity is mentioned by Danielsen and Harrison ([2000](#)) who point out that investors cannot short real estate investments outside of the public market.

3. A REIT must meet four main provisions to maintain their tax-exempt status. First, five-or-fewer shareholders may not hold more than 50 percent of the REIT's stock. Second, at least 75 percent of the total assets of the REIT must consist of real estate, mortgages, cash, or federal government securities, and a minimum of 75 percent of the REIT's gross annual income must be derived from the ownership of real estate properties. Third, REITs must derive their income from passive sources such as rents and mortgage interest and not from the short-term trading or sale of property assets. Last, REITs must pay out a minimum of ninety percent of taxable income via dividends. Prior to 2001, the dividend requirement was 95 percent of taxable earnings.
4. Furthermore, Bradley et al. ([1998](#)), Feng et al. ([2007b](#)), Ghosh and Sirmans ([2006](#)), and Hardin and Hill ([2008](#)) discuss that REITs pay out greater dividends than is mandated, which further restricts REITs capital accumulation.
5. Specifically, the ten REITs consisted of three equity REITs and seven mortgage REITs (http://online.wsj.com/article/SB122222064893870011.html?mod=residential_real_estate).
6. The SHO data was made available January, 2005.
7. We require our sample of REITs to be traded at least half of the trading days. The restriction for common stocks to be traded every day is for matching purposes, so that we have stock data on every day the REITs are traded.
8. The SNL database provides financial and property data for U.S. REITs. The National Association of Real Estate Investment Trusts (NAREIT) website, www.reit.com, provides extensive information pertaining to the REIT industry.
9. Clark ([1973](#)) and Lamoureux and Lastrapes ([1990](#)) establish a theoretical relation between price volatility and information flow.

10. We contemplated matching REITs to non-REITs on dividend yield; however, Fama and French ([2001](#)) document that only 20 percent of stocks pay dividends. Thus, excluding non-dividend paying non-REITs would drastically weaken the strength of our match. We address the relation between dividends and short selling in footnote 15.
11. We exclude three hybrid REITs from our sample in order to focus on comparisons between equity and mortgage REITs.
12. We conduct statistical tests of variable differences used in our match. We find that price volatility and volume are statistically similar while the difference between the market capitalization for the two sample is marginally significant.
13. We also compare daily short volume and the short turnover, which is the daily short volume divided by the number of shares outstanding and find qualitatively similar results.
14. In untabulated results, we provide additional comparisons of short selling after partitioning the equity REIT sample into property focus categories. Results suggest little variation in short-selling activity across property focus. The differences-in-means tests indicate the reduced equity REIT short selling activity, relative to non-REITs, is driven by REITs with property focus classifications of *Retail*, *Industrial*, *Storage*, *Hotel*, and *Other*.
15. Regressions predicting short selling activity (Eqs. [2](#) and [3](#)) do not control for dividend yield. Data frequency issues preclude us from controlling for quarterly dividend yield when estimating daily short selling. Although we could use the quarterly dividend yield as a daily proxy, this variable would provide little cross-sectional variation needed to have explanatory power. This is likely why extant short selling research does not control for dividends

when predicting short selling activity. Despite these issues, we acknowledge the role dividend yield may play in REIT short selling. In footnote 20, we discuss untabulated results that examine short selling with respect to quarterly variables, including dividend yield.

16. Fixed effects estimates are inconsistent because the indicator variable REIT and discrete variable DAY do not vary across the times series. In addition, we control for clustering in errors across both the cross section and time series and find qualitatively similar results to the pooled OLS results.
17. Because the REIT dummy variable does not vary across the time series, fixed effects estimates are inconsistent. Therefore, we report both the random effects estimates and the pooled OLS estimates. We also estimate Eq. 2 using a censored regression model to control for the censoring of the dependent variable, which produces qualitatively similar results to the pooled OLS results.
18. We thank an anonymous referee for this suggestion.
19. In untabulated results, we examine the relation between property focus and short selling by including six additional dummy variables to control for property-type focus. These results show some evidence that *Hotel* and *Industrial* REITs are short sold significantly less than REITs classified as *Other*. Also, results provide limited support for REITs categorized as *Retail*, *Multi*, *Office*, and *Storage* are generally shorted more frequently than REITs with other property types. This evidence shows a significant variation in short-selling activity across property focus classification, suggesting substantial variation in information gathering ability across property type. It should be noted that the significance levels of the estimated property-type coefficients depend on econometric specification. Results are available upon request.

20. To gain a better understanding for other factors associated with REIT short selling we examine the relation between REIT short selling and certain variables that remain constant within quarters, including the dividend yield, debt ratio, book-to-market ratio, and the Gomper's Governance Index (unreported results). Specifically, we calculate the correlation coefficients between quarterly averaged REIT short selling and the quarterly values for the aforementioned variables. As expected, we find a negative correlation between short selling and the dividend yield for REITs. This negative correlation makes sense in that dividends increase the costs of short selling. Likewise, the negative correlation between the variables provides more support for the REIT-transparency argument. That is, increased dividends are expected to reduce informational asymmetries and increase the transparency of REITs, which, in turn, reduce traders' ability in gaining information needed to profitably short sell REITs. We find that REIT short selling relates positively to the debt-to-equity ratio but not the debt-to-assets ratio. Thus, we show some evidence of an association between debt, which increases riskiness of the firm, and short selling. We find that REIT short selling relates negatively to the book-to-market ratio, which suggests REIT short sellers may be more inclined to target growth stocks with increased volatility. Last, we find a positive but insignificant correlation (0.062 , $p = 0.152$) between REIT short selling and the Gomper's Governance Index, which is an inverse proxy for corporate governance. We are only able to obtain the index for 65 REITs, which affects our statistical power. We thank an anonymous reviewer for suggesting we examine these interesting issues.
21. We also use unadjusted CRSP raw returns and find qualitatively similar results that are consistent with our main conclusions.
22. Results are similar to those reported in Table [5](#) Panel A when we use two-way fixed effects regressions. Fixed-effects estimates are asymptotically consistent as independent variables vary across the time series and the cross section.

23. Because the REIT dummy variable does not vary across the time series, fixed effects estimates are inconsistent, so we report random effects and pooled OLS results.

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