

# **Real Earnings Management and Dividend Payout Signals: A Study for U.S. Real Estate Investment Trusts**

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# **Real Earnings Management and Dividend Payout Signals: A Study for U.S. Real Estate Investment Trusts**

## ABSTRACT

This paper examines how cash constrained U.S. Real Estate Investment Trusts (REITs) engage in real earnings management (REM) to mitigate the effects of dividend payout regulations. REITs are required by Federal law to distribute 90% of taxable income as dividends to common shareholders. Since REIT taxable income typically is not publicly reported, we use the dividend payout ratio based on FFO, a voluntary accounting measure commonly used by the REIT industry, as a surrogate for the unobserved dividend-to-taxable income ratio. By using the dividend-to-FFO ratio to identify REITs that may confront difficulties paying required dividends, we find that these firms are more likely to participate in REM activities by reducing revenue or increasing expenses; either activity would reduce taxable income. Further, REITs generating less cash flow from operations and having fewer opportunities to obtain funding from the general capital and debt markets are more likely to employ REM by selling fixed assets (even at a loss) to generate the necessary cash as well as to alter the dividend payment requirements. Overall, for REITs with limited available funding sources, our findings suggest REM is a viable strategy for managing regulatory dividend constraints.

# **Real Earnings Management and Dividend Payout Signals: A Study for U.S. Real Estate Investment Trusts**

## 1. INTRODUCTION

This paper examines how cash constrained U.S. Real Estate Investment Trusts (REITs) engage in real earnings management (REM) to mitigate the effects of dividend payout regulations. U.S. REITs are required by Federal law to distribute at least 90% of taxable income as dividends to common shareholders. If the REIT cannot meet its distribution requirement, it could be “De-REITed” and lose its tax-exempt status. An unplanned and unanticipated change from a REIT to a non-REIT corporation would be disruptive for management and investors. For example, when NovaStar declared it could not meet the dividend distribution requirement in 2007, thereby forfeiting its REIT status, its shares price plummeted by 18.7%.<sup>1</sup> Hence, for a REIT with a binding dividend constraint, we posit it is a first-order mission for the manager to satisfy the dividend requirements in order to maintain its REIT status. Some REIT companies with deficient operating cash flows to finance dividend payments may devise alternative methods for meeting dividend payout requirements such as REM.

### 1.A. REAL EARNINGS MANAGEMENT ACCOUNTING

In this paper, we examine if a REIT, subject to a binding cash dividend payment constraint, may reduce taxable income by employing real earnings management (REM). We define real earnings management as changes in the timing and structure of an operating, investing and finance activity to affect earnings (Gunny 2005, Roychowdhury 2006 and Zang 2007). A recent survey by Graham, Harvey and Rajgopal (2005) for more

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<sup>1</sup> Source: [www.seekingalpha.com](http://www.seekingalpha.com)

than 400 corporate executives suggests that 80% of firms would adjust real economic activities to affect performance. The common practices of real earnings management include: (i) acceleration of sales and/or price discounts to alter revenue; (ii) production changes; (iii) modifying the schedule of shipments, (iv) timing the sale of fixed assets to affect gains and losses; (v) the opportunistic reduction of research and development expenses. Though one may argue many real earnings management activities may undoubtedly affect a firm's cash flows as well, we propose there are three real earnings management activities that a REIT can employ to lower taxable income without impeding significantly the firm's cash flows: First, current U.S. tax laws require rental revenue to be recognized in the year it is accrued and allow the revenue to be straight-lined over the life of the lease. REITs can reduce (or, at the very least, not increase) income by delaying the negotiation of rental contract renewals (subject to a rent escalation clause) from the end of the current tax year to the beginning of the next tax year. Second, U.S. tax laws allow the deduction of expense obligations that are incurred in the current tax year, regardless of when the payment occurs. Hence, REIT can reduce taxable income by accelerating repair and maintenance actions to the current tax year.<sup>2</sup> Third, a firm can reduce simultaneously taxable income and generate additional cash flows by selling fixed assets at a loss. We hypothesize that a firm, confronting a binding dividend payment constraint, may engage in one or more of these real earnings management activities to lower taxable income in order to meet the 90% dividend requirement; and expect REITs with a low ex-post dividend-to-taxable income ratio (i.e., close to 90%) to have a higher

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<sup>2</sup> When firms delay the recognition of revenue, cash flows need not be affected as REITs can continue to collect prepaid rents from tenants. Similarly, when firms accelerate the reporting of expenses, managers can pay the expenses in subsequent periods without affecting current period cash flows.

ex-ante likelihood of real earnings management.<sup>3</sup>

## 1.B. RESEARCH STRATEGY

Taxable income establishes a REIT's dividend requirements. Unfortunately, Generally Accepted Accounting Principles (GAAP) do not require the disclosure of taxable income in financial statements.<sup>4</sup> In the REIT industry, firms typically disclose an alternative voluntary industry standard summary performance metric known as Funds from Operations (FFO). FFO was created by NAREIT in 1991 because GAAP financial measures were ineffective for capturing REIT performance. NAREIT has since clarified its definition in 1995, 1999 and 2002. To calculate FFO, real estate companies adjust net income by the amount of accounting depreciation and amortization gains and losses on the sale of real estate assets, and certain other unusual and infrequent specific accrual items (e.g., extraordinary items, early extinguishments of debt). Industry practitioners claim that the inclusion of these items, especially accounting depreciation, distorts the proper calibration of REIT net income.<sup>5</sup> Nonetheless, by excluding accounting depreciation (which can be substantially different from tax depreciation),<sup>6</sup> we believe

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<sup>3</sup> We recognize that there are other real earnings management activities that can affect taxable income without affecting cash flows of the company (e.g., stock option expenses). However, given the sheer size of rental income, property expenses and gains and losses from the disposal of real estate assets, we focus our analysis on these activities.

<sup>4</sup> However, some companies provide voluntary disclosures of the reconciliations of taxable income and net income. We analyze separately these firms for which taxable income information is publicly available in a subsequent section.

<sup>5</sup> The use of historical cost accounting in accordance with GAAP implicitly assumes the values of real estate assets diminish predictably over time through depreciation. However, real estate values have historically risen or fallen with market conditions. This creates a mismatch of revenues and expenses since the major income source for a REIT is rental income, which varies with market conditions.

<sup>6</sup> Many previous real estate studies substitute net income for taxable income to calculate dividend-to-taxable income ratio in determining whether a REIT has satisfied the 90% dividend payout requirement. In reality, there can be substantial differences between net income and taxable income. For example, in the reconciliation of taxable and net income presented in the 2006 annual report of AMB Property Corporation, the company reports net income of \$209.420 million and a taxable income of \$77.999 million. Their major book/tax difference emanates from depreciation. Given that managers are flexible in choosing different accounting policies to determine accounting depreciation but inflexible in determining tax depreciation that is governed by the Internal Revenue Services (IRS), depreciation expense can differ in large magnitude

FFO should be more highly correlated with taxable income than net income (i.e., the major difference between FFO and taxable income is tax depreciation which cannot be easily “manipulated”). Thus, we adopt dividend payout ratios (calculated based on FFO) as a proxy for the unobserved dividend-to-taxable income ratio.

Our empirical strategy is to analyze REITs subject to binding available cash dividend payment constraints to determine if they engage in real earnings management. We expect that REITs with low ratios to be more likely to employ real earnings management to alter taxable income. The incentives of cash constrained REITs to engage in real earnings management may impinge upon the company’s free cash flow. Thus the decision to use REM to satisfy dividend regulatory constraints should also depend on current funds available internally as well as externally (equity and debt financing). Finally, to ensure the dividend-to-FFO ratio is an appropriate surrogate for evaluating dividend constraints and REM, we create additional analyses, using hand-collected data for a small sub-sample of firms for which a reconciliation of net income, FFO and taxable income is provided in the financial statements.

### 1.C. RESEARCH CONTRIBUTION

This paper makes three research contributions. First, our study presents novel evidence of a pattern for REITs reducing income through real earnings management, motivated by dividend regulation. To our knowledge, this is the first paper to establish the inter-connections among real earnings management, dividend payout policy, and induced income reductions. While prior accounting and finance research documents earnings management via the “manipulation” of accruals, real earnings management has received

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under financial reporting and tax reporting. Moreover, there can also be book/tax differences on items such as stock option expense, straight-line rent, prepaid rent, and debt premium amortization.

little attention until recently (e.g., Roychowdhury 2006). Typically, companies engage in earnings management to increase income, the contexts in which firms are motivated to reduce income through earnings management are limited; and few studies examine dividend-based earnings management.

Second, our analysis adds to the growing support for the relative merits of reporting FFO versus net income. We show that the dividend-to-FFO ratio serves as a better signal for detecting real earnings management activities than dividend-to-net income. The results imply that FFO can serve as a proxy for the unobserved taxable income. Our findings suggest that for REITs FFO may contain more useful information than GAAP-required net income. While the previous analyses generally use income tax expense and an assumed marginal corporate tax rate to retrace the unobserved taxable income, for tax-exempt REITs where income tax expense is nil, we are able to approximate taxable income by utilizing voluntary FFO information from financial statements.

Finally, our study raises concerns about the use of net income in lieu of taxable income in real estate studies to determine if a firm satisfies its dividend payout requirement. We demonstrate that the dividend-to-net income ratio is not likely to be the best proxy for the dividend-to-taxable income ratio. Instead, dividend payouts calculated using the voluntary FFO measure, though still not a perfect substitute for the dividend-to-taxable income ratio, act as a better surrogate for identifying firms subject to a binding dividend payment constraint.

## 2. THE REIT INDUSTRY

REITs were created in the U.S. by Congress in 1960 allowing small investors to invest in real properties. A REIT is essentially a closed-end corporate fund that owns, and manages a pool of income-producing properties or mortgage products or both. The REIT industry enjoyed significant growth over the past decade. By 2008 there were a total of approximately 159 publicly-traded REIT's, of which 136 are equity REIT's, 20 are mortgage REIT's and 3 are hybrids (NAREIT). The major difference between an equity REIT and mortgage REIT is that former invests in real properties, while the latter invests in a pool of mortgage obligations or structured products..

To increase the attractiveness of investing in REITs, Congress elected to waive the Federal corporate income tax. At the same time, REITs must follow a unique set of rules governing the operation, organizational structure, dividend and financial policies:

- Distribute a minimum of 90% of its annual taxable income as dividends<sup>7</sup>.
- Earn no less than 75% of its gross income from real estate related investments.
- Invest at least 95% of its assets in real estate, mortgages, REIT shares, government securities or cash.
- Derive no more than 30% of gross income from sale or disposition of the properties held for less than four years (other than property involuntarily converted or foreclosed).
- Must be an investor in real estate (in contrast with a real estate dealer-broker).
- Requires at least 100 shareholders and no fewer than five shareholders owning more than 50% of the shares.

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<sup>7</sup> Prior to REIT Modernization Act of 1999, REITs had to pay out 95% of their taxable income in dividends.

GAAP traditionally requires companies to report net income in financial statements. The REIT industry argued that net income does not accurately reflect profitability, and reports a supplemental measure, FFO. Since its introduction, FFO has become very popular; and is commonly reported by REITs as well as widely followed by REIT analysts (Downs and Güner 2006; Fortin and Tsang 2008). Prior research finds that investors use FFO in addition to net income (e.g., Field, Rangan, and Thiagarajan 1998; Vincent 1999; Graham and Knight 2000) in valuation.

REITs in general do not report taxable income, the key determinant for establishing the required dividend payout. NAREIT's "Best Financial Practices Disclosures" (National Policy Bulletin, 2001) recommends an annual reconciliation of GAAP net income and taxable income. These disclosures remain voluntary and the practice is not followed by many REITs. For our sample, only 28% of REITs choose to voluntarily report taxable income and to provide an annual reconciliation between taxable income and net income.

### 3. RELATED LITERATURE

There is sparse evidence about dividend-based earnings management. By examining 37 Finnish companies, Kasanen, Kinnunen, and Niskanen (1996) show that firms manage earnings to smooth dividend streams for large institutional owners with a strong preference for stable dividends. Kato, Kunimura and Yoshida (2001, 2002) suggest that Japanese banks manage earnings in order to maintain dividends without violating the regulatory limit of a maximum of 40% of net income. They also find that the magnitude of earnings management declined significantly when the Japanese government rescinded

the limit in 1992. In a recent study, Daniel, Denis and Naveen (2007) claim that firms are more likely to manage earnings when they might otherwise fall short of market expectations.

An increasing number of studies have focused upon real earnings or real activities management. Roychowdhury (2006) finds that managers “manipulate” real activities to avoid reporting annual losses, using techniques such as price discounts to increase immediate sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures to improve reported margins. According to Gunny (2005), real earnings management activities that increase reported income (such as reducing research and development (R&D) expenses) have significant negative impacts on future operating performance. Wang and D’Souza (2006), by examining the relationship between accrual earnings management and R&D investment choices, demonstrate that managers are more (less) likely to decrease R&D when accounting flexibility is low (high), and that managers prefer the use of accrual to real earnings management, given ample accounting flexibility. Cohen, Dey and Lys (2008) document a substantial increase in real earnings management after the passage of Sarbanes-Oxley Act (SOX), suggesting firms switch from accrual-based management to real earnings management. Cohen and Zarowin (2008) also show accrual-based management has decreased after SOX. Zang (2007) contends that accrual-based and real earnings management are substitutes; and managers switch from accrual to real earnings “manipulation” after lawsuit filings. Chen, Rees and Sivaramakrishnan (2008) claim that the equity premium for beating or meeting analysts’ earnings forecasts is reduced when firms engage in real earnings management.

Several studies in real estate finance have examined the relevance of a REIT’s

tax-exempt status and dividend policy. Gentry, Kemsley and Mayer (2003) show that investors assign a positive value to the REIT's tax-exempt status. Several researchers indicate that there are factors, other than legal requirements, that impact REIT dividend decisions. Ghosh and Sirmans (2006) show that dividend payouts are influenced by managerial performance, ownership as well as corporate governance. Bradley, Capozza and Seguin (1998) find that dividend payouts of REIT's are lower for firms with larger cash flow volatility. According to Li, Sun and Ong (2006), stock splits are a signal of future cash flows, and thereby dividends and splits are indeed information substitutes. Wang, Erickson and Gau (1993) show that management performance based on Returns-on-Assets (ROA) is significantly related to the dividend policy of the REIT. They also find that REIT's dividend announcements convey information about management's expectation of future earnings, and leads to positive abnormal returns. Examining U.K. property companies, Ooi (2001) finds that real estate companies smooth dividend payouts to minimize having to reduce future dividends, and dividend payout is a function of a firm's total assets and leverage.

Finally, our research focuses upon one of the key areas in empirical tax research, the coordination of tax and financial accounting in business decisions.<sup>8</sup> Taxable income of a corporation is a relevant valuation factor for investors, since the differences of tax and book income predict contemporaneous or future firm performance. For example, Hanlon (2003, 2005) states that investors interpret large positive book-tax differences as a "red flag" and such differences are related to lower persistence of future earnings. Lev and Nissim (2004) find that the tax-to-book income ratio predicts subsequent five-year

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<sup>8</sup> See Shackelford and Shevlin (2001) and Maydew (2001) for a detailed discussion.

earnings changes. Hanlon, Laplante and Shevlin (2006) and Heflin and Kross (2005) purport that book income has greater explanatory power for stock returns than taxable income, though both measures exhibit significant incremental explanatory power.

#### 4. DATA AND SAMPLE SELECTION

Our sample includes all U.S. REITs (SIC code 6798) for which data are available in Compustat Annual and the I/B/E/S detail file<sup>9</sup> databases for the period 2000-2005. The year 2000 is chosen as the starting point for our sample because the dividend distribution requirement was changed from 95% to 90% of taxable income in 1999. We removed non-equity REITs and those missing FFO. Our final sample contains 330 firm-year observations. Descriptive statistics for the sample are presented in Table 1. We find that, on average, FFO is higher than net income, not surprisingly because accounting depreciation is typically a large REIT accounting expense. The average dividend-to-net income ratio is also higher than the ratio with FFO because of the inclusion of accounting depreciation in net income. The standard deviation of the dividend-to-net income ratio is higher as well, indicating net income may be subject to manipulation, and/or noise.

#### 5. EMPIRICAL ANALYSIS

Our empirical strategy is to develop a set of multivariate statistical regressions analyses to explore the interrelationship between and among dividend payments,

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<sup>9</sup> We obtain the financial statement variables from Compustat Annual files. However, Funds from Operations (Compustat Data Item #110) are typically missing for almost all sample firms on Compustat. Hence, we obtain the FFO information on I/B/E/S detail files.

financial and accounting structure, and real earnings management. If the dividend-to-taxable income ratio were available, we would expect firms that were close to the binding 90% dividend payout constraint would be more susceptible to engage in real earnings management. Since taxable income is typically not disclosed, we use dividend-to-FFO ratio to proxy for dividend-to-taxable income ratio. We conjecture the observed dividend-to-FFO ratios are correlated with the unobserved dividend-to-taxable income ratios. We hypothesize that the lower the observed ratios, the more likely a firm has engaged in real earnings management to meet dividend distribution requirements.

#### 5. A. IDENTIFYING DIVIDEND-CONSTRAINED FIRMS

In order to recognize REITs that are more likely to engage in real earnings management to satisfy dividend payout regulatory constraints, we use dummy variables to identify the ‘suspect’ firm-years.<sup>10</sup> Given the ‘suspect’ firms are more likely to have a dividend-to-taxable income ratio barely meeting the 90% requirement, we assume that the distribution of dividend-to-FFO ratios for the ‘suspect’ firms is discontinuous and will cluster around the low ratio volumes. We set an arbitrary threshold for defining “suspect” REITs for ratios at or below the fifth percentile of the sample population; we assign a value of 1 for observations that are at or below the threshold (i.e., our ‘suspect’ firm years), zero otherwise.<sup>11</sup>

Table 2 reports the descriptive statistics for the divided sample of ‘suspect’ firm years and the ‘non-suspect’ firm years. The ‘suspect’ firm years declare substantially

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<sup>10</sup> We do not employ continuous variables because we expect only firms with binding dividend constraints would engage in real earnings management to alter taxable income.

<sup>11</sup> In subsequent analyses, we evaluate the effect of using different threshold values to estimate the implied threshold values on the ratios. We discuss the empirical results when we use different threshold values in a subsequent section.

lower dividends, which may imply these firms are experiencing difficulty for paying dividends. By construction, the ‘suspect’ firm years have much lower dividend-to-FFO ratios, Div/FFO (0.281 vs. 0.835). The ‘suspect’ firm years have higher revenue (REV), and higher costs for property operations. Moreover, the ‘suspect’ REITs are less likely to issue new debt ( $\Delta$ LEVERAGE). Simple t-statistics tests for the mean differences of other firm characteristics indicate the ‘suspect’ firms are statistically significantly different from the remainder of the sample in terms of their market-to-book ratios, volatility of cash flows from operations and trading volume.

#### 5. B. MEASURING REAL EARNINGS MANAGEMENT

Our analysis models three types of real earnings management: (i) delaying revenue recognition, (ii) accelerating the recognition of property operating costs, (iii) and timing the sales of fixed assets (at a loss to reduce their taxable income). While real earnings management could be achieved by changing other discretionary expenses such as research and development (R&D) or advertising expenditures, we choose to concentrate on the three types of real earnings management activities since these alternative real earnings “management tools” are usually not a large part of a REIT’s budget.

Following similar estimation methodologies as in Marquardt and Wiedman 2004, Gunny 2005, and Roychowdhury 2006, we express normal revenue as a linear function of revenue in the last period and changes in revenue in the last period. In this model, we assume revenue growth is constant at the rate of previous year’s growth:

$$REV_t = \alpha + \beta_1 REV_{t-1} + \beta_2 \Delta REV_{t-1} + \varepsilon \quad (1)$$

Using cross-sectional regressions across all firms and years, we estimate the abnormal revenue,  $ABREV_t$ , as the actual revenue minus normal revenue; the latter calculated using equation (1). To control for heteroskedasticity and size effect, all variables are deflated by the firm's lagged total assets  $TA_{t-1}$ .<sup>12</sup>

Since expenses should match corresponding revenue generation, we express normal COGS as a proportion of contemporaneous revenue:

$$COGS_t = \alpha + \beta_1 REV_t + \beta_2 D(REVDEC)_t + \beta_3 REV_t * D(REVDEC)_t + \varepsilon \quad (2)$$

Gunny (2005) claims that costs are “sticky.” We include a dummy variable  $D(REVDEC)_t$  for revenue decreases, and an interaction term for  $REV_t$  multiplied by the dummy variable. As before, the variables (except the dummy variable) are scaled by lagged total assets. Abnormal  $COGS_t$ ,  $ABCOGS_t$ , is equal to actual  $COGS_t$  minus normal  $COGS_t$  calculated using the estimated coefficients from the regression. Table 3 reports the parameter estimates for equations (1) and (2). Both equations have high explanatory powers as well as statistically significant coefficients.

Bartov (1993) and Beatty, Chamberlain and Magliolo (1995) show that tax considerations play a role in the timing of fixed asset sales, indicating firms may report a loss on the sale of fixed assets when taxable income is positive, and proceeds from asset sales are large exclusive of the loss. Managers may be tempted to report a loss on the sale of fixed assets, when the dividend constraint is binding. To capture this effect, we employ

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<sup>12</sup> We define real earnings management as the unexpected component from the regression, but the unexpected component could be the resultant of real earnings management as well as accrual management. To ensure that abnormal revenue and abnormal COGS caused by real earnings management and not of accrual manipulation, in subsequent analysis we include control variables that proxy for the flexibility for managers to exercise accrual management. We expect that for firms that have little flexibility to exercise accrual management, abnormal changes in revenue or COGS are more likely to be driven by changes in real activities that have an impact on taxable income.

$G/L_t$ , the accounting gain or loss for the sale of real estate assets scaled by lagged total assets.<sup>13</sup>

### 5. C. DIVIDEND CONSTRAINTS AND REAL EARNINGS MANAGEMENT

Our first hypothesis is:

***H1: Firms with binding dividend constraints are more likely to engage in real earnings management to lower taxable income such that the ex-post dividend-to-taxable income ratio can meet the 90% taxable income REIT distribution requirement.***

We test H1 by examining if firms subject to binding dividend constraints utilize real earnings management by cutting revenue, by accelerating COGS expenses or by selling fixed assets at a loss, equation (3):

$$DIVCON_{FFO,t} = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + CONTROLS_t + \varepsilon \quad (3)$$

The dependent variable,  $DIVCON_{FFO,t}$ , represents the logarithm of the odds-ratio from the dividend-constraint-binding firm-year observations, and is proxied by dividend-to-FFO indicator variables for firm-years that fall below the pre-established threshold.  $ABREV_t$ ,  $ABCOGS_t$ , and  $G/L_t$  represent the real earnings management variables. We include control variables that are important determinants of dividend payout:  $GROWTH_t$ , measured as the log change of total assets from time t-1 to t; and  $LEVERAGE_t$ , measured as total debt divided by total assets. We expect higher growth may entail lower dividend payout (i.e., positive relationship of  $GROWTH_t$  and  $DIVCON_{FFO,t}$ ) as firms have stronger

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<sup>13</sup> A caveat of using accounting gains and losses to measure G/L is that it is possible to have a taxable gain when a company has an accounting loss on the financial statements because REIT's typically calculate accounting depreciation using the straight-line method and tax depreciation generally requires the use of the MACRS methods.

funding needs for future expansion. Increased leverage signifies decreasing flexibility to raise capital through debt, and we expect a negative relationship with dividend payout. We also include  $MTB_t$ , market-to-book ratios as a control variable, and expect a negative relationship of  $MTB_t$  and dividend payout. Bradley, Capozza and Seguin (1998) suggest that REIT dividend payout is related to an agency cost incentive as managers pay out less dividend when the company's cash flow is more uncertain. We therefore include the volatility of the company's cash flows,  $\sigma CFO$ , (measured by the sample period standard deviation of a firm's cash flows from operations). We also control for  $VOLUME_t$ , log trading volume. We expect a positive relationship of  $VOLUME_t$  and dividend payout and thus a negative relationship of  $DIVCON_{FFO,t}$  and  $VOLUME_t$ .

Table 4 reports the Pearson correlation coefficients. We find that  $DIVCON_{FFO,t}$  is highly correlated with  $ABCOGSt$ , implying dividend-constrained firms are more likely to report larger-than-normal property operating expenses. Moreover,  $DIVCON_{FFO,t}$  is also highly correlated with  $GROWTHt$ .

Table 5 reports statistical results for the multivariate logit regressions estimation for equation (3), our principal regression specification. The first column reports regression results without the inclusion of control variables. We find that  $DIVCON_{FFO,t}$  is significantly related to  $ABREV_t$  and  $ABCOGS_t$  with the expected signs; firms with binding available cash dividend payment constraints are more likely to cut revenue or to increase property operating expenses. The coefficient for G/L has the correct sign, but is insignificant. The insignificance of G/L may reflect that selling fixed assets is an irreversible decision with termination of the earnings assets. Hence, if managers can achieve their goals of real earnings management through revenue and expenses, they may

view the disposing of fixed assets only as a last resort. The second column in Table 5 shows statistical results with the inclusion of control variables. Surprisingly, we find that none of the coefficients for the control variables are statistically significant. This suggests factors that affect dividend payout decisions when the dividend constraint is not binding may have little impact on dividend decisions for firms facing the possibility of failing the dividend requirement. Put differently, REITs confronting dividend payment constraints behave differently than non-constrained REITs. While the latter may be able to concentrate their efforts in managing dividends as a performance signaling vehicle (Brav, Graham, Harvey and Michaely 2005), cash dividend-constrained REITs view meeting dividend requirements as the important challenge.

Our estimation for abnormal revenue and abnormal COGS may contain real as well as accrual management activities. If abnormal revenue or abnormal COGS is driven by accrual management, our findings may contain spurious correlations. To address this concern, we control for a firm's ability to generate accruals using equation (4):

$$DIVCON_{FFO,t} = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 NOA_t + CONTROLS_t + \varepsilon \quad (4)$$

Barton and Simko (2002) show that a firm's net operating assets (NOA) are a good proxy for the firm's ability to engage in accrual management. We use  $NOA_t$  to control the impact of accrual earnings management. While we do not anticipate accrual management (as proxied by NOA) to be related to the 'suspect' firm years dividend constraints; we do expect, as before, a negative coefficient for  $\beta_1$  and  $\beta_3$ , and a positive coefficient for  $\beta_2$ .

Columns three and four of Table 5 report the logit regression findings for equation (4) with the inclusion of the NOA variables. We find that the coefficients for  $ABREV_t$

and  $ABCOGS_t$  remain significantly negative and positive, respectively, with or without the inclusion of other control variables. Overall, results with the inclusion of NOA suggest accruals management does not alter our findings. This implies the effects of  $ABREV_t$  and  $ABCOGS_t$  are robust, and dividend constrained REIT's are likely to engage in real earnings management rather than accrual earnings management.

In unreported results, we replicate our analysis using dividend-to-net income ratios to identify the dividend-constrained firms. However, we find that  $DIVCON_{NI,t}$  is not related to any of the real earnings management variables, which indicates that dividend-to-FFO ratios do serve as a better signal of dividend constraints. We also find that  $DIVCON_{NI,t}$  remains insignificantly related to any real earnings management variables when NOA is included in the regressions.

We perform a series of robustness tests. First, since the major source of REIT income is rental income, a REIT manager is more likely to manage revenue by changing rental operations than other non-operating revenue items. As a sensitivity check, we substitute rental income for REV in equation (1) and use abnormal rental income instead of abnormal revenue in equation (3). Our statistical findings are similar to those obtained earlier.<sup>14</sup>

Second, our findings may be dependent on arbitrary thresholds established for firms with dividend payout binding constraints. We therefore perform robustness checks by altering the thresholds to 10% instead of 5%. We find that both coefficients for the real earnings management variables (i.e.,  $\beta_1$  and  $\beta_2$ ) continue to have the correct signs and remain significant.

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<sup>14</sup> We find that  $ABCOGS_t$  remains highly significant at the 1% level, and  $ABREV_t$  calculated based on rental revenue is weakly significant at the 10% level.

Finally, since REITs in different property sectors may operate differently, we include dummy variables for REIT property types. We also conduct our analysis by eliminating outlier observations (i.e., for values of the dependent variable above and below the 1<sup>st</sup> and 99<sup>th</sup> percentiles). The results remain qualitatively similar.

#### 5. D. FINANCING OPTIONS AND REAL EARNINGS MANAGEMENT

Ceteris paribus, if a REIT has internal funding, there may be a lesser need to engage in real earnings management to modify required dividend payments. Similarly, if a REIT has the capability to raise additional funds through debt or equity it may be less likely to utilize REM to modify its required dividend payouts. This leads to our second hypothesis:

***H2: The likelihood for REITs to engage in real earnings management to meet dividend distributions is reduced when firms have existing available internal funding or the capacity to tap external funding.***

We use equations (5), (6), and (7) to investigate whether additional internal funding, incremental debt or capital financing lessens the dividend payout constraint and the need for firms to engage in real earnings management:

$$DIVCON_t = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 \Delta CFO_t + \beta_5 \Delta CFO_t * ABREV_t + \Delta CFO_t * ABCOGS_t + \beta_7 \Delta CFO_t * G/L_t + \varepsilon \quad (5)$$

$$DIVCON_t = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 \Delta SHARE_t + \beta_5 \Delta SHARE_t * ABREV_t + \beta_6 \Delta SHARE_t * ABCOGS_t + \beta_7 \Delta SHARE_t * G/L_t + \varepsilon \quad (6)$$

$$DIVCON_t = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 \Delta LEVERAGE_t + \beta_5 \Delta LEVERAGE_t * ABREV_t + \beta_6 \Delta LEVERAGE_t * ABCOGS_t + \beta_7 \Delta LEVERAGE_t * G/L_t + \varepsilon \quad (7)$$

$\Delta\text{CFO}_t$ , the contemporaneous change in cash flows from operations (CFO), scaled by lagged total assets, from time  $t-1$  to  $t$ , serves as a proxy for the availability of internal funding. If firms generate additional cash flows from operations in the current year, it is less likely their apparent dividend constraint will be, in fact, binding. We would expect a negative coefficient for  $\beta_4$  in equation (5). Available debt or equity financing capacity should lessen the need for real earnings management as well. We use the contemporaneous percentage change in shares outstanding,  $\Delta\text{SHARE}_t$ , to act as a surrogate for additional available equity capital funding capability. We use  $\Delta\text{LEVERAGE}_t$ , measured by the contemporaneous percentage change of total debt, to reflect additional debt financing capacity. We expect negative coefficients for  $\beta_4$  in equations (6) and (7) since firms with more debt or equity funds available are less likely to have a binding dividend constraint. We expect positive coefficients for the interaction terms in  $\beta_5$  and  $\beta_7$  and negative coefficients in  $\beta_6$ .

Table 6 reports the results for the logit regression specifications for equations (5), (6), and (7). In the first column (equation (5)), we examine the impact of additional internal funding  $\Delta\text{CFO}_t$  on the relation of real earnings management and  $\text{DIVCON}_{\text{FFO},t}$ . We find that our main results for  $\text{ABREV}_t$  and  $\text{ABCOGS}_t$  do not change after the inclusion of  $\Delta\text{CFO}_t$ . We also note that  $\Delta\text{CFO}_t$  is negative and significant, indicating firms with sufficient cash flows are less likely to have a binding dividend constraint. Interestingly, we find that the interaction term for  $\Delta\text{CFO}_t$  and  $\text{G/L}_t$  is positive and significant, implying firms suffering from temporary cash flow problems may sell fixed assets to raise cash to fulfill their dividend requirements, but would do so by selling assets at a loss to reduce taxable income. In table 6, columns two and three (equations (6)

and (7), respectively) report results for  $\Delta\text{SHARE}_t$  and  $\Delta\text{LEVERAGE}_t$  as the financing variables, respectively. We find that  $\text{ABCOGS}_t$  remains significant across all model specifications. Moreover, the interaction term for  $G/L_t$  and the financing variables are also positive and significant. Combining the results in Table 5, the findings suggest managers normally do not sell fixed assets at a loss in order to “manipulate” taxable income. However, when the companies are short of cash, managing revenue and expenses may not be sufficient to satisfy dividend payments, and managers will be forced to sell assets at a loss to generate the necessary cash flows.<sup>15</sup>

## 6. DISCUSSION

### 6. A. DIVIDEND-TO-FFO VS. DIVIDEND-TO-NI, WHICH ONE SERVES AS A BETTER SIGNAL?

Figures 1A & 1B contain the distributions of dividend-to-FFO and dividend-to-net income ratios. Though prior studies tend to use taxable and net income interchangeably, Figure 1B suggests that the unobserved dividend-to-taxable income ratio (which can never be less than 90%) can be substantially different from dividend-to-net income ratio. In unreported results, using the dividend-net income ratio to determine our threshold. We find the ‘suspect’ firm years pay almost the same dividends as the ‘non-suspect’ firm years; and firm’s for two sub-samples are not statistically distinguishable.

To verify that dividend-to-FFO ratio serves as a better measure for signaling the cash payout constrained firms, we hand collected taxable income. 92 firm-year taxable income observations, approximately 28% of the total sample, were found. Though the size of the

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<sup>15</sup> We also consider alternative funding sources that a REIT can utilize. A REIT may be able to generate additional temporary cash flows with a line of credit (Riddiough and Wu, 2007). In unreported results, we include additional control variables for the magnitude of line of credit. The results remain qualitatively unchanged. We obtain the line of credit information from the SNL REIT database.

hand-collected sample precludes regression analysis, the correlations between taxable income and FFO and net income is 0.884 and the correlation between net income and taxable income is 0.795. These correlations are statistically significantly different.

## 6. B. REAL EARNING MANAGEMENT VS. ACCRUAL EARNINGS MANAGEMENT

While there are extensive studies for accrual earnings management, real earnings management has received little attention. In the traditional finance and accounting literature, earnings management is referred to accruals earnings management, where flexibility in financial reporting is designed to mislead investors about the performance of the company (Healy and Whalen 1999). Real earnings management is changing the timing and structure of an operating, investing and finance transaction to affect earnings. That is, real earnings management is the deviation from normal operating practices and is motivated by the managers' desire to meet certain reporting thresholds or targets. We focus on real earnings management instead of accruals earnings management because the latter is usually achieved by choosing accounting policies, but does not affect (in most cases) taxable income.

## 7. CONCLUDING REMARKS

U.S. REITs are legally obligated to pay common share dividends equal to at least 90% of taxable income. REITs that readily meet the 90% dividend requirement are likely to devise payment policies that “signal” future performance, much like normal C-corporations. In contrast, firms constrained by the 90% requirement engage in real earnings management to ameliorate the impacts of the dividend tax regulations. Since a

REIT's taxable income is not provided typically as part of its publicly audited financial statement, we demonstrate that other publicly available accounting data can be utilized to infer the company's taxable income and related real earnings management. We further show that REIT real earnings management depends upon its alternative vehicles for financing the required dividend payouts; and firms generally engage in real earnings management when they face more limited external and internal funding opportunities.

Overall, this paper establishes strong evidence that REITs confronted with constrained capability for meeting their dividend payout requirements will employ real earnings management. This paper, in broader brush terms, suggests an avenue for monitoring and determining regulatory governance policies based upon reviewing publicly available accounting information. It also reinforces the justification for the usage of non-GAAP accounting measures, such as FFO, advocated by the REIT industry. Our analysis, hopefully, will spur additional research combining finance, accounting, and real estate economics, for evaluating REIT real earnings management behavior.

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Table 1: Descriptive Statistics of Firm Variables

Variable	N	Mean	Std Dev	Minimum	Maximum
FFO <sub>t</sub>	330	2.267	1.011	0.290	5.630
NI <sub>t</sub>	330	1.426	1.201	-4.179	8.141
Dividend <sub>t</sub>	330	1.708	0.866	0.053	8.571
Div/FFO <sub>t</sub>	330	0.808	0.687	0.027	11.642
Div/NI <sub>t</sub>	330	1.313	3.755	-46.778	19.310
REV <sub>t</sub>	330	0.193	0.091	0.109	1.035
REV <sub>t-1</sub>	330	0.163	0.057	0.056	0.486
ΔREV <sub>t</sub>	330	0.017	0.032	-0.135	0.243
D(REVDEC) <sub>t</sub>	330	0.164	0.371	0.000	1.000
COGS <sub>t</sub>	330	0.122	0.093	0.022	1.007
G/L <sub>t</sub>	330	0.003	0.010	-0.003	0.104
NOA <sub>t</sub>	295	0.007	0.019	0.000	0.303
GROWTH <sub>t</sub>	330	0.156	0.274	-0.184	2.453
LEV <sub>t</sub>	330	0.523	0.133	0.024	1.016
MTB <sub>t</sub>	330	0.685	0.313	0.178	2.187
σCFO	330	43.425	49.093	2.230	273.059
VOLUME <sub>t</sub>	330	3.652	0.976	0.643	6.232
ΔCFO <sub>t</sub>	330	0.009	0.031	-0.206	0.231
ΔSHARE <sub>t</sub>	321	0.085	0.122	-0.136	0.556
ΔLEVERAGE <sub>t</sub>	327	-0.002	0.095	-0.685	0.380

The table reports descriptive statistics of firm variables. The sample covers 330 firm-year observations for the period of 2000-2005. FFO, NI and Dividend report FFO, net income and dividend available to common shareholders (in millions). Div/FFO and Div/NI are dividend-to-FFO and dividend-to-net income ratios. REV, ΔREV, and D(REVDEC) are revenue, contemporaneous change in revenue, and an indicator variable when ΔREV is negative, scaled by lagged total assets. COGS are costs, (mainly property operating expenses) scaled by lagged total assets. G/L is the accounting gains or loss on the disposal of real estate assets, also scaled by lagged total assets. We define net operating assets, NOA, following Barton and Simko (2002). GROWTH is measured as the log change of a firm's total assets from time t-1 to t. LEV is leverage ratio measured by total liabilities divided by total assets. MTB is market-to-book ratio. σCFO is the volatility of cash flows from operations, measured by the standard deviations of cash flows operations for each firm over the sample period. VOLUME is log trading volume (in millions \$). ΔCFO, ΔSHARE and ΔLEVERAGE are the changes from time t-1 to t, in CFO (scaled by total assets), shares outstanding (percentage change) and total liabilities (percentage change), respectively.

Table 2: Descriptive Statistics of ‘Suspect’ Firms versus ‘Non-Suspect’ Firms

Variable	mean (suspect firm years)	mean (non-suspect firm years)	mean differences	t-test
FFO <sub>t</sub>	1.414	2.310	-0.896***	-3.604
NI <sub>t</sub>	0.057	1.496	-1.439***	-4.956
Dividend <sub>t</sub>	0.397	1.775	-1.378***	-6.771
Div/FFO <sub>t</sub>	0.281	0.835	-0.553***	-3.267
Div/NI <sub>t</sub>	-0.214	1.390	-1.604**	-1.713
REV <sub>t</sub>	0.296	0.188	0.108***	4.944
REV <sub>t-1</sub>	0.247	0.159	0.089***	6.655
ΔREV <sub>t</sub>	0.035	0.016	0.018**	2.278
D(REVDEC) <sub>t</sub>	0.125	0.166	-0.041	-0.438
COGS <sub>t</sub>	0.247	0.116	0.131***	5.903
G/L <sub>t</sub>	0.002	0.003	-0.001	-0.495
NOA <sub>t</sub>	0.008	0.007	0.001	0.148
GROWTH <sub>t</sub>	0.208	0.153	0.055	0.799
LEV <sub>t</sub>	0.503	0.524	-0.021	-0.631
MTB <sub>t</sub>	0.524	0.693	-0.169**	-2.163
σCFO	26.402	44.293	-17.891*	-1.460
VOLUME <sub>t</sub>	3.118	3.680	-0.562***	-2.315
ΔCFO <sub>t</sub>	0.001	0.010	-0.008	-1.074
ΔSHARE <sub>t</sub>	0.086	0.085	0.001	0.044
ΔLEVERAGE <sub>t</sub>	-0.084	0.002	-0.086***	-3.698

The sample period covers 2000-2005. Suspect firm years are observations that fall below the 5% threshold for Div/FFO. The t-test reports the t-statistics for the differences in means. The sample includes 330 observations with 16 suspect firm-years. The t-test reports the absolute t-statistics of an unmatched two-sample t-test for the mean differences. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% respectively.

Table 3: Model Parameters from Estimation Models

$$REV_t = \alpha + \beta_1 REV_{t-1} + \beta_2 \Delta REV_{t-1} + \varepsilon \quad (1)$$

$$COGS_t = \alpha + \beta_1 REV_t + \beta_2 D(REVDEC)_t + \beta_3 REV_t * D(REVDEC)_t + \varepsilon \quad (2)$$

Dependent Variable	REV <sub>t</sub>	COGS <sub>t</sub>
Intercept	-0.0450*** (0.014)	-0.032*** (0.004)
REV <sub>t-1</sub>	1.372*** (0.063)	
Δ REV <sub>t-1</sub>	0.970*** (0.176)	
REV <sub>t</sub>		0.749*** (0.013)
D(REVDEC) <sub>t</sub>		0.114*** (0.014)
REV <sub>t</sub> * D(REVDEC) <sub>t</sub>		-0.631*** (0.054)
N	515	569
R <sup>2</sup>	0.521	0.860

We estimate the regressions using Generalized Least Square (GLS) over the period of 2000 to 2005. Standard errors are in parentheses. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% respectively. We obtain ABREV<sub>t</sub> from the residuals of model (1) and ABCOGS<sub>t</sub> from the residuals of model (2).

Table 4: Pearson Correlations between Variables used in Regression Analysis

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
(a) DIVCON <sub>FFO</sub>	1	0.260***	0.001	0.307***	0.000	0.051	0.158***	-0.033	-0.071	-0.099*	-0.109*	-0.032	0.052	-0.050
(b) DIVCON <sub>NI</sub>		1	0.066	0.068	0.080	-0.069	0.110*	0.136**	0.003	0.051	0.092	-0.023	-0.032	0.020
(c) ABREV			1	0.065	0.053	0.076	0.325***	-0.024	-0.006	0.006	0.019	0.284***	0.225***	0.214***
(d) ABCOGS				1	-0.143**	-0.141**	0.124**	-0.004	-0.384***	-0.137	-0.032	-0.140**	0.026	0.206***
(e) G/L					1	-0.080	-0.077	-0.076	0.130	0.114	0.041	0.168***	-0.033	-0.201***
(f) NOA						1	0.280***	-0.141**	0.185	-0.349	-0.675***	0.217***	0.240***	-0.156***
(g) GROWTH							1	0.036	-0.048	0.006	-0.077	0.367***	0.597***	0.156***
(h) LEV								1	-0.304	-0.085	-0.035	-0.064	-0.090	0.173***
(i) MTB									1	-0.070	0.039	0.052	0.060	-0.153***
(j) $\sigma$ CFO										1	0.513***	-0.007	0.004	0.024
(k) VOLUME											1	-0.109**	-0.053	0.158***
(l) $\Delta$ CFO												1	0.360***	-0.225***
(m) $\Delta$ SHARE													1	-0.225***
(n) $\Delta$ LEVERAGE														1

The table provides Pearson correlations between variables used in the regressions. See Table 1 and Table 3 for variable definitions. \* 10% significance \*\* 5% significance \*\*\* 1% significance.

Table 5: Logit Regressions of Dividend-Constrained Firm Years on Real Earnings Management Activities

$$DIVCON_{FFO,t} = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + CONTROLS_t + \varepsilon \quad (3)$$

$$DIVCON_{FFO,t} = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 NOA_t + CONTROLS_t + \varepsilon \quad (4)$$

Specifications		(3)	(3)	(4)	(4)
Intercept	?	-3.619*** (0.381)	0.437 (2.174)	-3.563*** (0.414)	1.489 (2.354)
ABREV <sub>t</sub>	-	-6.024*** (2.293)	-6.313** (2.821)	-6.497** (2.568)	-5.448* (3.005)
ABCOGS <sub>t</sub>	+	26.757*** (5.774)	21.958*** (6.210)	27.187*** (6.104)	23.719*** (6.637)
G/L <sub>t</sub>	-	-20.156 (45.597)	0.373 (41.376)	-3.318 (45.196)	13.562 (45.503)
NOA <sub>t</sub>	?			6.216 (23.876)	-52.004 (51.952)
GROWTH <sub>t</sub>	+		0.523 (1.067)		1.359 (1.437)
LEV <sub>t</sub>	+		-2.969 (2.668)		-3.307 (2.702)
MTB <sub>t</sub>	+		-2.015 (1.489)		-2.248 (1.550)
σCFO <sub>t</sub>	+		-0.008 (0.012)		0.010 (0.013)
VOLUME	-		-0.324 (0.346)		-0.435 (0.401)
N		330	329	295	295
Log Likelihood		-51.917	-48.837	-49.632	-46.115

The table summarizes pooled regressions results over the sample period 2000-2005. Dependent variable is  $DIVCON_{FFO,t}$ . Standard errors are in parentheses. \* 10% significance, \*\* 5% significance, \*\*\* 1% significance for two-sided t tests. Variables are defined in Table 1 and Table 3.

Table 6: Logit Regressions of Dividend-Constrained Firm Years on Real Earnings Management Activities and Financing Activities

$$DIVCON_{FFO,t} = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 \Delta CFO_t + \beta_5 \Delta CFO_t * ABREV_t + \beta_6 \Delta CFO_t * ABCOGS_t + \beta_7 \Delta CFO_t * G/L_t + \varepsilon \quad (5)$$

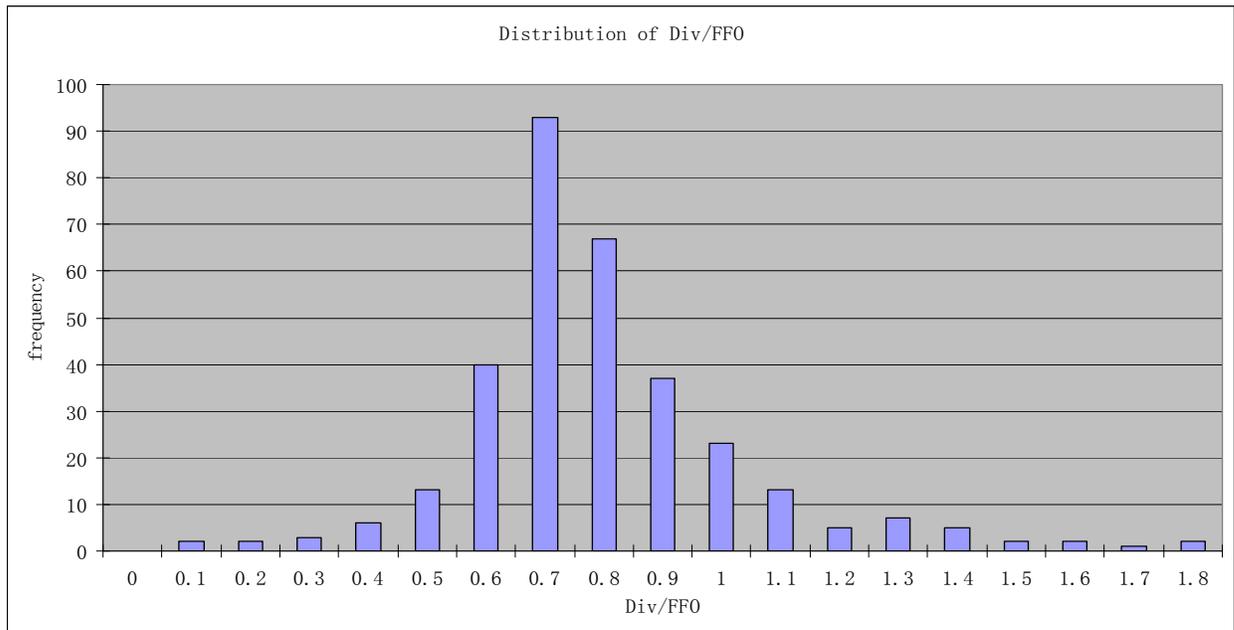
$$DIVCON_{FFO,t} = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 \Delta SHARE_t + \beta_5 \Delta SHARE_t * ABREV_t + \beta_6 \Delta SHARE_t * ABCOGS_t + \beta_7 \Delta SHARE_t * G/L_t + \varepsilon \quad (6)$$

$$DIVCON_{FFO,t} = \alpha + \beta_1 ABREV_t + \beta_2 ABCOGS_t + \beta_3 G/L_t + \beta_4 \Delta LEVERAGE_t + \beta_5 \Delta LEVERAGE_t * ABREV_t + \beta_6 \Delta LEVERAGE_t * ABCOGS_t + \beta_7 \Delta LEVERAGE_t * G/L_t + \varepsilon \quad (7)$$

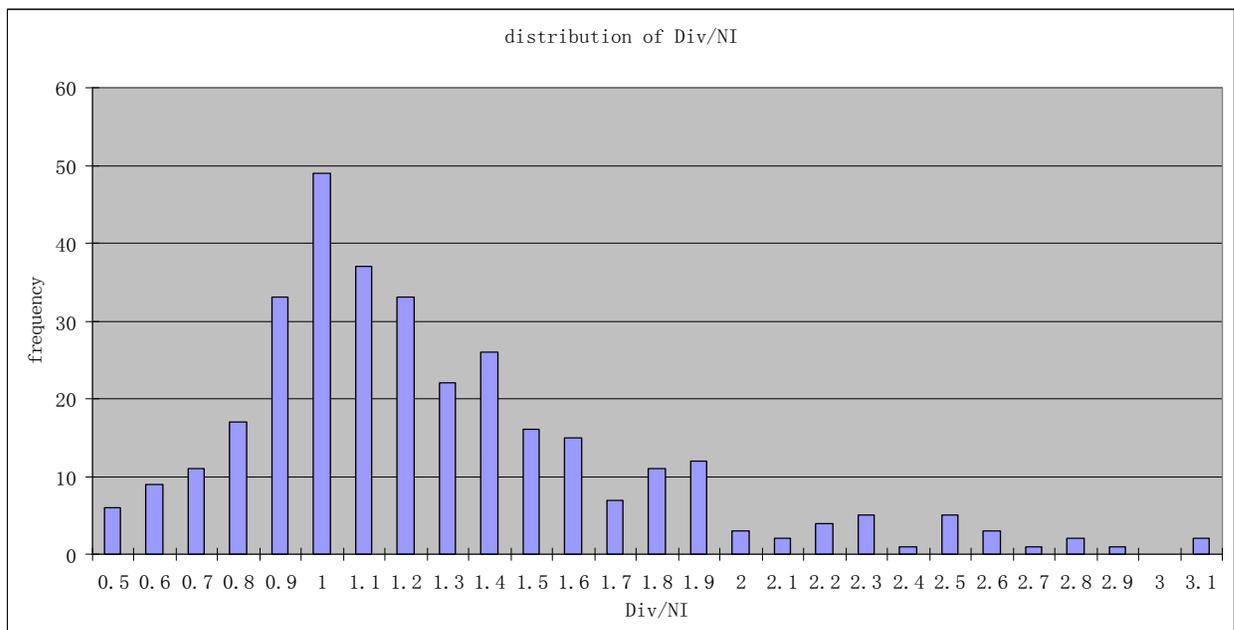
Specifications		(5)	(6)	(7)
Intercept	?	-3.690*** (0.422)	-3.385*** (0.513)	-3.431*** (0.462)
ABREV <sub>t</sub>	-	-6.106* (3.495)	0.050 (4.822)	-1.333 (4.595)
ABCOGS <sub>t</sub>	+	30.086*** (7.355)	31.389*** (9.679)	32.783*** (8.204)
G/L <sub>t</sub>	-	-17.390 (45.159)	-199.672 (177.900)	-181.506 (158.333)
FINANCE <sub>t</sub>	-	-29.251* (15.699)	-5.636 (5.641)	-1.469 (1.702)
FINANCE <sub>t</sub> *ABREV <sub>t</sub>	+	-109.904 (69.853)	-32.513 (37.914)	-2.287 (7.249)
FINANCE <sub>t</sub> *ABCOGS <sub>t</sub>	-	328.681 (230.092)	11.814 (87.372)	1.936 (21.280)
FINANCE <sub>t</sub> *G/L <sub>t</sub>	+	1233.543** (583.964)	1106.948* (581.371)	282.252* (170.722)
FINANCE Variables		ΔCFO	ΔSHARE	ΔLEVERAGE
N		330	321	327
Log Likelihood		-48.472	-42.143	-45.910

The table summarizes pooled regressions results over the sample period 2000-2005. Dependent variable is  $DIVCON_{FFO,t}$ . Standard errors are in parentheses. \* 10% significance, \*\* 5% significance, \*\*\* 1% significance for two-sided t tests. FINANCE represents ΔCFO in (5), ΔSHARE in (6) and ΔLEVERAGE in (7). See Table 1 and Table 3 for variable definitions.

**Figure 1A: Distribution of Div/FFO**



**Figure 1B: Distribution of Div/NI**



Figures 1A & 1B show the distribution of the Div/FFO ratios and the Div/NI ratios respectively. The y-axis shows the frequency of distribution and the X-axis plots the magnitudes of the ratios in 0.1 intervals.