Real Earnings Management, Liquidity and REITs SEO dynamics

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JEL Classification: G14, G23, G32, M41

Keywords: Real Estate Investment Trust, Seasoned equity offerings, Liquidity, Real earnings management

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I. Introduction

A long-standing research question in accounting and finance literature is how financial transparency impacts individual firms. Managerial discretion over accounting choices and business practices render the potential possibilities for managers to manipulate earnings to disguise real corporate performance, i.e. earnings management. Previous studies suggest that such information asymmetries would induce frictions between sellers and buyers, which reduce the liquidity of the firm's securities. This reduction in liquidity is unwanted for firms either with large growth opportunities or who are unable to fund investment activities through internally generated profits, as illiquid firms face an increased cost of capital when seeking external financing(Ng 2011).

If informational asymmetries create economic disadvantages for firms, a key question arises as to why firms do not disclose all relevant private information to the marketplace and even distort earnings when conducting equity offerings. The evidence of accrual based earnings management around seasoned equity offerings (DuCharme, Malatesta and Sefcik 2004; Rangan 1998; Teoh, Welch and Wong 1998) suggest that firms distort earnings report to inflate the share prices to benefit existing shareholders at the expense of potential shareholders. This could serve as one plausible explanation. However, recent observations show that SEO firms are found to engage in real earnings management during seasoned equity offerings and the decline in post-SEO firm performance is more severe compared to accrual manipulation(Cohen and Zarowin 2010). The finding is intriguing, since while real earnings management activities could distort the information quality to inflate prices like accrual-based earnings management, real earnings manipulations also have direct cash flow consequences and could affect the stock volatility and liquidity, thus impact stock prices. The relationship among information transparency, stock liquidity and cost of equity is unclear in this regard.

The focus of our analysis is seasoned equity issuance of Real Estate Investment Trusts (REITs). Created in United States, Real Estate Investment Trusts (REITs), offer individuals the opportunities to invest in real properties. The tax exempt feature of REITs requires REITs to distribute a minimum 90% of their taxable income to investors as dividends, limiting the possibility of free cash flow. Restricted investment options on real estate assets, REIT managers' cannot simply boost their compensation through activities like merger and acquisitions and also the dual performance measure by net income and funds from operation limits agency problems. In such a relative transparent industry like REITs, REITs managers are inclined to engage in real earnings management activities over accrual based manipulation. Ambrose and Bian (2010) indicate that REITs firms that are suspected of earnings management do not seem to be more mispriced than the non-suspected firms, and the information seems to drive the negative earnings management. Moreover, since REITs with less cash flow from operations are less probable to external financing, their inclination to real earnings management is higher compared to general firms.

In this paper, we examine the impact of real earnings management activities on the REITs SEO process to further explore the potential linkages among information transparency, stock liquidity and equity offerings. Corporate finance literature suggests that firms time seasoned equity offerings either by selling the overpriced shares (window of opportunity/behavioural hypothesis) or by exploiting the time-varying risk to minimize the cost of equity (the risk-trade off hypothesis). Eckbo and Norli(2005) examine the risk factor associated with stock returns around seasoned equity offerings, concluding that liquidity risk also determines post-SEO stock returns. DeAngelo, DeAngelo and Stulz (2010) document that "most issuers would have run out of cash by the year after the SEO had they not received the offer proceeds". Lin and Wu (2010) also find the decrease in liquidity risk prior to SEO filing help to minimize firms' cost of equity.

Particularly, we apply a recently developed liquidity-augmented asset pricing model to measure the liquidity risk and market risk for REITs. We focus on REITs' exposures to liquidity risk and market risk in relation to the level of real earnings management around SEO to (1) test the role of real earnings management in REITs SEO timing, and (2) examine whether real earnings management will play a role in SEO firms' stock price dynamics.

We find that REITs managers engage in real earnings management to attract more uninformed trading in order to provide the liquidity services at lower cost during seasoned equity offerings. Less liquid firms are more likely to manipulate earnings prior equity offerings and uninformed trading is higher following the real earnings management. Firms set the offer price at a smaller discount after engaging in real earnings management and stock returns decline in the long run.

Contribution of this paper is manifold. First, we contribute to the REITs seasoned equity issuance literature by providing evidence that real earnings management influences REITs equity offering decision, supporting the notion that managers distort the earnings to time the market. Second, we contribute to the determinants of SEO discounting and underpricing by providing another important determinant - real earnings management. Third, we contribute to accounting literature by providing another setting where real earnings management plays a nontrivial role in market timing and price formation. Finally, this paper provides the empirical evidence on real earnings management and stock liquidity, supporting recent debates on information quality and liquidity risk.

This paper proceeds as follows. We review the relevant literature in Section II and construct our hypotheses in Section III. Section IV describes the data.

Section V discusses the empirical results. Section VI presents the robustness test. Section VII concludes.

II. Literature Review

1. Real earning management

Real earning management happens when managers disguise real economic performance by taking real economic actions. In Graham, Harvey and Rajgopal (2005)'s survey on more than 400 executives of U.S. firms, managers are willing to sacrifice small economic value for meeting earnings targets. Strong evidence is reported that managers take real economic actions, like decreasing discretionary expenditures to burn real cash flow for a desired reported earnings (Bartov 1993; Roychowdhury 2006). Real earnings management masks a firm's current unbiased economic performance, and may endanger a firm's competitiveness in the long term (Wang and D'Souza 2006; Zang 2007). Unlike accrual-based earnings management, real earnings management could negatively impact on the level of future net cash flows and increase the volatility. Gunny (2010) tests the consequences of real earning management activities and results indicate that reported income increases through real earnings management activities. By reducing research and development (R&D) expenses for instance, real earnings management negatively impacts on the firm's future operating performance(Cohen, Dey and Lys 2008).

It is hard for outsiders to distinguish the suboptimal decisions from the optimal. After Sarbanes-Oxley Act (SOX) imposed more stringent reporting standards, firms started to switch from accrual-based earnings management to real earnings management methods. Though real earnings management costs higher (Roychowdhury 2006), it is more opaque and more difficult for outsiders to detect (Cohen and Zarowin 2010; Zang 2007). Later, Lobo, Zhang and Zhou (2008) confirm the time pattern of manager's preference on alternatives of

earning management and indicate that the decrease in accruals earning management was smaller at firms with better corporate governance. Consistent with this hypothesis, in Mizik and Jacobson (2007)'s test around a seasoned equity offering, financial markets overvalue the firms' engaging in earnings inflation linked to real activity manipulation.

In REITs, real earnings management is a sparsely explored topic. Edelstein, Gao and Tsang (2013) document that REITs engage in significant real activities manipulation, which, however, are constrained by the effect of corporate governance. Edelstein, Liu and Tsang (2009) indicate that REITs may employ real earnings management when confronting constrained capability for meeting their legal dividend payout requirements. They find that these firms are more likely to reduce their taxable income, and hence their required dividend payment, by deferring the recognition of revenue and by incurring expenses sooner. They further find that REITs which can generate less cash flow from operations and which have fewer opportunities to obtain external funding are more likely to engage in real earnings management. Ambrose and Bian (2010) investigate whether information generated from stock market trading influences managers' incentives to engage in earnings management in REITs and whether investors can anticipate earnings management. Their findings imply real earnings management is utilized to affect equity stock pricing.

2. REITs Seasoned equity offering

The literature on REITs seasoned equity offerings is well established. There is a large literature providing estimates of the market reaction to security issue announcements. Like general stocks, a significant negative reaction is identified under the implication of Myers and Majluf (1984). Using REITs data from 1970 to 1985, Howe and Shilling (1988) document a negative stock price reaction to equity offerings and a positive stock price reaction to debt offerings.

Ghosh, Nag and Sirmans (1999) report a significant negative market reaction using REITs equity offering in 1990s.

Another strand of literature on REITs seasoned equity offerings is concerned with capital structure changes. Since trade-off and pecking order rationales are almost silent due to REITs unique characteristics, previous literature on REIT capital structure largely focuses on the signalling effects of equity and debt offerings of REITs (Howe and Shilling, 1988; Brown and Riddiough, 2003). Recent empirical results show that REITs time market within a general targeted debt ratio environment. Ooi, Ong and Li (2010) examine the public offerings timing attempts in REITs and targeted debt ratios. They point out that REITs time market within a general targeted debt ratio environment. Studies by Boudry, Kallberg and Liu (2010) and Ghosh, Roark and Sirmans (2011) also recorded strong evidence supporting the market timing theory in explaining the issuance decisions of REITs.

However, limited studies are conducted on REITs SEO pricing. Ghosh, Nag and Sirmans (2000) document that the significant REITs SEO underpricing is related with institutional ownership, issue size, and underwriter reputation. Goodwin (2011) further argues that when there is high placement cost and value uncertainty with new REITs shares, investors will ask for a greater discounting. Short-selling and IPO returns indicate the strong evidence for behavioral trading in REITs market (Blau, Hill and Wang 2011). Surprisingly, there is no work relating real earnings management to REITs seasoned equity issuance and its pricing process.

Much has been done in the areas of seasoned equity offering but questions remains. Recent research indicates that security issuers often exercise large real investment options around equity offering, suggesting endogenous corporate investment/financing decision determined by firm's asset in place. Since firm's real earnings management activities distort the firm cash flow, this would be

interesting to ask how real earnings manipulation will affect the corporate financing decisions like seasoned equity offerings or how this will contribute to the expect stock returns.

3. Liquidity risk

Liquidity risk is defined in Pastor and Stambaugh (2003)as a stock's return sensitivity to unexpected market liquidity changes. Empirical evidence supports for the pricing of liquidity risk, including the work of Pastor and Stambaugh (2003), Acharya and Pedersen (2005), and Sadka (2006). Pastor and Stambaugh (2003) incorporate their concept of liquidity into empirical test by estimating the correlation of a firm's stock return to aggregate liquidity (liquidity beta). Acharya and Pedersen (2005) further address four possible types of systematic risk between a firm and the market in return and liquidity. And several studies highlight the difference between liquidity risk and liquidity (Acharya and Pedersen 2005; Korajczyk and Sadka 2008; Lou and Sadka ; Sadka 2011).The liquidity risk of a particular stock is viewed as the stock return sensitivity to unexpected changes in market liquidity. However, the liquidity means the ability to trade large quantities at low cost and efficiently.

As discussed in the introduction, this study is largely motivated by Lambert, Leuz and Verrecchia (2007)'s theoretical work on the effect of information quality on market risk. Since real earnings management distorts firm's information quality, the substantial effect of information quality on cost of capital through liquidity might be significant.

III. Hypothesis

Literature suggests that illiquid firms face an increased cost of capital when seeking external financing. Therefore less liquid firms are more likely to

increase its stock liquidity prior external financings to reduce the liquidity service cost. Since real earnings manipulations have direct cash flow consequences as well as distort information quality, our first objective is to examine whether there exists any relation between real earnings management and stock liquidity, i.e. whether firms adopt real earnings management to increase its stock liquidity. Ng (2011) evidence there exists a negative relation between information quality and liquidity risk. Since a higher level of real earnings management indicates lower information quality, therefore, our first hypothesis is

Hypothesis1 The decision by REITs to manage earnings via real activities manipulation is associated with its risk profile (pre-liquidity risk and pre-market risk).

Our second objective is to analyze the economic impact of real earnings management. If certain firms manage earnings via real activities to increase their stock liquidity, this will result in a higher stock liquidity and an increasing presence of institutional investors. All these could attract more uninformed trading to further increase the liquidity. Therefore, our second hypothesis is

Hypothesis2 Pre-SEO abnormal trading is positively related with real earning management prior SEO.

Last but not the least, our third objective is to examine the impact of real earnings management on the subsequent stock performance.

Market timing theories argues that firms time seasoned equity offerings either by selling the overpriced shares (window of opportunity/behavioural

hypothesis) or by exploiting the time-varying risk to minimize the cost of equity (the risk-trade off hypothesis). In light of real earnings management, the manager invests inefficiently by engaging in real earnings management activities (exercising the investment option too early) to attempt to fool the market into overestimating the project's NPV before seasoned equity issuance. Therefore, we hypothesize:

Hypothesis3 Pre-SEO price mispricing is positively related with real earning management prior SEO.

Should real earnings management be attributable to good pre-filing stock performance, SEO firms with real earnings management will be less prone to market liquidity shocks. Investors will require a lower liquidity risk premium at and after the SEOs. Firms could set the offer price as a lower discount in line with liquidity service cost (floatation) reduction. Hence,

Hypothesis4 SEO discounting is negatively related with the level of real earnings management prior SEO.

However, real earnings management masks a firm's current unbiased economic performance, and may endanger a firm's competitiveness in the long term. SEO firms are also found to engage in real earnings management during seasoned equity offerings and the decline in post-SEO operating performance is more severe compared to accrual manipulation(Cohen and Zarowin 2010). Hence,

Hypothesis5 Post-SEO long run return is negatively related with the level of real earnings management prior SEO.

IV. Data and sample description

We analyze the SEOs conducted by equity REITs during January 1, 2000 and December 31, 2011, reported in SDC database. The study period begins from 2000, since real earnings management activity is found to increase over accrual based earnings management in the recent decade. We further restrict the sample to 1) common share offerings 2) listed on NYSE, Nasdaq, or Amex,3) nonmissing values on Compustat and CRSP. This finally generates 508 seasonal equity offerings.

Table 1 summarizes the descriptive statistics of our REITs SEO sample. Panel A summarizes the issue characteristics. The SEO firms in our sample tend to have higher market to book value. This is expected, since firms tend to issue equity when their market valuations are overvalued. Panel B and Panel C present the SEO activities of REITs sector during the study period. Since the market suffered from a downturn and bottomed out in 2000, fewer SEO were issued in early 2000. After 2001, REITs SEO activities revived and steadily increased onwards.

[Insert Table 1]

V. Research Design

1. Real earning management measure

We follow prior studies to construct our proxies for real earnings management (Roychowdhury,2006;Cohen et al,2008; Kim, Lisic, Myers and Mikhail, 2011). We focus on the following three types of real earnings management activities.[1]

1. Timing the revenue recognition through cash flow from operations CFO.
2. Timing the recognition of cost of goods sold COGS(i.e. property operating expenses for REITs).
3. Timing the property disposition.

We first estimate the normal level of CFO, property operating expenses and assets disposition by using the models implemented by Roychowdhury (2006). We express normal level of CFO as a linear function of sales in the last period and change in revenue in the last period. We estimate the following function by each year.

$$\frac{CFO_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{REV_{it}}{Assets_{i,t-1}} + k_3 \frac{\Delta REV_{it}}{Assets_{i,t-1}} + \varepsilon_{it} \qquad (1)$$

Abnormal CFO (*ABCFO*) is the actual CFO minus the CFO estimated using the model.

We next model the property operating expenses as a linear function of contemporaneous revenue.

$$\frac{Xopr_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{REV_{it}}{Assets_{i,t-1}} + k_3 D + k_4 \frac{REV_{it}}{Assets_{i,t-1}} D + \varepsilon_{it} \qquad (2)$$

D is a dummy variable if revenue decreases compared with its last period.

[1] There are other alternative real earnings management tools such as changing discretionary expenses including advertising, R&D, and SG&A expenses. However, they are not available to real estate firms.

Abnormal cost of goods sold (*ABEXP*) is the actual property operating expenses *Xopr* minus the *Xopr* estimated using the model.

For normal level of asset disposition, we model it as a linear function of market capitalization, fixed asset sales and capital expenditure.

$$\frac{GAIN_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 MV_t + k_3 \frac{ASALES_{it}}{Assets_{i,t-1}} + k_4 \frac{CAPX_{it}}{Assets_{i,t-1}} + \varepsilon_{it}$$

(3)

Abnormal property disposition (*ABDISP*) is Gain/Loss from the Sale of Property, Plant and Equipment and Investments minus the Gain/Loss estimated using the model.

All data used in the regressions are retrieved from COMPUSTAT, where CFO is the cash flow from operation, Assets is the total book value, REV is the total revenue, ΔREV is the revenue growth, *Xopr* is the actual property operating expenses, GAIN is the gain from assets sales and income from assets sales/ disposition, *MV is* the market value, *Q* is Tobin-Q, *ASALES* is long-lived assets sales, and *CAPX* is long-lived investment sales.

We use abnormal CFO (*ABCFO*), abnormal cost of goods sold (*ABEXP*) and abnormal property disposition (*ABDISP*) as proxies for real earnings management in this paper. Given sales levels, REITs that manage earnings upwards are likely to have unusually low cash flow from operations, unusually high property operating expenses, and/or unusually low gain (even loss) from assets sales and income from assets sales/ disposition (Cohen and Zarowin 2010).

2. Liquidity-augmented CAPM

In a liquidity-augmented CAPM, the risk premium on stock i can be expressed as

$$E(R_{i,t}) - r_{f,t} = \beta_{m,t}[E(R_{m,t}) - r_{f,t}] + \beta_{liq,t}E(LIQ_t) \quad (4)$$

Where $E(R_{m,t})$ is the expected return of the market portfolio, $E(LIQ_t)$ is the expected value of the mimicking liquidity factor(Pástor and Stambaugh 2003), $\beta_{m,t}$ and $\beta_{liq,t}$ are firm i's market beta and liquidity beta, respectively.

To reflect the risk profile of each individual REIT, we calculate firm's betas prior SEO by regressing their past 36 month returns on market and liquidity factors obtained from WRDS website. Observations with less than 12 months return data in their prior 36 months are excluded. In the primary results, we use the liquidity factor developed by Pástor and Stambaugh (2003) to estimate firm's pre-betas. For robustness check, we use the factors developed in Sadka(2006), which are based on the transitory-fixed and permanent-variable components of price impact.

3. Pre-SEO misvaluation

To examine the impact of real earnings management on misvaluation before SEO, we decompose pre-issue market-to-book (m-b) ratios into misvaluation (m-v) and growth opportunities (v-b) following the methodology developed by Rhodes-Kropf, Robinson and Viswanathan (2005) (RKRV, thereafter), and utilized in several recent papers (Fu, Lin and Officer 2010; Hertzel and Li 2010; Hoberg and Phillips 2010) .

If investors overestimate the future cash flows or underestimate risks, market-to-value will capture the mispricing component of the market-to-book ratio. RKRV methodology estimates the firm value v by estimating both industry level accounting multiples and long run firm accounting multiples using the following equation.

$$m_{it} - b_{it} = m_{it} - v(\theta_{it}; \alpha_{jt}) + v(\theta_{it}; \alpha_{jt}) - v(\theta_{it}; \alpha_{j}) + v(\theta_{it}; \alpha_{j}) - b_{it} \quad (5)$$

The first component $m_{it} - v(\theta_{it}; \alpha_{jt})$ measures the difference between market value and fundamental value estimated using firm-specific accounting data and the contemporaneous industry accounting multiples. This component is the mispricing proxy we use in this paper. The third component $v(\theta_{it}; \alpha_{j}) - b_{it}$ captures the growth opportunities.

To empirically separate mispricing component, RKRV (2005) adopt three different models to estimate firm value. We adopt RKRV's 3rd model to estimate the market value as follows[2]:

$$m_{it} = \alpha_{0jt} + \alpha_{1jt} b_{it} + \alpha_{2jt} \ln(NI)^{+}_{it} + \alpha_{3jt} I_{(<0)} \ln(NI)^{+}_{it} + \alpha_{4jt} LEV_{it} + \varepsilon_{it} \quad (6)$$

Where m is market value of equity, b is a book value of equity, $\ln(NI)^{+}_{it}$ is the natural logarithm of positive net income, I is an indicator function for negative net income observations, and LEV is leverage ratio.

To calculate the REITs industry wide accounting multiples, we run cross-sectional regressions for the REITs industry to obtain the estimated REITs industry accounting multiples $\hat{\alpha}_{jt}$ for each year t.

[2] The 1st model includes book value and the 2nd model includes net income in addition to book value. Our results remain robust to either of these models. RKRV provides a detailed discussion of the rationale behind these models.

Hence, the estimated firm value is obtained in the following equation.

$$v(b_{it}, NI_{it}, LEV_{it}; \hat{\alpha}_{0jt}, \hat{\alpha}_{1jt}, \hat{\alpha}_{2jt}, \hat{\alpha}_{3jt}) = \hat{\alpha}_{0jt} + \hat{\alpha}_{1jt} b_{it} + \hat{\alpha}_{2jt} I_{(<0)} \ln(NI)^{+}_{it} + \hat{\alpha}_{3jt} LEV_{it} \quad (7)$$

The difference between market value m_{it} prior to SEO issuance and the estimated firm value $v(b_{it}, NI_{it}, LEV_{it}; \hat{\alpha}_{0jt}, \hat{\alpha}_{1jt}, \hat{\alpha}_{2jt}, \hat{\alpha}_{3jt})$ is our proxy for stock mispricing.

4. Control variables

We control for other determinants of SEO issuance and its price dynamics that have been documented in prior studies.

We include a set of control variables for firms' characteristics. We use the nature logarithm of firm's market capitalization (Size) to control for firm size. We also include REITs growth level(*Growth*), percentage change of total assets from last period. We calculate firms' market-to-book ratio (logMB) as the logarithm of firms' market value divided by its book value in the most recent quarter. Cash and short-term investment (Cash) and return on assets (Roa) are applied to control firm's financial slack.

The second set of control variables included are the SEO characteristics. *Uranking* is the underwriter reputation(Carter and Manaster 1990; Safieddine and Wilhelm Jr 1996). *SeqREIT* is constructed as the current SEO sequence regarding the REIT itself to account for the clustering and frequency of SEO (Ghosh, Nag and Sirmans 2000). *Age* is the number of years between the SEO year and the IPO year to measure the stage in firm life cycle as suggested in (DeAngelo, DeAngelo and Stulz 2010).

Lastly, we include variables for alternative explanations. Information asymmetry (InfoAs) is the abnormal return around earning announcement releases (Lowry, 2003). Investors' sentiment is also included to control for the

possibility that managers issue equities when investors are over-optimistic. Investors' sentiment index is constructed from University of Michigan's Consumer Sentiment Index, using the methodology described in Lemmon and Portniaguina (2006).

VI. Empirical Results

1. Empirical evidence of Real Earnings Management

Figure 1 descripts the average level of real earnings management activities in the SEO year and the years immediately preceding and following it using quarterly data. REITs that conduct SEOs generally exhibit unusually low cash flow from operations (negative), higher property operating expenses, and unusually low gain (negative) from assets sales and income from assets sales/ disposition prior issuance. Real earnings management activities increase significantly prior issuance and decline post issuance.

[Insert Figure 1]

We also report the average level of real earnings management activities of non-SEO REITs in the match period. Consistent with Cohen and Zarowin(2010), we find significant negative abnormal CFO and positive abnormal property operating expenses in the SEO year for REITs. And most importantly, we also find negative gains (loss) from abnormal assets sales and income from assets sales/ disposition in the SEO year for REITs, which has not been found in the study of general firms.

2. Determinants of real earnings management

Unlike accrual earnings management, real earnings manipulations have direct cash flow consequences and could affect the stock volatility, thus impact stock prices. Ng (2011) evidence a negative relation between information quality and liquidity risk, which results in a reduction in the cost of equity. We analyze the determinants of real earnings management around SEO issuance in the following multivariate model.

$$REM_t = \alpha_0 + \alpha_1 Liq\_beta_t + \alpha_2 Mkt\_beta_t + Controls_t + Time + \varepsilon \quad (8)$$

Liquidity beta and market beta are calculated by regressing their past 36 month returns on market and liquidity factors using Liquidity Augmented CAPM model. The liquidity factor used is developed by Pástor and Stambaugh (2003) (WRDS website). Observations with less than 12 months return data in their prior 36 months are excluded.

Table 2 shows the determinants of real earnings management around SEOs. The coefficients for both liquidity risk and market risk are all with predicted signs and significant for the three real earnings management proxies, indicating that REITs managers take the market risk and stock liquidity risk into consideration when they choose to manage earnings via real manipulation activities prior SEO. Firms with higher pre-beta, that is, more vulnerable to liquidity shocks and market turmoil, are more likely to manipulate their earnings via real earnings management activities (lower-than-average abnormal CFO , higher-than-average abnormal property operating expenses, and lower-than-average negative gains (loss) from abnormal assets sales and income from assets sales/ disposition).

Table 2 also presents the relationship between the real earnings management and other variables. The coefficients for cash and short-term investment is negative, indicating that REITs are more likely to manipulate earnings via timing the revenue and asset disposition around SEO when they are financially slack. Firm age affects differently across the three real earnings management proxies, indicating that firms adopt different real earnings management tools based on their maturity.

Overall, our findings are consistent with the hypothesis that the decision by REITs to manage earnings via real activities manipulation around SEO is associated with its risk profile, supporting that REITs exploit the time-varying risk when conducting seasoned equity offerings.

[Insert Table 2]

3. Uninformed Trading and Real Earnings Management

As discussed in previous section, firms with higher liquidity risk are more likely to engage in real earnings management activities. Our next question is why real earnings management?

If certain firms manage earnings via real activities to increase their stock liquidity, this will result in a higher stock liquidity and an increasing presence of institutional investors. All these could attract more uninformed trading to further increase the liquidity as stated in Hypothesis 2.

We then test the impact of real earnings management activities on the investors trading activities. Using standard event study method, we calculate abnormal trading volume prior SEO. For each REIT, we use a maximum of 70 daily volume observations for the period around its respective SEO, starting at day -70 and ending at day -1 relative to the event. The first 65 days (three months)

in this period (-70 through -5) is designated the 'estimation period', and the following 5 days (-5 through -1) is designated the 'event period'. The abnormal trading volume[3] prior SEO is estimated as

$$AV_{jt} = V_{jt} - \overline{V_j} \tag{9}$$

where V_{jt} and $\overline{V_j}$ are average trading volume for REIT j during the event period and the estimation period, respectively.

We analyze the impact of real earnings management around SEO issuance on uninformed trading in the following multivariate model.

$$AV_{jt} = \alpha_0 + \alpha_1 REM_t + Controls_t + Time + \varepsilon \tag{10}$$

Where *REM* are the proxies for real earnings management.

Table 3 documents that the level of real earnings management is positive related with the uninformed trading in the market. The coefficients the three real earnings management proxies are with predicted signs and significant, indicating that less liquid firms are more likely to manipulate earnings prior equity offerings and uninformed trading is higher following the real earnings management. Increased uninformed trading will reduce the liquidity costs during seasoned equity offerings, which is exactly wanted by illiquid firms.

[Insert Table 3]

4. Real earnings management and SEO price dynamics

[3] In robustness test, we also measure the abnormal trading volume using 22 days (one month), 44 days (two months) prior to SEO as the event period. The market adjusted benchmark other than the mean-adjusted benchmark is augmented as suggested in (Campbell and Wasley, 1996).

4.1 Pre SEO stock valuation

Based on the discussion in section III, Hypothesis 1 predicts that pre-SEO stock mispricing is positively related with the level of real earnings management, since the REITs managers are induced to invest inefficiently by engaging in real earnings management activities to attempt to fool the market into overestimating the project's NPV before seasoned equity issuance. As described in previous section, we adopt RKRV methodology to calculate the mispricing (*PreMis*) using firm stock closing price the day prior to SEO issuance. We analyze the relation between real earnings management and pre-issuance mispricing of SEO firms in the following multivariate model.

$$\Pr eMis_t = \alpha_0 + \alpha_1 REM_t + Controls_t + Time + \varepsilon \quad (11)$$

REM are the three proxies for real earnings management.

Table 4 shows the results. The coefficients for real earnings management proxies are all significant with predicted signs. Real earnings management activities deviate stock price from the fundamental value, showing that managers manipulate earnings to issue the equity at the expense of potential investors. The mispricing story hinges on the motivation for managers to take advantage of pre-existing exposures to systematic risks (liquidity, market). Intuitively, REM could result in additional information about the issuer which would information flow and liquidity trading, thereby pushing up stock price. Model's explanatory power (adjusted R square) significantly increases after incorporating real earnings management variables.

We document a negative relationship between mispricing level and information asymmetry *(InfoAs)*, but this relationship is insignificant. Mispricing is higher for older firms and frequent equity issuers, implying that market is deceived repeatedly by real earnings management activities. Overall, our findings are consistent with the hypothesis that pre-SEO stock mispricing is positively

correlated with the real earnings management activities, lending support to window of opportunity/behavioural hypothesis of seasoned equity offerings.

[Insert Table 4]

4.2 Real earnings management and SEO discounting

Next we examine the relationship between the level of real earnings management and discounting. We specify the following regression.

$$Discounting_t = \alpha_0 + \alpha_1 REM_t + Controls_t + Time + \varepsilon \quad (12)$$

Table 5(A) shows the results. The coefficients for real earnings management proxies are all significant with predicted signs. We observe that firms set the offer price at a smaller discount after engaging in real earnings management. Since Real earnings management should be attributable to good pre-filing stock performance, it results in a higher stock liquidity and an increasing presence of institutional investors. All these could attract more uninformed trading to issuing firms. As a consequence, SEO firms with real earnings management are less prone to market liquidity shocks, and investors will require a lower liquidity risk premium at and after the SEOs.

[Insert Table 5(A)]

We are aware that in our sample, there are observations with zero discounting, that is, firm simply sets the offer price at the market price. To investigate the impact of real earnings management on this phenomenon, we specify the following probit test.

$$DisATM_t = \alpha_0 + \alpha_1 REM_t + Controls_t + Time + \varepsilon \quad (13)$$

$DisATM$ is binary variable, indicating if the firm sets the offer price at the market price.

Shown from Table 5(B), the coefficients for real earnings management proxies are all significant with predicted signs. Firms are more likely to set the offer price at the market price if they engage in real earnings management prior SEO.

[Insert Table 5(B)]

As for other control variables, sentiment is positively related with SEO discounting level, consistent with behavioral explanations for seasoned equity offerings. Besides, Loderer, Sheehan and Kadlec (1991) argue that many of IPO theories based on asymmetric information can be applied to seasoned equity offerings. Corwin (2003) provides analysis of these theories in the context of SEOs, whereas Goodwin (2011) examines the information asymmetry theories in the context of REIT SEOs. All these theories predict positive relationship between the level of information asymmetry and discounting. The positive and significant relation between *InfoAs* and discounting is consistent with this reasoning . This also demonstrates that our proxies for real earnings management do not capture the effect of information asymmetry.

Above all, results show that firms set the offer price as a lower discount after engaging in real earnings management as the result of liquidity service cost (floatation) reduction.

4.3 Real earnings management and long run stock return

Finally, we look at the long run performance after REITs equity offerings. We define long-run abnormal return as SEO risk adjusted return for 3, 6, and 12 months using Fama-French four factor model.

$$R_{i,t} = \alpha + r_{f,t} + \beta_{1t}[E(R_{m,t}) - r_{f,t}] + \beta_{2t}SMB + \beta_{3t}HML + \beta_{4t}UMD + \varepsilon \quad (14)$$

Where $R_{i,t}$ is the REIT's rate of return, $r_{f,t}$ is the risk-free return rate, $R_{m,t}$ is the return of the stock market, SMB stands for return of "small minus big" portfolio, HML stands for return on "high book-to-market minus low book-to-market" portfolio, and UMD stands for momentum factor (MOM), which is long prior-month winners and short prior-month losers.

Since real earnings management activities disguise firm's performance and intend to fool the investors, we expect to observe lower long-run underperformance after seasoned equity offerings (Loughran and Ritter 1995) as real earnings management deviates firm from optimal business practice.

We specify a following multivariate regression to test the impact of real earnings management on long run returns.

$$Lret = \alpha_0 + \alpha_1 REM + Controls + Time_t + \varepsilon \quad (15)$$

Shown in Table 6, stock returns decline in the long run with the level of real earnings management, consistent with previous findings on post-SEO underperformance on operating (Cohen and Zarowin 2010). Since the level of mispricing is greater for older firms and frequent equity issuers found in the previous analysis , the underperformance of stock return in the long run lines up with the concept that the post-SEO price corrects price based on how much real earnings management took place prior to the SEO.

Furthermore, model's explanatory power (adjusted R square) increases after incorporating real earnings management variables.

[Insert Table 6]

VII. Robustness Test

We are mindful that the equity issuance clustering effect might bias our estimates. We address this issue by clustering error terms (Petersen 2009). We estimate our models after clustering standard errors in unreported analysis.

We also estimate the liquidity risk loadings by using the factors developed in Sadka(2006), which are based on the transitory-fixed and permanent-variable components of price impact. As for the abnormal trading volume, we measure the abnormal trading volume using 22 days (one month), 44 days (two months) prior to SEO as the event period in the unreported analysis. The market adjusted benchmark other than the mean-adjusted benchmark is augmented as suggested in (Campbell and Wasley, 1996). And the result remains significant and robust.

VIII. Conclusions

The evidence of accrual based earnings management around seasoned equity offerings (DuCharme, Malatesta and Sefcik 2004; Rangan 1998; Teoh, Welch and Wong 1998) suggest that firms distort earnings report to inflate the share prices. Meanwhile, SEO firms are also found to engage in real earnings management during seasoned equity offerings and the decline in post-SEO firm performance is more severe compared to accrual manipulation(Cohen and Zarowin 2010). The finding is intriguing, since while real earnings

management activities could distort the information quality to inflate prices like accrual-based earnings management, real earnings manipulations also have direct cash flow consequences and could affect the stock volatility, thus impact stock prices. However, there is no study examining how real earnings management affect the stock return and cost of equity around seasoned equity offering. Our research fills the gap.

In this paper, we examine the impact of real earnings management activities on the REITs SEO process to revisit the window of opportunity and risk-return trade-off hypotheses debated in the literature. Given the high dividend payout feature and restricted investment options on real estate assets, REITs managers are inclined to engage in real earnings management activities over accrual based manipulation compared to general firms. Particularly, we apply a recently developed liquidity-augmented asset pricing model to measure the liquidity risk and market risk for SEO firms. We focus on firms' exposures to liquidity risk and market risk in relation to the level of real earnings management around SEO to (1) test the role of real earnings management in SEO timing, and (2) examine whether real earnings management will impact SEO firms' stock return.

We find that REITs managers engage in real earnings management to attract more uninformed trading in order to provide the liquidity services at lower cost during seasoned equity offerings. We find less liquid firms are more likely to manipulate earnings prior equity offerings and uninformed trading is higher following the real earnings management. Firms set the offer price at a smaller discount after engaging in real earnings management and stock returns decline in the long run. The findings are consistent with real option and liquidity explanations.

Overall, real earnings management seems to play an important role in REITs seasoned equity offerings. Future research will link up property disposition and

acquisition with the real earnings management activities in the empirical analysis.

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Table 1 Descriptive statistics for REITs firms conducting SEOs during 2000–2011

Panel A: REITs SEO Charateristics

Variable	Median	Mean	Std. Dev.
Asset	1935.76	2888.57	3131.39
Market Capitalization	2398.43	3505.82	3828.08
Leverage	0.46	0.48	0.16
Market to Book	1.16	1.21	0.30
Offer Amount	102.05	165.62	182.48

Panel B: Time Distribution

Year	Freq.	Percent%	Cum.%
2000	3	0.59	0.59
2001	29	5.71	6.30
2002	28	5.51	11.81
2003	50	9.84	21.65
2004	47	9.25	30.91
2005	39	7.68	38.58
2006	59	11.61	50.20
2007	25	4.92	55.12
2008	35	6.89	62.01
2009	60	11.81	73.82
2010	69	13.58	87.40
2011	64	12.60	100.00
Total	**508**		

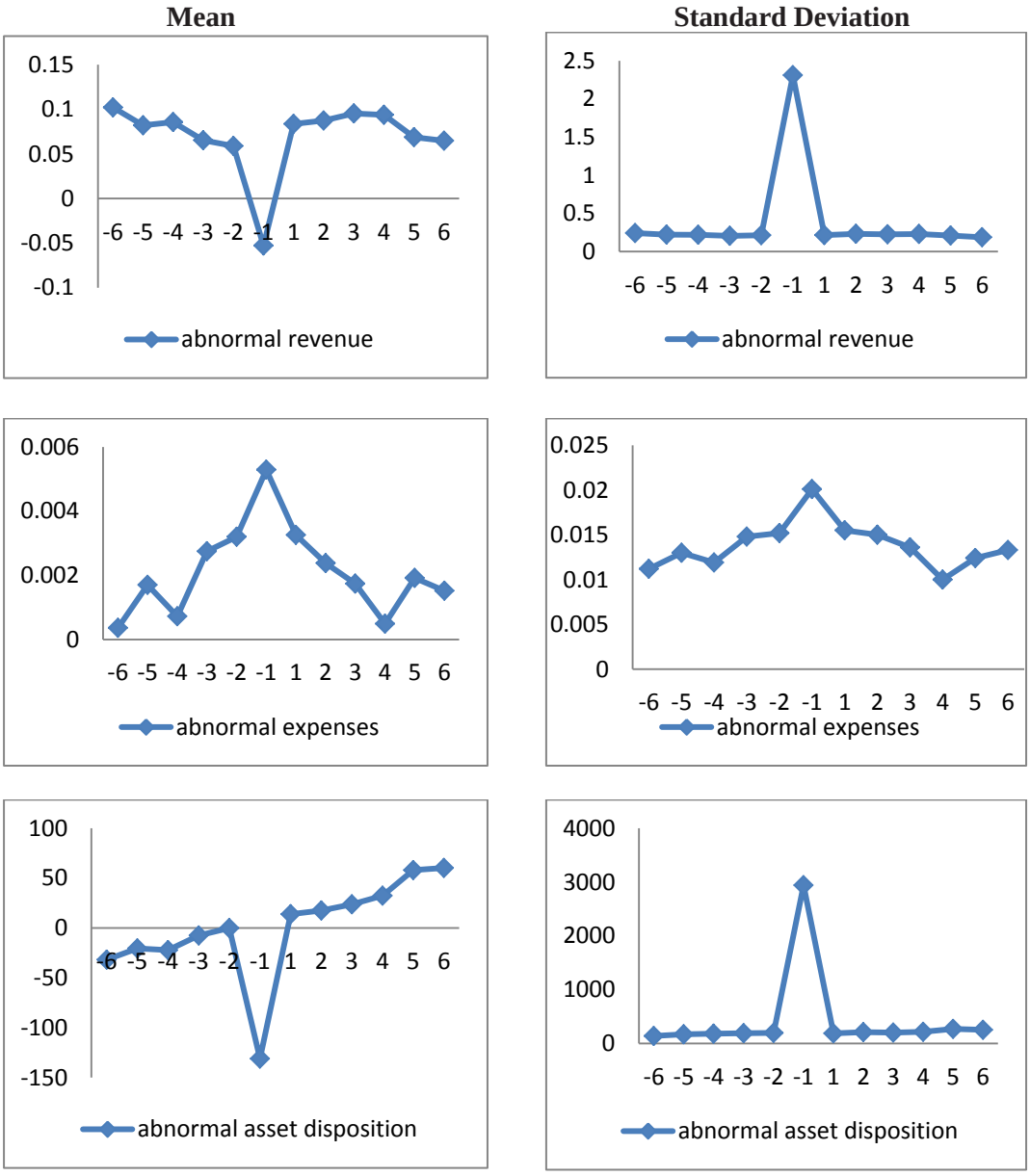
Panel C: Property Type Distribution

	Freq.	Percent	Cum.
Diversified	50	9.84	9.84
Health Care	83	16.34	26.18
Industrial/Office	116	22.83	49.02
Lodging/Resorts	69	13.58	62.60
Residential	46	9.06	71.65
Retail	118	23.23	94.88
Self Storage	9	1.77	96.65
Specialty	17	3.35	100.00
Total	**508**		

Figure 1 Real earnings management around REITs SEOs

Figure 1 descripts the average level and standard deviation of real earnings management activities in the SEO year-quarter and the years immediately preceding and following it using quarterly data. Proxies for real earnings management are measured in acceleration of the timing of sales (abnormal sales), decreasing cost (abnormal cost) and abnormal asset disposition. In later analysis, we scale down abnormal cost by 10^{-1} and abnormal asset disposition by 10^{-5} for better explanation.

Panel A



	Mean (SEO firm quarters)	Mean (non-SEO firm quarters)	Mean Difference	t-test
ABCFO	-0.09	0.058	-0.11	3.52***
ABEXP	0.0055	0.0023	0.0032	3.34***
ABDISP	-122.46	20.72	-143.18	3.54***

Table 2 Determinants of real earnings management prior SEOs

This table presents the result of determinants of real earnings management around SEOs. Dependent variables are measures for real earnings management *AbRev*, *AbCogs* and *AbDisp*, respectively. *Liq_beta* and *Mkt_beta* are liquidity beta and market beta estimated using liquidity augmented CAPM, respectively. Size is the nature logarithm of firm's market capitalization . Growth is percentage change of total assets from last period. logMB is the logarithm of firms' market value divided by its book value in the most recent quarter. Cash is Cash and short-term investment. Roa is return on assets. Age is the number of years between the observation year and the IPO year.*, ** and *** represents the 10%, 5% and 1% significance level respectively. T-statistics are included in parentheses.

	Abnormal CFO(*ABCFO)*		Abnormal Operating Expense(*ABEXP)*		Abnormal Asset Disposition(*ABDISP)*	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Liq_beta		-0.139***		0.420**		-0.107*
		(-3.79)		(2.21)		(-1.87)
Mkt_beta		-0.0224**		0.0229***		0.0614***
		(-2.05)		(4.06)		(3.62)
Cash	-0.0169	-0.00711	-0.0405	-0.0739	-0.0379	-0.0553*
	(-0.38)	(-0.35)	(-0.39)	(-0.71)	(-1.19)	(-1.77)
Size	0. 101	-0. 0394	-0. 424	-0. 357	0.390	0. 457
	(0.07)	(-0.06)	(-1.27)	(-1.06)	(0.38)	(0.45)
LogMB	-0.00120	0.00159	0.000252	0.000714	0.0591	0.0816**
	(-0.23)	(0.68)	(0.21)	(0.59)	(1.59)	(2.25)
Growth	0.00704	0.0103***	0.00147	0.00137	-0.0692	-0.0581
	(0.89)	(2.85)	(0.79)	(0.73)	(-1.20)	(-1.03)
ROA	0.149	0.0167	-0.166***	-0.132***	-7.311***	-6.630***
	(0.84)	(0.20)	(-3.97)	(-3.12)	(-5.70)	(-5.22)
Age	-0.000373***	-0.0000686	-0.0000639**	-0.0000300	0.00112	0.00175*
	(-2.88)	(-1.08)	(-2.09)	(-0.92)	(1.19)	(1.78)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Time effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs	499	499	499	499	499	499
Adjusted R^2	0.00761	0.0275	0.124	0.150	0.0993	0.161
F Stat	1.477	2.389	9.819	9.689	7.865	10.40

Table 3 Real earnings management and Abnormal Trading Volume Prior SEO

This table presents the result of testing the effects of real earnings management on abnormal trading volume prior SEO. The dependent variable is abnormal trading volume prior SEO, which is calculated using standard event study method. *AbRev*, *AbCogs* and *AbDisp* are the measures for real earnings management. *Size* is the nature logarithm of firm's market capitalization . *Growth i*s percentage change of total assets from last period. l*ogMB* is the logarithm of firms' market value divided by its book value in the most recent quarter. *Cash* is Cash and short-term investment. *Roa* is return on assets. *Uranking* is the underwriter reputation. *SeqREIT* is constructed as the current SEO sequence regarding the REIT itself to account for the clustering and frequency of SEO. *Age* is the number of years between the SEO year and the IPO year to measure the stage in firm life cycle. *InfoAs* is the abnormal return around earning announcement releases as a proxy for information asymmetry. *Sentiment* is investors' sentiment index constructed from University of Michigan's Consumer Sentiment Index, using the methodology described in Lemmon and Portniaguina (2006)..*, ** and *** represents the 10%, 5% and 1% significance level respectively. T-statistics are included in parentheses.

		Abnormal Trading Prior SEO(AV)				
	Predicted Signs	Model 1	Model 2	Model 3	Model 4	Model 5
ABCFO	-		-6.419**			-7.738***
			(-2.38)			(-2.77)
ABEXP	+			10.79***		14.88***
				(2.87)		(3.99)
ABDISP	-				-3.425***	-3.689***
					(-4.17)	(-4.57)
Cash		0.0576***	0.0566***	0.0565***	0.0557***	0.0550***
		(4.00)	(3.95)	(3.76)	(3.75)	(3.79)
Growth		-0.0870	-0.0683	-0.153	-0.176	-0.132
		(-0.60)	(-0.47)	(-0.87)	(-1.01)	(-0.77)
ROA		0.138	0.0800	0.548	-0.449	0.105
		(0.08)	(0.05)	(0.32)	(-0.27)	(0.06)
Age		0.00235	0.00236	0.00380	0.00349	0.00486
		(0.77)	(0.78)	(1.15)	(1.08)	(1.52)
SeqREIT		0.0142**	0.0125**	0.0151**	0.0126*	0.0120*
		(2.31)	(2.04)	(2.30)	(1.94)	(1.87)
Uranking		0.0247	0.0214	0.0349*	0.0288	0.0360**
		(1.44)	(1.25)	(1.89)	(1.59)	(2.01)
InfoAs		1.868***	1.742***	1.920***	1.797***	1.682***
		(3.35)	(3.13)	(3.28)	(3.10)	(2.96)
Sentiment		0.0184***	0.0181***	0.0168***	0.0168***	0.0153***
		(4.39)	(4.33)	(3.83)	(3.88)	(3.60)
Constant		Yes	Yes	Yes	Yes	Yes
Time effect		Yes	Yes	Yes	Yes	Yes
Number of Obs		499	499	499	499	499
Adjusted R^2		0.202	0.210	0.218	0.236	0.270
F Stat		13.07	12.46	11.80	12.98	12.99

Table 4 Real earnings management and PreSEO valuation

This table presents the results of testing the relationship between stock mispricing prior issuance and real earnings management activities. Dependent variable is the mispricing level (*PreMis*) prior SEO issuance. *AbRev*, *AbCogs* and *AbDisp* are the measures for real earnings management. *Size* is the nature logarithm of firm's market capitalization . *Growth i*s percentage change of total assets from last period. l*ogMB* is the logarithm of firms' market value divided by its book value in the most recent quarter. *Cash* is Cash and short-term investment. *Roa* is return on assets. *Uranking* is the underwriter reputation. *SeqREIT* is constructed as the current SEO sequence regarding the REIT itself to account for the clustering and frequency of SEO. *Age* is the number of years between the SEO year and the IPO year to measure the stage in firm life cycle. *InfoAs* is the abnormal return around earning announcement releases as a proxy for information asymmetry. *Sentiment* is investors' sentiment index constructed from University of Michigan's Consumer Sentiment Index, using the methodology described in Lemmon and Portniaguina (2006)..*, ** and *** represents the 10%, 5% and 1% significance level respectively. T-statistics are included in parentheses.

Pre SEO Stock Mispricing

	Predicted Signs	Model 1	Model 2	Model 3	Model 4	Model 5
ABCFO	-		-2.370***			-2.293***
			(-2.77)			(-2.60)
ABEXP	+			1.903**		2.100**
				(2.21)		(2.43)
ABDISP	-				-3.754***	-2.790**
					(-3.04)	(-2.21)
Cash		0.0237***	0.0206***	0.0225***	0.0237***	0.0193***
		(3.24)	(2.80)	(3.07)	(3.26)	(2.64)
Growth		-0.0502	-0.0913	-0.0910	-0.0754	-0.154
		(-0.07)	(-0.12)	(-0.12)	(-0.10)	(-0.20)
ROA		19.83	19.52	19.23	31.56*	27.59
		(1.06)	(1.05)	(1.03)	(1.67)	(1.47)
Age		0.0113	0.00814	0.0122	0.0152	0.0121
		(0.71)	(0.51)	(0.76)	(0.96)	(0.77)
SeqREIT		0.132***	0.130***	0.128***	0.123***	0.118***
		(4.13)	(4.08)	(4.02)	(3.86)	(3.75)
Uranking		-0.0288	-0.0250	-0.0288	-0.0459	-0.0379
		(-0.33)	(-0.29)	(-0.33)	(-0.53)	(-0.44)
InfoAs		-3.836	-3.135	-4.246	-4.087	-3.798
		(-1.35)	(-1.11)	(-1.50)	(-1.45)	(-1.36)
Sentiment		0.0478**	0.0272	0.0471**	0.0387*	0.0204
		(2.23)	(1.21)	(2.21)	(1.81)	(0.91)
Constant		Yes	Yes	Yes	Yes	Yes
Time effect		Yes	Yes	Yes	Yes	Yes
Number of Obs		499	499	499	499	499
Adjusted R^2		0.0912	0.105	0.0995	0.109	0.127
F Stat		5.313	5.603	5.321	5.765	5.807

Table 5(A) Real earnings management and SEO discounting

This table presents the result of testing the effects of real earnings management on SEO discounting. The dependent variable is discounting, which is the percentage change in the price between the offer price and the closing price of the day prior SEO issuance. *AbRev*, *AbCogs* and *AbDisp* are the measures for real earnings management. *Size* is the nature logarithm of firm's market capitalization . *Growth i*s percentage change of total assets from last period. l*ogMB* is the logarithm of firms' market value divided by its book value in the most recent quarter. *Cash* is Cash and short-term investment. *Roa* is return on assets. *Uranking* is the underwriter reputation. *SeqREIT* is constructed as the current SEO sequence regarding the REIT itself to account for the clustering and frequency of SEO. *Age* is the number of years between the SEO year and the IPO year to measure the stage in firm life cycle. *InfoAs* is the abnormal return around earning announcement releases as a proxy for information asymmetry. *Sentiment* is investors' sentiment index constructed from University of Michigan's Consumer Sentiment Index, using the methodology described in Lemmon and Portniaguina (2006)..*, ** and *** represents the 10%, 5% and 1% significance level respectively. T-statistics are included in parentheses.

SEO Discounting

	Predicted Signs	Model 1	Model 2	Model 3	Model 4	Model 5
ABCFO	+		0.541**			0.425*
			(2.43)			(1.94)
ABEXP	-			-0.923***		-1.079***
				(-3.60)		(-4.15)
ABDISP	+				0.270***	0.351***
					(2.70)	(3.47)
Cash		-0.0779	-0.0821	-0.0766	-0.0564	-0.0518
		(-1.14)	(-1.20)	(-1.13)	(-0.82)	(-0.77)
Growth		-0.00871	-0.0107	-0.0118	-0.00840	-0.0135
		(-0.69)	(-0.84)	(-0.94)	(-0.67)	(-1.09)
ROA		0.115	0.136	-0.0651	0.183	0.00928
		(0.68)	(0.80)	(-0.37)	(1.08)	(0.05)
Age		0.000180	0.000227	0.0000674	0.000175	0.0000781
		(0.86)	(1.08)	(0.32)	(0.84)	(0.38)
SeqREIT		0.000713	0.000405	0.000757	0.000829	0.000673
		(0.93)	(0.52)	(1.00)	(1.09)	(0.89)
Uranking		-0.000389	-0.000236	-0.000348	-0.000463	-0.000316
		(-0.26)	(-0.16)	(-0.24)	(-0.31)	(-0.22)
InfoAs		0.108**	0.0958**	0.111**	0.102**	0.0954**
		(2.23)	(1.98)	(2.33)	(2.13)	(2.02)
Sentiment		0.000911***	0.000904***	0.000901***	0.00111***	0.00115***
		(2.83)	(2.82)	(2.83)	(3.37)	(3.57)
Constant		Yes	Yes	Yes	Yes	Yes
Time effect		Yes	Yes	Yes	Yes	Yes
Number of Obs		508	508	508	508	508
Adjusted R^2		0.0278	0.0373	0.0505	0.0398	0.0782
F Stat		2.609	2.964	3.699	3.104	4.586

Table 5(B) Real earnings management and SEO discounting (Probit Model)

This table presents the result of testing the effects of real earnings management on SEO discounting. The dependent variable is binary variable, indicating if the firm sets the offer price at the market price.. *AbRev, AbCogs* and *AbDisp* are the measures for real earnings management. *Size* is the nature logarithm of firm's market capitalization . *Growth i*s percentage change of total assets from last period. l*ogMB* is the logarithm of firms' market value divided by its book value in the most recent quarter. *Cash* is Cash and short-term investment. *Roa* is return on assets. *Uranking* is the underwriter reputation. *SeqREIT* is constructed as the current SEO sequence regarding the REIT itself to account for the clustering and frequency of SEO. *Age* is the number of years between the SEO year and the IPO year to measure the stage in firm life cycle. *InfoAs* is the abnormal return around earning announcement releases as a proxy for information asymmetry. *Sentiment* is investors' sentiment index constructed from University of Michigan's Consumer Sentiment Index, using the methodology described in Lemmon and Portniaguina (2006)..*, ** and *** represents the 10%, 5% and 1% significance level respectively. T-statistics are included in parentheses.

SEO Offering at the market price(=1)

	Predicted Signs	Model 1	Model 2	Model 3	Model 4	Model 5
AbRev	-		-15.23**			-15.95**
			(-2.35)			(-2.47)
AbCogs	+			7.150**		7.181**
				(2.13)		(2.11)
AbDisp	-				-6.645**	-6.610**
					(-2.06)	(-2.04)
Cash		0.230	0.239	0.522	0.395	0.717
		(0.12)	(0.13)	(0.27)	(0.21)	(0.37)
Growth		0.266	0.364	0.225	0.233	0.300
		(0.75)	(1.01)	(0.63)	(0.66)	(0.82)
Roa		-0.301	-2.079	1.621	-2.296	-2.361
		(-0.06)	(-0.43)	(0.33)	(-0.47)	(-0.46)
Age		-0.000350	-0.0000370	0.000139	-0.0000778	0.000767
		(-0.06)	(-0.01)	(0.02)	(-0.01)	(0.13)
SeqREIT		0.0417**	0.0426**	0.0378**	0.0338*	0.0310
		(2.18)	(2.22)	(1.96)	(1.73)	(1.58)
Uranking		-0.00859	-0.0106	-0.00842	-0.0125	-0.0150
		(-0.20)	(-0.25)	(-0.20)	(-0.29)	(-0.35)
InfoAs		0.137	0.143	0.153	0.103	0.0661
		(0.10)	(0.10)	(0.11)	(0.07)	(0.05)
Sentiment		0.0136	0.0141	0.00868	0.0185*	0.0142
		(1.47)	(1.53)	(0.91)	(1.94)	(1.44)
Number of Obs		508	508	508	508	508
Pseudo R^2		0.0129	0.0226	0.0202	0.0198	0.0372

Table 6 Real earnings management and SEO long run performance

This table presents the effects of real earnings management on SEO long run adjusted return. The dependent variable is the post SEO adjusted return in 3 month, 6month and 12 month *AbRev, AbCogs* and *AbDisp* are the measures for real earnings management. *Size* is the nature logarithm of firm's market capitalization . *Growth i*s percentage change of total assets from last period. l*ogMB* is the logarithm of firms' market value divided by its book value in the most recent quarter. *Cash* is Cash and short-term investment. *Roa* is return on assets. *Uranking* is the underwriter reputation. *SeqREIT* is constructed as the current SEO sequence regarding the REIT itself to account for the clustering and frequency of SEO. *Age* is the number of years between the SEO year and the IPO year to measure the stage in firm life cycle. *InfoAs* is the abnormal return around earning announcement releases as a proxy for information asymmetry. *Sentiment* is investors' sentiment index constructed from University of Michigan's Consumer Sentiment Index, using the methodology described in Lemmon and Portniaguina (2006)..*, ** and *** represents the 10%, 5% and 1% significance level respectively. T-statistics are included in parentheses.

Long Run Risk Adjusted Stock Return

	3 Month		6 Month		12 Month	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
ABCFO		0.870**		1.007*		1.905**
		(1.97)		(1.73)		(2.42)
ABEXP		-1.101***		-1.735***		-2.143***
		(-2.92)		(-3.47)		(-3.14)
ABDISP		0.764***		0.917**		1.146**
		(2.69)		(2.43)		(2.25)
Cash	0.314	0.321*	0.548**	0.544**	0.818**	0.833**
	(1.60)	(1.65)	(2.11)	(2.12)	(2.33)	(2.40)
Growth	-0.0545	-0.0452	-0.0499	-0.0363	-0.110*	-0.0939
	(-1.48)	(-1.25)	(-1.03)	(-0.76)	(-1.67)	(-1.45)
ROA	0.542	0.755	0.196	0.326	0.252	0.461
	(1.11)	(1.44)	(0.30)	(0.47)	(0.28)	(0.48)
Age	0.00112*	0.000994	0.00172**	0.00162**	0.00203*	0.00190*
	(1.83)	(1.63)	(2.11)	(2.01)	(1.84)	(1.74)
SeqREIT	-0.000474	0.000812	0.000991	0.00281	0.00199	0.00451
	(-0.24)	(0.41)	(0.38)	(1.07)	(0.56)	(1.27)
Uranking	0.000566	0.000484	-0.00352	-0.00265	0.00162	0.00108
	(0.13)	(0.11)	(-0.62)	(-0.45)	(0.20)	(0.14)
InfoAs	0.565***	0.552***	0.842***	0.818***	0.937***	0.906***
	(4.04)	(3.99)	(4.54)	(4.47)	(3.74)	(3.66)
Sentiment	-0.00209**	-0.00165*	-0.00418***	-0.00366***	-0.00346**	-0.00259*
	(-2.27)	(-1.78)	(-3.43)	(-2.99)	(-2.09)	(-1.75)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Time effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs	508	508	508	508	508	508
Adjusted R^2	0.0488	0.0794	0.0701	0.102	0.0473	0.0799
F Stat	4.219	4.921	5.730	6.188	4.069	4.910