Property Portfolio Composition and Earnings Management for Listed Property Portfolios

Executive Summary. *In this paper, we investigate how real estate portfolio composition impacts earnings management (EM) of New Zealand listed property portfolios (NZ-LPPs). We employ a panel dataset containing accounting and property data for NZ-LPPs. The findings include: (1) the office property ratio of the real estate portfolio provides the highest incentive for LPPs to engage in EM; (2) LPPs with a higher ratio of industry are less likely to use accrual EM and real EM approaches based on property transactions; and (3) LPPs with a hospital focus prefer accrual EM, while LPPs with a retail focus prefer long-term accrual EM and sales manipulation.*

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Earnings management (EM) is a general designation for managing approaches used by listed firms' managers to influence the way financial information is disclosed to the public (Dechow, Ge, and Schrand, 2010). A substantial amount of research has confirmed that EM activities incorporate various factors other than the fundamental conditions of the listed firms in disclosed financial information. Therefore, the use of EM by listed firms reduces the earnings quality, which reflects the degree to which disclosed financial information reflects underlying economic conditions (Dechow, Ge, and Schrand, 2010). Thus, the research on EM can help the market and regulators to better interpret disclosed financial information, as well as improve market transparency and stability (Jones, 1991; Richardson, 2000; McKee, 2005).

The EM approaches used by listed firms vary across different industries (Dechow, Sloan, and Sweeney, 1995). Compared with other listed firms, real estate investment trusts (REITs) are special in terms of financial information disclosure behavior because of their unique characteristics; for example, the close connections they have with property markets (Capozza and Lee, 1995; Ertugrul and Giambona, 2011; Liao, Dong, and Young, 2011) and the restrictive regulatory environment (Edelstein, Liu, and Tsang, 2007. Therefore, the special market performance and financial disclosure behavior of REITs has received increased attention from real estate and accounting scholars. Moreover, research by Gyourko and Nelling (1996), Hedander and Song (2005), and Dong and Li (2012) confirmed that REITs with different percentages of property types (retail, office, industry, and hospitality) in their property portfolio exhibit different

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financial performance, and listed firms' financial performance is significantly correlated with its financial disclosure behavior according to the accounting literature (Petroni, 1992; Keating and Zimmerman, 1999; Doyle, Ge, and McVay, 2007). Therefore, in this study we assume that REITs with different property portfolio composition should use different EM approaches. We test this hypothesis empirically by using data from New Zealand Listed Property Portfolios (NZ-LPPs), which are the equivalent of REITs.[1] The reason we only focus on NZ-LPPs is that detailed property portfolio information on REITs is not currently available in other markets such as the United States and Australia.

According to the empirical test, the office property ratio in the property portfolio provides the highest incentive for LPPs to engage in EM (both accrual-based EM and real EM), thus NZ-LPPs with higher ratios of office property in their portfolio have lower earnings quality. LPPs with a higher ratio of industry property are less likely to use accrual EM and real EM based on property transactions and valuation. LPPs focused on hospital properties prefer accrual EM over real EM, whereas LPPs focused on retail property chose long-term accrual EM and sales manipulation over other EM approaches. These findings provide the first empirical research results demonstrating how EM approaches used by REITs are influenced by differences in property portfolio composition. The findings also provide further insights into how earnings quality and financial behavior vary across listed property portfolios and listed firms specialized in different property types. This research enriches the literature concerning the financial disclosure behavior of listed property portfolios (REITs), and provides an important reference for investors, auditors, and regulators to improve their interpretation of disclosed financial information.

Literature Review and Hypothesis Development

Earnings Management Used by REITs

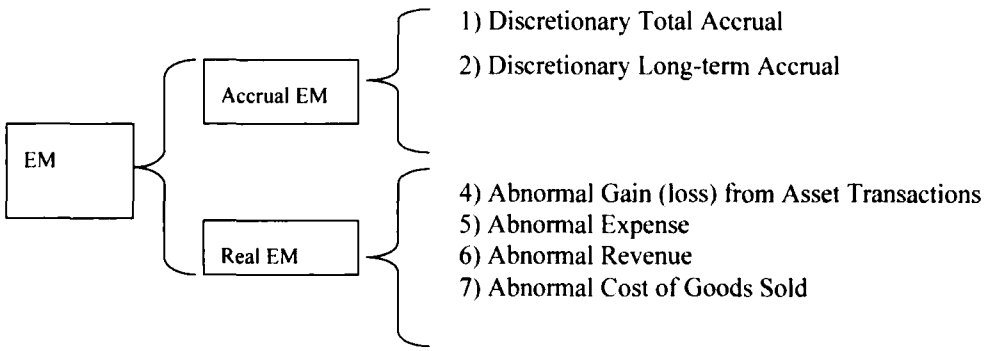
Earnings management was defined by Healy and Wahlen (1998) as: "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers."

The definition and estimation of EM in the context of REITs is special. First, the motivation that REITs engage in EM include not only the equity incentives, but also the need for complying with the requirements of REIT regimes such as the dividend pay-out ratio requirement (Ambrose and Bian, 2010; Zhu, Ong, and Yeo, 2010). Furthermore, not only the earnings and Fund From Operation (FFO), but also the leverage ratio, income composition, and asset composition on the financial report is of concern in the EM research of REITs, because they are suspected to be manipulated by using EM to meet the requirements of REIT regimes.[2] Moreover, the EM approaches used by REITs are different from those used by other listed firms because REITs need to consider the unique features of the real estate industry (Liao, Dong, and Young, 2011). For example, Graham and Knight (2000) confirmed that the manipulation of long-term accrual was more significant in REITs than in other industries, because the value of real estate depreciation for REITs was large and provides REITs with enough space for EM.

EM approaches used by REITs include two categories: accrual EM and real EM. Accrual EM is defined as choosing accounting principles or standards to manage the accrual items on the financial report (Dechow, Ge, and Schrand, 1995), while real EM refers to exercising discretion in operation, investment, and financing activities to influence how financial information is disclosed (Roychowdhury, 2006).[3]

Moreover, accrual EM can be further deconstructed into long-term accrual EM and current accrual EM, which are based on managing long-term accrual and current accrual items respectively (Dechow, 1994; Dechow and Dichev, 2002). Compared to other listed firms, REITs have greater long-term accruals in the form of real estate asset depreciation, and thus long-term accrual EM should be

Exhibit 1
EM Measurements for REITs Investigated in this Research



more important for REITs compared to current accrual EM (Guay and Sidhu, 2001; Zhu, Ong, and Yeo, 2010). Therefore, in this paper, we deconstruct the total EM into current accrual EM and long-term accrual EM, and investigate the impact of property portfolio on long-term accruals EM specifically.[4]

Furthermore, researchers have identified the three most important EM approaches used by REITs. These real EM approaches include controlling the expense associated with generally administration and property renovation, which is measured as abnormal expense (Edelstein, Liu, and Tsang, 2007),[5] conducting unnecessary property asset transactions and controlling the timing of property transactions, which are measured as abnormal gain or loss from asset transactions (Bartov, 1993; Gunny, 2010), and engaging in unnecessary promotion activities, which is measured as abnormal revenue and abnormal cost of goods sold (Edelstein, Liu, and Tsang, 2007; Ambrose and Bian, 2010; Anglin, Edelstein, Gao, and Tsang, 2012). Exhibit 1 illustrates the classification of the seven EM measurements we examine.

Property Portfolio of REITs

Researchers use mainstream financial and accounting theories to examine the financial information disclosure behavior of REITs (Zhu, Ong, and Yeo, 2010; Liao, Dong, and Young, 2011). Nevertheless, there is very limited literature concerning the impacts of property factors on EM used by REITs. Liao, Dong, and Young (2011) incorporate property factors in their model such weighted average leased term (WALT) and average vacancy ratio in the explanation of EM used by NZ-LPPs. WALT is found to be significantly and negatively correlated with accrual EM. Zhu, Ong, and Yeo (2010) and Anglin, Edelstein, Gao, and Tsang (2012) investigate the impacts of corporate government structure and seasoned equity offerings on the EM used by REITs. They classify REITs into different types such as industry/office, residential, lodging, and retail; these variables are incorporated into their empirical models as controlling variables. However, the way in which they utilize dummy variables to indicate the REIT type is not completely accurate in reflecting the impact of the property portfolio composition on EM, because most of the REITs are diversified and have investments in different types of properties. More importantly, the empirical results concerning the REIT types are not reported. Thus the aim of this research is to analyze and provide solutions to bridge this knowledge gap by analyzing percentages of the different types of property in the portfolio. We analyze the impact of portfolio composition as it relates to the EM approach used.

Listed firms with better return performance have better financial disclosure quality and are less likely to engage in accrual-based EM, because firms with weak performance are more highly motivated to use EM to avoid reporting losses (Petroni, 1992; Keating and Zimmerman, 1999; Doyle, Ge, and McVay, 2007). Moreover, REITs are different from stock and bonds in terms of financial market performance because their risk-return characteristics are tightly connected to the property

market (Capozza and Lee, 1995; Ertugrul and Giambona, 2011). Furthermore, Dong and Li (2012) investigate the market performance of NZ-LPPs from 2002 to 2010 by using the Sharpe ratio to measure their risk-return performance. They find that industry properties have the best performance from 2002 to 2010 in New Zealand, followed by hospitality, retail, and office. Based on the literature referred to above, we developed Hypothesis 1.

Hypothesis 1: Ceteris paribus, the office property ratio of the portfolio constitutes the greatest incentive for LPPs to engage in accrual-based EM, followed by retail, hospitality, and industry.

Moreover, long-term accrual EM approaches are based on using discretionary judgment in choosing accounting methods to deal with long-term accrual items, such as depreciation, on financial reports (Tsang, 2007). For a LPP, one specific managerial judgment of changing accounting methods in dealing with long-term accrual usually has different impacts for each individual property in its portfolio. Therefore, if a LPP has lots of individual properties, it will be very difficult to forecast the actual results of using long-term accrual EM approaches, which are its combined impacts on each individual property. Thus, long-term accrual EM is more practical for LPPs with fewer properties in their portfolios, as well as higher individual property values.

Exhibit 2 shows that office and retail properties have the greatest average value for individual properties, followed by hospitality and industry.[6] Combined with the logic that LPPs with higher individual property values are more likely to engage in long-term accrual EM, it is assumed that:

Exhibit 2
Value and Number of Properties in New Zealand across Different Sectors in 2012

Sector	Properties	Value (NZD '000)	Average Value for Individual Property (NZD '000)
Industry	133	624,745	4,697.33
Office	92	2,173,186	23,621.58
Retail	55	807,473	14,681.32
Hospitality	17	230,471	13,557.12

Hypothesis 2: Ceteris paribus, compared to industrial and hospital properties in a portfolio, office and retail properties induce more long-term accrual-based EM.

Compared with industry and hospitality properties, the management of retail and office property is associated with higher expenses due to renovation, facility improvement, tenant management, and advertisement (Myer and Webb, 1994; Jones, 1995; Capozza and Lee, 1995; Ho, Newell, and Walker, 2005). Therefore, real EM approaches based on discretionary management over expenses should be used less frequently in the management of industrial and hospital properties.

Hypothesis 3: Ceteris paribus, real EM through discretionary expenses should be used less frequently by LPPs with higher industrial and hospital type property ratios in their portfolios.

According to Dong and Li (2012), the office property held by NZ-LPPs is mainly located in the CBD of major cities such as Auckland, Wellington, and Christchurch, and exhibits highest return and value volatility in the four types of properties over the past 12 years. Moreover, the average value for individual property is also highest for office property as Exhibit 2 shows. Thus transactions and revaluation of office property could provide more space for LPP managers to manage the presentation of financial reports.

Hypothesis 4: Ceteris paribus, a higher office ratio in the portfolio should provide higher incentives for LPPs to engage in real EM through discretionary property transactions (abnormal gain or loss from property transactions).

Real EM through sales manipulation can be achieved by using an unnecessary discount to attract customers, so the gross income can be significantly improved in the short term to avoid reporting losses or to reach analyst forecasts, at the cost of sacrificing the long-term benefits (Edelstein, Liu, and Tsang, 2009; Gunny, 2010). For property markets on which information is efficiently transmitted, the tenant attraction to discount promotion depends on the competitiveness of same-type property space providers and the number of potential

tenants. Take the example of office property. The discount promotion for office property rental business is effective because there are a huge number of potential tenants who have lots of property space to choose from so they are very sensitive to price change. Furthermore, real EM through a sales manipulation approach is not effective and less likely to be used in managing hospital properties, because the number of hospital properties and tenants is limited in New Zealand.

Hypothesis 5: Ceteris paribus, the LPPs with a higher hospital property ratio in their portfolio use fewer real EM approaches based on sales manipulation.

In Exhibit 3 we summarize our hypotheses by ranking the degree to which different property type ratios encourage LPPs to use different EM approaches. For example, "Office > Retail" for "Total Discretionary Accrual" signifies that compared to a retail ratio, an office ratio provides more incentive for LPPs to use accrual EM approaches.

Methodology

Accrual-based Earnings Management

We employ modified Jones models (Dechow, Sloan, and Sweeney, 1995) to estimate the accrual EM for NZ-LPPs:

$$TA_{i,t}/A_{i,t-1} = \alpha_1 + \beta_1 \times (\Delta REV_{i,t}/A_{i,t-1}) + \beta_2 \times (PPE_{i,t}/A_{i,t-1}) + \varepsilon_{i,t}, \quad (1)$$

Exhibit 3
Summary of Hypotheses

EM Measurements	Ranking of EM Incentive of Different Property Type Ratio
Total Discretionary Accrual (H.1)	Office > Retail > Hospital > Industry
Long-term Discretionary Accrual (H.2)	Office > Retail > Hospital > Industry
Discretionary Expense (H.3)	Office, Retail > Industry, Hospital
Discretionary Change of Investment Property (H.4)	Office > Retail, Industry > Hospital
Discretionary Revenue (H.5)	Retail, Office, Industry > Hospital
Discretionary COGS (H.5)	Retail, Industry, Office > Hospital

where $TA_{i,t}$ is total accrual for LPT i in year t, $A_{i,t-1}$ represents total assets, ΔREV is the change of revenue, and PPE represents plant, property, and equipment assets. In equation (1), the total accrual (TA), which is calculated as the difference between net income and cash flow from operations, will be used as a dependent variable to estimate the coefficients α_1, β_1, and β_2, which are then incorporated into equation (2) to calculate the non-discretionary accrual (NDA):

$$NDA_{i,t}/A_{i,t-1} = \alpha_1 + \beta_1 \times (\Delta REV_{i,t} - \Delta REC_{i,t})/A_{i,t-1} + \beta_2 \times (PPE_{i,t}/A_{i,t-1}), \quad (2)$$

where ΔREC represents the change of account receivables. Then the discretionary total accrual (TDA) is computed as the difference between total accrual and non-discretionary accrual.

Moreover, discretionary current accrual as measurement of EM based on current accrual is estimated by models developed by Dechow and Dichev (2002) and DeFond and Francis (2005). In this research, the total current accrual is computed by using the equation below:

$$TCA_{i,t} = \Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta STDEBT_{i,t}, \quad (3)$$

where TCA represents current accruals, ΔCA represents change of current asset compared to last period, ΔCL is the change in current liabilities, $\Delta Cash$ represents change of cash, and $\Delta STDEBT$ is the change of debt in current liabilities. Then long-term accrual is calculated as the difference between total accrual and total current accrual:

$$TLA_{i,t} = TA_{i,t} - TCA_{i,t}. \quad (4)$$

The TLA represents long-term accrual. Furthermore, discretionary long-term accrual as measurement of EM based on long-term accruals is estimated by using the methods developed from Jones (1991) and Dechow (1995). The long-term accrual scaled by last-period total asset is used as the dependent variable i to estimate the Discretionary Long-Term Accrual (DLA), which is the error term

Exhibit 4
Summary of Variables for EM Measurements Estimation

Variable	Obs.	Mean	Std. Dev.	Min	Max
TA	103	−26.82	50.80	−237.48	10.16
A	103	702.11	591.22	102.40	2,159.70
REV	103	53.65	68.01	−168.75	367.89
PPE	75	694,070	571,476	30,530	2,060,580
ΔREC	94	0.64	12.14	−47.21	64.59
ΔCA	94	−0.25	46.28	−230.08	214.55
ΔCL	94	0.38	81.11	−382.45	389.43
ΔCash	88	0.17	14.56	−50.77	114.95
ΔSTDEBT	88	15.79	105.19	−100.00	389.07
TCA	94	3.91	74.35	−272.44	386.21
TLA	94	−33.12	94.33	−487.55	269.62
EXP	94	35.38	32.73	3.50	138.37
Q	95	0.59	0.19	0.23	1.16
IP	102	645.40	593.32	0.00	2,076.46
COGS	83	14,110.04	14,978.55	99.00	60,112.00

Exhibit 5
EM Measurement Estimating Models

	Equation (1)	Equation (5)	Equation (6)	Equation (7)	Equation (8)	Equation (9)
	OLS	OLS	Fixed Effect	OLS	OLS	Fixed Effect
ΔREV/L1.A	−0.044	−0.249	0.017	−1.001	0.552	0.012
	(−0.69)	(−1.15)	(0.58)	(−1.45)	(8.26)	(0.69)
PPE/L1.A	−0.064	−0.037				
	(−3.00)	(−0.51)				
1/L1.A			−2.815	−29.092	−0.409	−1.880
			(−1.54)	(−1.85)	(−0.19)	(−1.81)
REV/L1.A			0.038	2.272		0.021
			(0.94)	(2.59)		(0.92)
Q			−0.002	0.150	0.118	−0.007
			(−0.16)	(0.67)	(4.42)	(−0.85)
_cons	0.029	−0.004	0.053	−0.130	0.015	0.026
	(1.37)	(−0.05)	(6.22)	(−1.00)	(0.87)	(5.31)
Obs.	70	70	75	75	75	74
Groups			9			9
F(2, 67)	5.120	0.900	1.600	4.090	37.310	1.740
Prob > F	0.009	0.413	0.186	0.005	0.000	0.160
R^2	0.133	0.026	0.037	0.189	0.612	0.042
Adj. R^2	0.107	−0.003		0.143	0.596	
P for individual effects test	0.203	0.940	0.001	0.671	0.269	0.000

Note: The values in parentheses are *t*-stats.

Exhibit 6

Summary of EM Measurements and Explanatory Variables in Equation (10)

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Independent Variables					
TDA	70	0.031	0.027	0.001	0.134
RTDA	70	88.295	137.877	7.454	762.170
DLA	70	0.092	0.105	0.000	0.362
RDLA	70	102.957	432.015	2.764	3,587.725
DExpense	75	0.013	0.011	0.000	0.053
RDExpense	75	298.990	492.558	18.779	2,386.142
DCIP	75	0.166	0.248	0.001	1.251
DRevenue	75	0.029	0.028	0.001	0.135
RDRevenue	75	121.541	223.558	7.425	1,330.247
DCOGS	74	0.009	0.008	0.000	0.042
Property Portfolio Composition Variables					
Office ratio	73	0.409	0.346	0.000	1.000
Retail ratio	73	0.168	0.217	0.000	0.650
Industry ratio	73	0.227	0.330	0.000	1.000
Hospital ratio	73	0.150	0.359	0.000	1.000
Office2	73	0.286	0.344	0.000	1.000
Retail2	73	0.075	0.116	0.000	0.423
Industry2	73	0.159	0.313	0.000	1.000
Hospital2	73	0.150	0.358	0.000	1.000
Controlling Variables					
Occupancy Rate	82	0.974	0.023	0.900	1.000
Log (1-Occupancy Rate)	82	−3.504	0.634	−4.605	−2.207
WALT	80	5.751	2.040	2.750	14.600
Leverage Rate	103	0.392	0.096	0.200	0.621
Gross Income Change	74	0.092	0.213	−0.571	0.899
Return On Assets	103	0.028	0.054	−0.137	0.211
Assets Total	103	702.111	591.218	102.400	2,159.704

Exhibit 7

Correlation Coefficients of Independent Variables for Equation (10)

Variable	*Office Ratio*	*Retail Ratio*	*Industry Ratio*	*Hospital Ratio*	*Others Ratio*	*Occupancy Rate*	*WALT*	*Leverage Rate*	*Gross Income Growth*	*Return on Assets*	*Total Assets*
Office ratio	1.00										
Retail ratio	−0.02	1.00									
Industry ratio	−0.50	−0.30	1.00								
Hospital ratio	−0.46	−0.29	−0.27	1.00							
Others ratio	−0.06	−0.02	0.15	−0.23	1.00						
Occupancy Rate	−0.38	−0.06	0.28	0.08	0.10	1.00					
WALT	−0.34	−0.41	−0.18	0.86	−0.23	0.02	1.00				
Leverage ratio	0.05	0.49	−0.19	−0.12	−0.10	−0.03	−0.24	1.00			
Gross Income Growth	0.06	0.03	−0.04	−0.06	0.25	−0.07	0.00	−0.11	1.00		
Return on Assets	−0.06	−0.15	0.08	0.02	0.04	0.19	0.14	−0.38	0.20	1.00	
Total Assets	0.35	0.49	−0.28	−0.41	0.16	−0.10	−0.35	0.50	0.07	−0.15	1.00

in equation (5). The error term cannot be explained by the fundamental conditions of the firms but discretionary management approaches:

$$TLA_{i,t}/A_{i,t-1} = \alpha_1 + \beta_1 \times (\Delta REV_{i,t}/A_{i,t-1}) + \beta_2 \times (PPE_{i,t}/A_{i,t-1}) + \varepsilon_{i,t}. \quad (5)$$

Real Earnings Management

This research follows Edelstein, Liu, and Tsang (2007), Cohen and Zarowin (2008), Gunny (2010), and Anglin, Edelstein, Gao, and Tsang (2012) to estimate measurements of real earnings management:

$$EXP_{i,t}/A_{i,t-1} = \alpha_1 + \beta_1 \times (1/A_{i,t-1}) + \beta_2 \times (REV_{i,t}/A_{i,t-1}) + \beta_3 \times (\Delta REV_{i,t}/A_{i,t-1}) + \beta_4 \times Q_{i,t} + \varepsilon_{i,t}, \quad (6)$$

$$IP_{i,t}/A_{i,t-1} = \alpha_1 + \beta_1 \times (1/A_{i,t-1}) + \beta_2 \times REV_{i,t}/A_{i,t-1} + \beta_3 \times \Delta REV_{i,t}/A_{i,t-1} + \beta_4 \times Q_{i,t} + \varepsilon_{i,t}, \quad (7)$$

$$REV_{i,t}/A_{i,t-1} = \alpha_1 + \beta_1 \times (1/A_{i,t-1}) + \beta_2 \times Q + \beta_3 \times (\Delta REV_{i,t}/A_{i,t-1}) + \varepsilon_{i,t}, \quad (8)$$

and

$$COGS_{i,t}/A_{i,t-1} = \alpha_1 + \beta_1 \times (1/A_{i,t-1}) + \beta_2 \times (REV_{i,t}/A_{i,t-1}) + \beta_3 \times Q + \beta_4 \times (\Delta REV_{i,t}/A_{i,t-1}) + \varepsilon_i, \quad (9)$$

where *EXP* represents expenses, *Q* represents Tobin's Q, *IP* represents investment property, *REV* is revenue, and *COGS* represents cost of goods sold. The predicted error terms are interpreted as real earnings management measurements such as abnormal expense (*DEXP*), abnormal change of investment property (*DIP*), abnormal revenue (*DREV*), and abnormal cost of goods sold (*DCOGS*). There are two reasons that we use data of investment property change rather than gain or loss from asset transaction, to estimate real EM through discretionary management of property asset transaction. First, the data of gain or loss from asset transactions are not available. Moreover, the item of investment property in a New Zealand context is defined as individual valuation of fixed tangible assets at the end of accounting periods; therefore, the change of investment property compared to the last period can be viewed as the proxy for results of combined forces from property transactions, development, and valuation activities, which are associated with discretionary judgments. Therefore, the abnormal variation of investment property change, which cannot be explained by fundamental operating condition of LPPs but the discretionary judgment of managers, is estimated as measurement of real EM through property transactions, development, and valuation.

How Property Portfolio Composition Influences EM

We use a fixed effect estimator to estimate the impact of property portfolio composition on EM:

$$EM\ measurements_{i,t} = \alpha_1 + \beta_1 \times \text{Property Portfolio Composition Description Variables} + \beta_2 \times \text{Controlling Variables} + \varepsilon_i. \quad (10)$$

The EM measurements represent two accrual EM and four real EM measurements: absolute value of discretionary total accrual (*TDA*), discretionary long-term accrual (*DLA*), abnormal expense (*DEXP*), abnormal change of investment property (*DIP*), abnormal revenue (*DREV*), and abnormal cost of goods sold (*DCOGS*). The property portfolio composition description variables represent the ratio of office property (office ratio), the ratio of retail property (retail ratio), the ratio of industry property (industry ratio), and the ratio of hospital property (hospital ratio). The controlling variables

Exhibit 8

Property Portfolio Composition and Accrual EM Measurements

	TDA		*RTDA*		*DLA*		*RDLA*	
	OLS	OLS	OLS	OLS	OLS	OLS	Fixed Effects	Fixed Effects
	(1)[a]	(2)	(3)	(4)	(5)	(6)	(7)[a]	(8)
Office2	0.07		−142		0.05		−2,969.32	
	(5.11)		(−1.87)		(0.81)		(−4.33)	
Retail2	0.02		−2.80		0.14		−2,888.33	
	(0.37)		(−1.13)		(0.65)		(−2.36)	
Industry2	0.04		−72.6		−0.08		820.58	
	(2.57)		(−0.94)		(−1.19)		(2.52)	
Hospital2	0.07		−120		−0.01		3,704.81	
	(3.55)		(−1.03)		(−0.05)		(0.75)	
Office ratio		0.06		−128.90		0.12		−718.67
		(2.59)		(−1.08)		(1.16)		(−1.59)
Retail ratio		−0.03		−127.50		0.12		−1,393.60
		(−0.89)		(−0.87)		(0.99)		(−2.51)
Industry ratio		0.03		−70.19		−0.01		45.43
		(1.13)		(−0.59)		(−0.08)		(0.10)
Hospital ratio		0.07		−121.8		0.07		−319.68
		(2.26)		(−0.80)		(0.56)		(−0.55)
Log (1-Occupancy)	−0.01	0.00	17.79	13.97	−0.02	−0.02	64.45	199.61
	(−1.08)	(−0.74)	(0.65)	(0.50)	(−0.81)	(−0.88)	(0.77)	(1.90)
WALT	−0.01	0.00	−2.34	−5.59	−0.01	−0.01	−4.39	6.83
	(−1.89)	(−1.36)	(−0.15)	(−0.35)	(−0.36)	(−0.56)	(−0.08)	(0.11)
Leverage Rate	0.03	0.01	−99.80	−25.41	0.04	0.04	1,172.64	845.24
	(0.74)	(0.26)	(−0.42)	(−0.11)	(0.22)	(0.20)	(1.41)	(0.92)
Gross Income Growth	0.04	0.03	−135.00	−103.10	0.05	0.05	243.49	−160.15
	(2.06)	(1.37)	(−1.40)	(−1.07)	(0.63)	(0.66)	(0.77)	(−0.44)
Return On Assets	0.03	0.03	−68.70	−77.99	0.02	0.03	238.81	205.68
	(0.49)	(0.43)	(−0.24)	(−0.26)	(0.06)	(0.13)	(0.28)	(0.18)
Total Assets	0.00	0.00	−0.02	−0.03	0.00	0.00	0.05	0.45
	(0.49)	(0.43)	(−0.24)	(−0.26)	(0.06)	(0.13)	(0.28)	(0.18)
Obs.	2.07	2.46	−0.60	−0.86	−1.79	−1.88	0.27	3.09
F-test value	56	56	56	56	56	56	56	56
Prob > F	5.28	3.48	0.94	0.72	0.83	0.90	6.75	2.22
R^2	0.00	0.00	0.51	0.70	0.61	0.54	0.00	0.03
Adj. R^2	0.54	0.44	0.17	0.14	0.16	0.17	0.21	0.00
F for Time Fixed Effects Test	0.44	0.31	−0.01	−0.05	−0.03	−0.02		
Hausman Test	1.66		1.33		1.81		6.22	5.32
							0.0005	0.0012

Notes: The values in parentheses are *t*-stats.
[a] The property type values in this column have a ranking that is different from the hypothesis.

represent the weighted average leased term (WALT), occupancy rate, leverage ratio (leverage rate), total asset size (assets total), gross income change, and return on assets. The selection of controlling variables follows the model specification from Liao, Dong, and Young (2011) and Anglin, Edelstein, Gao, and Tsang (2012).

Database Description

The financial and accounting data we use was downloaded from Compustat. The property portfolio variables were manually collected from the financial reports of NZ-LPPS. The variables used to estimate the EM measurements are summarized

Exhibit 9

Property Portfolio Composition and Real EM Measurements

	DExpense		*RDExpense*		*DCIP*		*DRevenue*		*RDRevenue*		*DCOGS*	
	Fixed Effects	OLS	OLS	OLS	OLS	OLS	Fixed Effects	OLS	OLS	OLS	Random	OLS
	(9)[a]	(10)	(11)	(12)	(13)[a]	(14)	(15)[a]	(16)	(17)	(18)	(19)[a]	(20)
Office2	−0.01		−760.4		−0.25		0.08		−172.20		0.00	
	(−0.67)		(−0.36)		(−1.66)		(1.54)		(−1.11)		(−0.39)	
Retail2	−0.06		−1,974.9		−1.02		−0.16		65.02		0.01	
	(−2.63)		(−0.33)		(−2.37)		(−1.80)		(0.15)		(1.44)	
Industry2	−0.01		1,376.4		−0.33		−0.02		−81.20		0.00	
	(−1.43)		(0.61)		(−2.04)		(−0.94)		(−0.49)		(−1.03)	
Hospital2	−0.02		−508.3		0.27		−1.11		144.70		−0.01	
	(−0.22)		(−0.15)		(1.14)		(−3.01)		(0.59)		(−2.74)	
Office ratio	0.00		992.9		−0.05		0.01		−129.6		−0.81	
	(−0.14)		(0.29)		(−0.18)		(0.46)		(−0.51)		(−1.97)	
Retail ratio	0.01		1,653.9		−0.25		−0.06		114.93		−0.69	
	(0.82)		(0.42)		(−0.85)		(−1.70)		(0.39)		(−1.45)	
Industry ratio	−0.01		3,034.4		−0.12		0.00		−28.55		−0.76	
	(−1.48)		(0.89)		(−0.47)		(0.10)		(−0.11)		(−1.84)	
Hospital ratio	−0.01		939.25		0.40		0.02		181.18		−1.62	
	(−1.17)		(0.22)		(1.24)		(0.57)		(0.56)		(−3.11)	
Log (1-Occupancy)	0.00	0.00	55.37	−71.88	0.02	0.01	0.01	0.00	59.87	58.44	0.00	−0.05
	(−1.08)	(−0.43)	(0.07)	(−0.09)	(0.43)	(0.16)	(1.06)	(−0.26)	(1.02)	(0.99)	(−1.22)	(−0.55)
WALT	0.00	0.00	−101.4	−59.59	−0.09	−0.09	−0.01	−0.01	3.95	1.81	0.00	0.10
	(−0.96)	(1.64)	(−0.22)	(−0.13)	(−2.73)	(−2.71)	(−2.29)	(−1.70)	(0.12)	(0.05)	(0.54)	(1.77)
Leverage Rate	−0.01	−0.01	1,262.3	71.96	−0.61	−0.54	0.00	0.03	−288.40	−250.50	−0.01	0.16
	(−0.44)	(−0.41)	(0.18)	(0.01)	(−1.25)	(−1.04)	(−0.04)	(0.54)	(−0.56)	(−0.49)	(−1.07)	(0.19)
Gross Income Growth	−0.01	0.00	117.45	144.54	0.03	0.14	−0.03	−0.01	33.54	68.80	−0.01	0.02
	(−2.43)	(−0.42)	(0.05)	(0.06)	(0.15)	(0.76)	(−1.63)	(−0.56)	(0.17)	(0.37)	(−1.70)	(0.06)
Return On Assets	0.01	0.00	−5,421.2	−5,140.7	1.15	1.08	0.06	0.01	−30.98	−37.39	0.00	0.46
	(0.86)	(0.10)	(−0.65)	(−0.61)	(1.92)	(1.71)	(0.94)	(0.19)	(−0.05)	(−0.06)	(0.31)	(0.45)
Total Assets	0.00	0.00	−0.24	−0.32	0.00	0.00	0.00	0.00	0.06	0.07	0.00	0.00
	(−1.98)	(−1.74)	(−0.24)	(−0.32)	(0.89)	(0.52)	(3.40)	(0.65)	(0.81)	(0.91)	(−4.16)	(−2.40)
Obs.	62	62	62	62	62	62	62	62	62	62	62	62
F-test value	4.15	1.56	0.34	0.38	2.01	1.33	3.01	1.33	0.88	0.81	43.28	2.14
Prob > F	0.00	0.15	0.97	0.95	0.05	0.24	0.06	0.24	0.56	0.62	0.00	0.04
R^2	0.02	0.00	0.06	0.07	0.28	0.21	0.04	0.02	0.15	0.14	0.46	0.30
Adj. R^2			−0.12	−0.11	0.14	0.05			−0.02	−0.03		0.16
F for Time-Fixed Effect Test	4.88		0.8		0.89		4.62		1.51		3.25	
Hausman Test	0.0008						0.0123				0.0771	

Notes: The values in parentheses are *t*-stats.

[a] The property type values in this column have a ranking that is different from the hypothesis.

Exhibit 10
Summary of Findings

EM Measurements	EM Incentive Ranking of Different Property Type Ratio
Total Discretionary Accrual: Model (1)	Office > Hospital > Industry > **Retail** *** ** *** NS
Hypothesis 1	Office > **Retail** > Hospital > Industry
Long-term Discretionary Accrual: Model (7)	Office > Retail > Industry > **Hospital** *** ** *** NS
Hypothesis 2	Office > Retail > **Hospital** > Industry
Discretionary Expense: Model (9)	**Industry**, **Office**, **Hospital** > **Retail** NS NS NS **
Hypothesis 3	Retail, Office > Industry, Hospital
Discretionary Change of Investment Property: Model (13)	**Hospital** > Office > Retail, Industry NS * ** **
Hypothesis 4	Office > Retail, Industry > **Hospital**
Discretionary Revenue: Model (15)	Office, Industry, Retail > Hospital NS NS * ***
Hypothesis 5	Office, Industry, Retail > Hospital
Discretionary COGS: Model (19)	Retail, Office, Industry > Hospital NS NS NS ***
Hypothesis 5	Retail, Office, Industry > Hospital

Notes:
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.
NS = Not significant.

in Exhibit 4. The EM measurement estimation models are presented in Exhibit 5.[7]

Exhibit 6 is a summary of the estimated EM measurements, as well as the explanatory variables used in equation (10). The correlation coefficients of the explanatory variables are shown in Exhibit 7. Multicollinearity does not impact the estimation of equation (10) because none of the independent variables are significantly correlated with each other.

According to Exhibit 6, the standard deviation, which is the measurement of data variation, is low for EM measurement variables such as total discretionary accrual (*TDA*), discretionary long-term accrual (*DLA*), discretionary expense (*DExpense*), and discretionary revenue (*DRevenue*). Therefore, these four variables will be reversed to increase their variation. Moreover, the quadratic terms of property portfolio variables such as office ratio, retail ratio, industry ratio, and hospital ratio are also incorporated in the estimation because the potential impact of diversification on value through earnings implies a non-linear relationship between the "percentage of each sector" and accounting accrual terms.

Findings and Implications

Before running the regression model (10), the outliers were identified and eliminated; multicollinearity has been tested and proven not to impact the estimation. All the EM measurements as dependent variables are in absolute terms. For each dependent variable, two models are constructed using quadratic terms and normal terms of each property portfolio composition variable respectively. All the regression models have been robust to contend with possible heteroscedasticity, and time fixed effects are tested for each OLS model and combined with a Hausman test to determine the selection of models (OLS, fixed effect or random effect). The regression results are shown in

Exhibits 8 and 9. The regressions results are summarized in Exhibit 10.[8]

Exhibit 10 shows[9] that most of the significant findings (at least at a level of 10%) are consistent with the hypothesis, except that REITs with a higher proportion of retail property in their portfolio are less likely to engage in accrual-based EM (measured as total discretionary accrual) and real EM based on controlling daily operating expenses. This unexpected finding conflicts with Hypothesis 1 and Hypothesis 3, and can only be explained by the unique characteristics of retail property performance and management. The rental income of retail property consists of two parts: fixed base rent and overage rent, which is equal to a certain proportion of the tenants' gross sales income. Thus the financial performance of retail property is mainly affected by factors such as the change of retail customers' preferences and the income levels of nearby residents (Martin, 1982). Correspondingly, managers of retail property have a greater focus on improving the combination of tenants (brands) and the layout of the retail property to attract retail customers, whereas EM approaches based on discretionary accrual and daily operating expense are less concerned with retail property management.

Compared with other listed corporations with business and investment in real estate, REITs have similar organizational structures, as well as a more transparent regulatory environment. Therefore, these special features of regulation and organizational structure provide a unique experimental sample that allows researchers to focus on the impacts of real estate portfolio characteristics on financial disclosure behavior and eliminate other potential influential factors. Thus, the findings can also provide the following implications for more general listed real estate corporations: Firstly, the factors that influence the management and financial performance of retail property are different from other types of property, and existing mainstream accounting literature cannot provide sufficient explanations for the financial disclosure behavior of listed real estate corporations that specialize in retail property. Moreover, listed real estate corporations that hold properties with poor financial performance (offices and hospitals in this case) and high individual property value (offices and hospitals in this case) are more likely to engage in accrual-based EM. In addition, listed real estate corporations focus on property types that are volatile in terms of valuation and rental return (offices in this case) and are more likely to engage in real EM based on property transactions. Likewise, real EM approaches based on sales are less likely to be used for listed real estate corporations specializing in property types with limited potential tenants (hospitals in this case). In conclusion, the unique characteristics of each property type indicate that listed real estate corporations which focus on different property types exhibit different financial disclosure behavior.

Conclusion

In this paper, we report the first empirical research investigating the impact of property composition of New Zealand Listed Property Portfolios (NZ-LPPs, equivalent to REITs) on EM. We use the ratios of office, retail, industrial, and hospital property value in the total property portfolio value as descriptive variables for portfolio composition, to regress against two accrual EM measurements (total discretionary accrual and long-term discretionary accrual) and four real EM measurements (discretionary expense, discretionary property transaction, discretionary revenue, and discretionary COGS).

The results confirm that office ratios provide the highest incentive for LPPs to engage in EM (both accrual-based EM and real EM), thus NZ-LPPs with higher ratios of office property have lower earnings quality. In addition, LPPs with a higher ratio of industrial property are less likely to use accrual EM, as well as real EM based on property transactions and valuation, to affect the disclosed financial information. Moreover, LPPs focused on hospital property prefer accrual EM over real EM approaches based on sales manipulation. Furthermore, LPPs focused on retail property choose long-term accrual EM and sales manipulation approaches over other EM approaches when they want to control the presentation of their financial reports. These findings further imply that the financial information disclosure behavior of REITs

is not only explained by the factors that have been confirmed by mainstream accounting literature, the unique characteristics of the different types of property must also be considered. These findings are of significance for REIT investors, auditors, and regulators in terms of improving their understanding of the financial information disclosed to the public, in order to further improve the market transparency and stability.

Furthermore, due to the divergence in the structure of the economy, the market conditions and regulatory environments in different countries may induce different financial disclosure behavior for REITs and their equivalents (Asabere, Kleiman, and McGowan, 1997). Thus further research is required that will include more countries in order to enlarge the database and produce a more comprehensive understanding concerning how differences in property portfolio composition influence EM.

Endnotes

1. The equivalent of REITs in New Zealand is Listed Property Portfolios (LPPs). There is no specific LPP regime enacted in New Zealand, and the regulatory regime of NZ-LPPs is composed of the Trustee Act of 1956, Unit Trust Act of 1960, Income Tax Act of 2007, and the Portfolio Investment Entity (PIE) regime of 2007. NZ-LPPs are generally structured as a unit trust or PIE, which specialize in real estate asset investment. LPPs as a unit trust are not restricted by requirements of leverage, dividend payout, or asset and income composition. Their current incomes are subject to 30% standard corporate income tax, and they distributions to unit holders are also subject to 33% withholding tax, which can be deducted by the amount of imputation credits attached to their dividend. For LPPs as PIE, the distribution to unit holders is not subject to 33% withholding tax, and listed PIE just need to pay income tax at 30%. However, PIE needs to comply with the requirements of asset and income composition (i.e., as least 90% of listed PIE's value should be land), financial arrangements such as debts and units in unit trusts, and at least 90% of the income should be from these assets.
2. REITs are treated as a flow-through entity, and are usually exempt from corporate tax in most REIT markets. However, REITs is the prerequisite to comply with stricter regulation requirements compared to other listed firms if they want to maintain their corporation income tax exemption. Regulatory requirements specific for REITs usually include a minimum dividend payout requirement, maximum debt ratio requirement, property development restriction, and income composition requirement.
3. Besides accrual EM and real EM approaches, REITs in the U.S. are also utilize discretionary judgment in computing funds from operation (FFO), which have to be disclosed in their financial reports, and influence the disclosed financial information (Tsang, 2007).
4. The reason why we do not investigate current accrual EM is REIT assets are required to be mainly composed of real estate and its related assets, thus long-term accrual is a much higher proportion of total accrual than current accrual. Therefore, current accrual EM approaches should be much less important for REITs compared with long-term accrual EM approaches (Guay and Sidhu, 2001; Zhu, Ong, and Yeo, 2010).
5. The managers of the listed firms can utilize discretionary judgment in managing the activities such as advertising, staff training, research, and recruitment, which influence the sales, general, and administrative expenses (SG&A) and research and development expenses (R&D) in the financial reports. However, the two accounts are usually smaller in proportion to the total expenses and costs for REITs. Thus, we combine the two accounts as expenses to estimate the discretionary portions of expenses associated with daily operation management.
6. The data are collected from Dong and Li (2012), who analyzed the return and risk performance of NZ-LPPs.
7. According to the results of individual effect tests, the individual effects are not significant for equations (1), (5), (7), and (8), which are used to estimate the coefficients for computing discretionary accrual, discretionary long-term accrual, abnormal change of property investment, and abnormal revenue. Thus, ordinary least squares (OLS) estimators are chosen for these equations. Moreover, individual effects are significant for equations (6) and (9), which estimate the abnormal expenses and abnormal COGS. The results of the Hausman test show that random effect estimators do not fit equations (6) and (9), thus fixed effect estimators should be chosen for these two equations.
8. In model (1) in Exhibit 8, which employs OLS estimators, the absolute term of discretionary accrual is used as the dependent variable. The quadratic term of property portfolio descriptive variables as independent variables is chosen for total discretionary accrual, because individual effects are not significant according to model (1), which has better explanatory power than models (2), (3), and (4). Model (7), which used the fixed effect estimator, employed the reversed absolute term of discretionary long-term accrual as the dependent variable. The quadratic term of property portfolio descriptive variables is chosen for the discretionary long-term accrual, considering the results of the individual effect test, the Hausman test, and the explanatory power of the models. Moreover, following the same logic, model (9) uses the fixed effect estimator, absolute term of abnormal expense as the dependent variable, and quadric term of property portfolio as the descriptive variables, are chosen for discretionary expense. Model (13) with OLS estimator, absolute term of abnormal change of investment property as dependent variable, and the quadratic term of property portfolio as the descriptive variables, is chosen for discretionary gain/loss from property transactions. Model (15), which uses the fixed effect estimator, absolute term of abnormal revenue as the dependent variable, and the quadratic term of property portfolio descriptive variables, is chosen for discretionary revenue. Model (19), which uses the fixed effect estimator, the absolute term of abnormal COGS as the dependent variable,

and the quadratic term of property portfolio descriptive variables, is chosen for discretionary COGS.

9. In Exhibit 9, we summarize the ranking of incentives that different property types provide for REITs to engage in different types of EM activities.

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