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Article

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Does the regulation change play a role in the dividend policy?: Empirical study of REITs

Jinsuk Yang[a], Manfen Chen[b†], SeungCheol Lim[c]

[a]*Assistant Professor of Finance, Department of Accounting and Finance, University of Southern Indiana, Evansville, USA*
[b]*Associate Professor of Finance, Department of Accounting and Finance, University of Southern Indiana, Evansville, USA*
[c]*Professor, Department of Information Technology Convergence, Woosong University, Republic of Korea*

A B S T R A C T

According to Modernization Act (RMA) of 1999, real estate investment trusts (REITs) must distribute at least 90% of their taxable income to be exempt from tax at the corporate level, less than the percentage required prior to 2001 (95%), implying more funds from operation (FFO) are kept by REITs for growth and profitability. This study examines whether REITs disburse more cash by means of dividends after the tax regulation changes in 2001 to reduce agency problems. Our study reveals that excessive dividends paid by REITs increase with the excess funds from the operation. Furthermore, we document that managers pay excessive dividends after the change in required distribution from 95% to 90% of taxable income, implying that the tax regulation changes in REITs industry do impact excess dividends paid to reduce agency issues. These findings support the agency cost theory. In addition, our findings also imply that policy makers should consider not only stakeholders subject to regulations but also market reactions.

Keywords: Dividend policy, Agency costs, REITs

Ⅰ. Introduction

Real estate investment trusts (REITs) generate profits from different types of investment vehicles. Broadly, there are three types of REITs - equity REITs, mortgage REITs, and hybrid REITs.[1)] Each has its own style of investment as the name indicates. Equity REITs generate incomes by owning and renting real estate properties. Mortgage REITs invest in mortgages and mortgage-backed securities. By borrowing money to buy mortgages and mortgages-backed securities with higher interest rates, REITs profit from the interest rate spread. This type of REITs is very sensitive to interest rates because it issues loans by borrowing short-term debts. Thus, when there are unfavorable determinants of economic growth, it is likely that interest rates will increase. Under this scenario, mortgage REITs are unattractive to investors. Hybrid REITs engage in both activities of equity and mortgage REITs.

Unlike the other two types of REITs, equity REITs

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† Manfen Chen
E-mail: mwchen@usi.edu

1) Within equity REITs, there are nine different categories; residential, storage, retail, healthcare center, office, hotel or motel, industrial, specialty, and multi-use.

have special features. Due to the nature of real estate properties and in the accordance with accounting principles, the depreciation and amortization make up a large proportion in deriving the net income. Consequently, equity REITs take advantage of the depreciation shelter and have higher cash flows than taxable income after adding back the depreciation to the net income. Prior to 2001, REITs were required to annually distribute at least 95% of their taxable income as dividends to be exempt from tax at the corporate level. Since 2001, the regulation has been changed to 90% of taxable income paid as non-discretionary or mandatory dividends. As a result of this regulation change, non-discretionary dividends are reduced by about 5.3% and REITs managers can now keep 5% more of their taxable income. This implies that the amount of free cash flow under managers' control has been doubled, a substantial increase in annual free cash flow. If REITs use the increase of the free cash flow to finance its investments, one can assume that the tax regulation changes will not impact the dividend policy in this industry.

Jensen (1986) argues that free cash flow can motivate managers to use corporate resource for their own perquisites, resulting in deteriorated shareholders' wealth. Therefore, when firms have more free cash flow in their hands, investors pay more attention to the performance of managers for fear of misuse rather than to increase the current market value of shareholders' equity. This capital misuse known as agency problem manifes

ts in firms with low transparency. Past studies often assume that REITs are less impacted by the agency problem than non-REITs companies because REITs are relatively transparent due to the distribution requirements of their taxable income. However, the considerable increase in free cash flow due to the tax regulation changes also makes REITs vulnerable to the issue and can impose greater agency costs on shareholders. These potential costs or agency problems would decrease if firms distribute free cash flow via the dividend channel (Easterbrook, 1984; Jensen, 1986).

This study aims to analyze the impact of the tax regulation changes on firms' dividend payouts. The empirical findings of Wang, Erickson, and Gau's (1993) paper indicate that REITs often pay out more dividends than are required by tax regulations and suggest that REITs dividend policies are partially determined by agency cost. Thus, with the tax regulation changing distribution of taxable income from 95% to 90% resulting in a larger amount of free cash flow, this research focuses on whether equity REITs keep the same dividend policies while providing free internal funds for investments, or increase excess dividends in order to reduce agency problems. Under the agency costs model, firms may increase the dividends to mitigate the potential agency costs. If so, we expect to see larger increase in discretionary dividends or excess dividends after the regulation changes in year 2001.[2)]

The empirical findings in this study show that the regulation changes do impact excess dividends with implication that managers pay more dividends than mandatory dividends required by the tax regulations of distributing 90% of taxable income. Since 2001, REITs pay more discretionary dividends than before, implying that managers distribute free internal funds via dividend channel to mitigate potential agency problem. Our findings are not sensitive to the regression models while controlling for other factors.

The contribution of this paper is multifold. First, the findings presented in this research shed some lights on the link between discretionary dividends and agency problems. Our empirical study investigates how managers incorporate dividend payout policy after the tax regulation changes, with controlling factors related to agency costs. While a prior study (Allen and Michaely, 2003) is against the theory that dividend payout resolves potential agency problem, our study shows evidence supporting the agency theory. Second, our findings imply that the REIT Modernization Act (RMA) of 1999 - the change of dividend payout requirement from 95% to 90%

2) Discretionary dividend or excess dividend is defined as total dividend paid minus mandatory dividend.

- is not entirely satisfactory. The purpose of this Act is to enhance the growth and profitability in REITs industry by reducing the distribution requirement from 95% to 90%. With extra 5% of free cash flow as internal funding, REITs can maintain the quality of properties used in their leasing business and make principal payments on outstanding debt (NAREITT, 1999). On the contrary, REITs are forced to distribute their internal funds via dividend channel because investors worry that the increased internal funds might be used to invest in negative NPV projects. This implies that policy makers should consider not only parties subject to regulations but also market reactions as well.

The rest of this paper is organized as follows. The Section II reviews the prior studies, followed by an introduction of empirical methodology in Section III. Section IV discusses the development of hypothesis and expected signs followed by the description of data in Section V. Section VI summarizes empirical findings. And, lastly, a conclusion based on our findings is addressed in Section VII.

Ⅱ. Literature Review

The dividend policy is irrelevant to the value of firm when there are no taxes, no agency costs, no bond covenants, and no information asymmetry, according to Miller and Modigliani (1961). Additionally, in agreement with the authors, the dividend policy is irrelevant since investors can generate their own dividends. On the other hand, Rozeff (1982) maintained his opinion that even without the tax there exists the optimal dividend policy. Based on his argument, the appropriate amount of dividend payment may be decided when the marginal utility derived from trading off between the costs of raising funds in the capital markets and the benefits of reduced agency costs is equal to zero. This study stems from Rozeff's contention (1982).

There are a vast number of researches rigorously conducted on the dividend policy. Most of them examine dividend policies by employing the agency cost theory or the signaling theory. Stating in a brief way, agency cost theory indicates that the dividends play a role in reducing the agency problems that might become severe if more free cash flows are under managers' control (Jensen, 1986). Aligning with agency cost models (Easterbrook, 1984; Jensen, 1986), Hardin and Hill (2008) present evidence that REITs establish dividend policies to mitigate potential agency problems. More recent study (Ghosh and Sun, 2014) shares the role of dividend distribution in reducing agency conflicts. As to the signaling theory, Aharony and Swary (1980) argues that managers with inside information related to their firms' future earnings tend to use dividends to deliver this information to the public. Bradley, Capozza, and Seguin (1998) apply the signaling hypothesis[3] in explaining how dividend announcement impinges the stock price. A survey study conducted by Brav, Graham, Harvey, and Michaely (2005) shows that firms admit signaling factors exert influence on their dividend policy.

Both agency costs theory and signaling theory involve future cash flows or future earnings. In accordance with the agency costs theory, when firms have substantial free cash flows, they might be forced to distribute more dividends to assuage agency cost. Dispensing most of the cash flows reduces the agency problems. In accordance with the signal model, Wang et al. (1993) argues that when managers have inside information regarding the firms' future prospect, they signal the market by increasing or decreasing dividends. Namely, if managers expect an increase in the future cash flows, they will increase dividends. Thus, in both cases, higher anticipated-cash flows entail higher dividend payout ratio.

However, prior studies also suggest that the aforementioned theories would expect different directions of dividends payouts if we take account

3) Supporting the signaling theory, Healy and Palepu (1988) and Wansley, Sirmans, Shilling, and Lee (1991) found that dividend policy itself possesses the managerial information and it conveyed the information to the market.

of cash flow volatility. Bradely et al. (1998) extends the research on the relationship between dividend and cash flow. In a signaling equilibrium, firms with higher volatile cash flows have lower dividend payout ratio in order to inhibit cutting dividends that might trigger off penalties from shareholders. Under the agency costs theory, firms with high volatility cash flows reduce the potential agency costs by paying more dividends. Easterbrook (1984) and Bradely, Jarrell, and Kim (1984) support this view by explaining that high dividend payout ratio reduces the cash holdings on managers' hand, leading to curtail the potential conflicts of interest.

Even with the extensive literature, which theory is favored in deciphering dividend policy is not clearly addressed. Therefore, this study focuses on the independent variables related to the agency cost theory in order to address why firms pay excessive dividends instead of including mixed explanatory variables associated with two theories.

Ⅲ. Empirical Model

Following Jensen's agency costs theory (1986), we aim to investigate if the regulation changes exert any influence on the dividend policy. Since year of 2001, the mandatory dividends are 90% of before-tax net income, which results in 5% more free cash flow under managers' control. To attenuate potential agency problems, firms should reduce the free cash flow by distributing more discretionary dividends. In other words, excess dividends should arise. Following prior studies, we select explanatory variables associated with agency problems. The empirical structure used in the current study is given by Equation (1):

$$\begin{aligned} EXCIV_{i,t} = {} & \beta_0 + \beta_1 EXFFO_{i,t-1} + \beta_2 ROE_{i,t} \\ & + \beta_3 Tobin's\,Q_{i,t} + \beta_4 LEV_{i,t} \\ & + \beta_5 DVT_{i,t-1} + \beta_6 DVT_{i,t-2} \\ & + \beta_7 REPUR_{i,t} + a_i + \epsilon_{i,t} \end{aligned} \quad (1)$$

where $EXCIV_t$ is excess dividend computed as the ratio of the difference between total dividend paid and mandatory dividends to total assets. $EXFFO_{t-1}$ is previous period's excess funds from operation estimated as the ratio of the difference between funds from operation (henceforth *FFO*) and non-discretionary dividends to total assets.[4] $Tobin's\,Q_t$ is the ratio of the sum of market capitalization and total debt to total assets and LEV_t is the ratio of the sum of long-term and short-term debts to total assets. DVT_{t-1} and DVT_{t-2} are one- and two-year lag ratios of total dividend paid to total assets.[5] $REPUR_t$ is the ratio of stock repurchase to total assets, and a_i is for the fixed effect. More detailed information regarding our variables of interest is provided in Appendix A.

Ⅳ. Hypothesis and Expected Signs

A. Hypothesis

The common notion is that REITs have less agency problems due to the high dividend payout ratio required by the IRS. The tax regulations changed in 2001 from requiring the distribution of 95% of taxable income to only 90%. As a result of this change, equity REITs managers can keep more free cash flows on their hands and use money for their own perquisites rather than maximizing investors' utilities. According to agency theory, this misconduct by managers will be lessened because investors would like to force managers to disburse free cash flows in order to reduce the potential agency problems. Consequently, to cater to investors, REITs must keep almost the same ratio of dividend payout. Hence, the main hypothesis built in this research is as follows:

4) We use one-year lag *EXFFO* because the previous period's excess funds become internal funds available for distribution (Hardin and Hill, 2008; Boudry, 2011; Ghosh and Sun, 2014). *FFO* is net income minus gains or losses from sales of property plus depreciation and amortization.

5) One- and two-year lag *DVT* are used because past dividend payout ratios could affect the current discretionary dividends. Thus, following Fama (1990), a two-year period is selected.

Null Hypothesis: The amount paid for the discretionary dividends will remain the same after the regulation changes in 2001.

B. Expected Signs

Unlike non-REITs firms, measuring performance of REITs solely relying on net income is inappropriate (NAREITT, 2002) because of the nature of equity REITs. The proper way is to add back the load of depreciation and amortization considered as non-cash expenses to net income to get free cash flow, which is denoted as FFO computed as the net income plus depreciation and amortization excluding the gains (or losses) from the sale of property. This process results in higher cash flow than taxable income to REITs. Excess funds from operation (EXFFO) tends to aggravate agency problems (Ghosh and Sun, 2014). When investors recognize more potential agency costs, they tend to demand more dividends from managers to limit the managers' controls over the free cash flow. Thus, the positive relationship between EXFFO and discretionary dividends (EXCIV) is expected.

According to Wang et al. (1993), if investors were satisfied with the performance of mangers, they might not force managers to disburse as much dividends as they would when managers had poor performance. In other words, good performance implies that managers add value to the investor's wealth. Then, investors would not have much apprehension regarding the agency problem. As a result, managers would not need to pay high dividends. In this paper, Return on Equity (henceforth ROE) is used to measure the performance of managers. Hence, the negative relationship is expected between ROE and excess dividends.

In prior studies, Tobin's Q (Tobin, 1969) is used as a proxy for different things: firm's access to the capital market (Hardin and Hill, 2008) and managerial performance (Wang et al., 1993; Lang and Litzenberger, 1989). Hardin and Hill (2008) suggest that firms with better access to the capital market captured by Tobin's Q have greater potential to grow because of relatively easier fund raising, resulting in enhancement of firm's ability to pay excessive dividends. This implies that the relationship between Tobin's Q and discretionary dividends (EXCIV) is positive. On the other hand, Wang et al. (1993) argue that Tobin's Q can be used to distinguish between positive and negative NPV projects. Q ratio less than one implies that firms tend to overinvest in negative NPV projects while firms with Q higher than one are likely to have positive NPV projects. Firms with low Q would be forced to distribute more dividends to mitigate potential agency problems, implying that EXCIV is negatively associated with Tobin's Q. Given the conflicting expectation suggested in prior studies, we leave our expectation to the empirical test.

There are broadly two opinions about whether REITs are better off using debts. According to Howe and Shilling (1988), REITs as non-tax-paying firms are advised not to use debts because there is not a net tax advantage. On contrary, Jaffe (1991) and Hamill (1993) state that REITs should use debt since real estate property itself is viewed to "have a high degree of debt capacity." Therefore, REITs can obtain funds much easier and cheaper than non-REITs firms can. From the perspective of the agency theory, lenders will scrutinize REITs' projects in order to prevent default, which is considered as external monitoring service. Such an extra monitoring service can motivate investors to force REITs to pay higher dividends so that managers may use up internal funds and then look for lenders to raise capital for further investment. Given these reasons, the positive relationship between excess dividends and leverage ratio is expected.

Florackis and Ozkan (2009) argue that agency problems abide in the firm longer than expected. If so, relatively high dividends previously paid to attenuate the agency problems should persist over time, which affect current discretionary dividends. To test this proposition, our study incorporates the total dividend with one- and two-year lags scaled by total assets. Having a two-year lag included in the study is in line with the explanation provided by Fama (1990) that a two-year period is the longest time the market can predict ahead.

When a firm has free cash flow, it distributes a fraction of them as a means of either dividends or stock repurchases. Feldstein and Green (1983) argue that the periodic stock repurchases are regarded as paying dividends. Since the year of 2001, most REITs have consistently bought back shares from investors. Thus, stock repurchase can be viewed as an alternative to the dividend payment. The stock repurchase shown in the data includes both the common and preferred stocks. In consideration of the vehicle to distribute the funds from operation (FFO), the association of stock repurchase with excess dividends is expected to be negative.

Ⅴ. Data

Equity REITs can distribute more dividends than other types of REITs. Wang et al. (1993) explore the relationship between the dividend policy and the types of REITs and conclude that, from 1985 to 1988, equity REITs paid more dividends than mortgage REITs. Chan, Wang, and Erickson (2003) support the previous finding with expanded data that higher portion of income was distributed to investors.

Our research investigates the impact of regulation changes on discretionary dividend payouts (EXCIV). Previous literature suggests that equity REITs are better suited for this study. Thus, we use the data related to equity REITs. The initial list of REITs is constructed based on the information provided by the National Association of Real Estate Investment Trusts (NAREIT). Using the business description supplied by LexisNexis, other types of REITs are excluded. All financial statements and dividend information are collected from the Center for Research in Securities Prices (CRSP) and COMPUSTATA databases. Kallberg, Liu, and Srinivasan (2003) point out that there are potential problems in using quarterly data due to possible annual patterns in dividend payout. Thus, annual data from 1996 to 2003 are used.

Ⅵ. Discussion of Results

Table 1 shows the descriptive statistics of the sample of 84 equity REITs from 1996 to 2003. Due to the limited availability of data or the poor data, the table shows some negative numbers which are theoretically possible but practically preposterous. The ***EXCIV*** has a negative minimum. It implies that in certain years, equity REITs were not able to meet the distribution regulation: 95% for years prior to 2001 and 90% for years in 2001 or after. For firms just starting the business, it is possible to have negative excess dividends. Additionally, as this research uses the funds from operation - computed by adjusting the gain or loss from sales and the depreciation and amortization, not the taxable income, it is not unusual for the REITs to have positive taxable income but negative funds from operation. If so, what they pay in dividends must be less than 90% (or 95% prior to 2001) of taxable income.

Table 2 indicates that the Tobin's Q is highly and positively correlated with the leverage ratio. Intuitively, this relatively strong and positive correlation makes sense because the total debt is the numerator of Tobin's Q. The correlation between the dividends paid in previous two consecutive years is the strongest, implying that equity REITs managers tend to keep the stable dividend payout ratio. As discussed in the previous section, investors may seek for higher dividend payout so that firms inevitably go to capital markets to raise external funds for the future growth and, as a result, receive the additional monitoring. However, Table 2 shows the statistically significant negative relationship between the total dividend with one-year lag and the leverage ratio. Same statistically significant negative relationship is shown between the total dividend with two-year lag and the leverage ratio.

The empirical results obtained by employing the plain Ordinary Least Squares (OLS) regression with the pooled data are provided in Table 3. The table indicates that EXFFO and REPUR have signs that are consistent with our expectation[6]. The more EXFFO

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
firm	672	43.38095	24.44832	1	85
EXCIV	672	-0.0198446	0.0267205	-0.1968597	0.2084712
EXFFO	588	-0.0606396	0.0366657	-0.2292481	0.1698375
ROE	672	0.0836614	0.3038723	-3.090533	3.005174
TOBINSQ	672	0.8409239	0.3616255	0	2.374268
LEV	672	0.5112294	0.1929737	0	1.7399
DVT1L	588	8.454723	25.87889	-195	173.616
DVT2L	504	16.4155	40.21207	-195	239.934
REPUR	672	0.0061002	0.0169685	0	0.2017633

This table shows the descriptive statistics with the sample of 84 equity REITs. The time frame is from 1996 to 2003. ***EXCIV*** = = (if t < =2000) [total dividend paid - 95% of taxable net income] / current total assets or (if t > 2000) [total dividend paid - 90% of taxable net income] / current total assets. ***TOBINSQ*** = Tobin's Q. ***EXFFO*** = (the prior year's FFO - the non-discretionary dividends of current periods) / previous' year total assets. ***LEV*** = (long-term debt + short-term debt) / current total assets. ***DVT1L*** = total dividend paid with one-year lag / total assets with one-year lag. ***DVT2L*** = total dividend paid with two-year lag / total assets with two-year lag. ***REPUR*** = stock repurchase / current total assets. ***ROE*** = (income before extraordinary items) / common equity.

Table 2. Correlation Matrix

	EXFFO	ROE	TOBINSQ	LEV	DVT1L	DVT2L	REPUR
EXFFO	1						
ROE	0.0868*	1					
TOBINSQ	-0.1043*	0.0263	1				
LEV	-0.1140*	-0.0517	0.2541*	1			
DVT1L	0.0895*	0.1808*	-0.0109	-0.1169*	1		
DVT2L	0.0674	0.1883*	0.043	-0.1350*	0.7775*	1	
REPUR	0.1248*	0.0203	0.0748	-0.0538	-0.0316	-0.0383	1

The table shows correlations with the sample of 84 equity REITs. The time frame is from 1996 to 2003. ***EXCIV*** = = (if t <= 2000) [total dividend paid - 95% of taxable net income] / current total assets or (if t > 2000) [total dividend paid - 90% of taxable net income] / current total assets. ***TOBINSQ*** = Tobin's Q. ***EXFFO*** = (the prior year's FFO - the non-discretionary dividends of current periods) / previous' year total assets. ***LEV*** = (long-term debt + short-term debt) / current total assets. ***DVT1L*** = total dividend paid with one-year lag / total assets with one-year lag. ***DVT2L*** = total dividend paid with two-year lag / total assets with two-year lag. ***REPUR*** = stock repurchase / current total assets. ***ROE*** = (income before extraordinary items) / common equity. The asterisk marks indicate that the correlations are statistically significant at 1% level.

REITs have, the more excessive dividends they pay out. Moreover, the coefficient on EXFFO is statistically significant at 1% level. The return on equity as a measure for the managers' performance shows the positive coefficient, although with a small magnitude, and at statistically significant level. Tobin's Q has a positive sign and its coefficient is statistically significant. Even with the small magnitude, it is possible for firms to pay dividend to convey information to the market. As an alternative way to distribute free cash flow, the stock repurchase has the sign as expected. Regarding REPUR, the negative coefficients imply that REITs pay out less excessive dividends when they repurchase stocks as a means of distributing free cash flows. However, the test result shows that the coefficient is statistically insignificant. In addition, the excess dividend is related more to the immediate previous year's dividend rather than the dividends paid two years ago. The coefficient of the total dividend with one-year lag is statistically significant. From this table, it can be inferred that,

6) The coefficients on REPUR have the negative sign as we expect but they are statistically insignificant.

Table 3. Excess dividends (Plain Ordinary Least Squares Regression)

Independent Variable	Predicted Sign	Coef.	Std. Err.	t	P-value
EXFFO	+	0.17473***	0.0307035	5.69	0
ROE	-	0.00701**	0.0031781	2.21	0.028
TOBINSQ	-	0.00666**	0.0032282	2.06	0.04
LEV	+	-0.05924***	0.0060414	-9.81	0
DVT1L	-/+	0.00025***	0.0000604	4.06	0
DVT2L	-/+	-5.78E-05	0.0000408	-1.42	0.157
REPUR	-	-0.0417734	0.05419	-0.77	0.441
Intercept		0.01365***	0.0048347	2.82	0.005
R-squared = 0.2865					

The table reports the coefficients for regression models (OLS) with the sample of 84 equity REITs. The time frame is from 1996 to 2003. The dependent variable is EXCIV: ***EXCIV*** = (if t < = 2000) [total dividend paid - 95% of taxable net income] / current total assets or (if t > 2000) [total dividend paid - 90% of taxable net income] / current total assets. ***TOBINSQ*** = Tobin's Q. ***EXFFO*** = (the prior year's FFO - the non-discretionary dividends of current periods) / previous' year total assets. ***LEV*** = (long-term debt + short-term debt) / current total assets. ***DVT1L*** = total dividend paid with one-year lag / total assets with one-year lag. ***DVT2L*** = total dividend paid with two-year lag / total assets with two-year lag. ***REPUR*** = stock repurchase / current total assets. ***ROE*** = (income before extraordinary items) / common equity. Coefficient estimates significantly different from zero at 10%, 5% and 1% level are marked *, ** and ***, respectively.

Table 4. Excess dividends (Random Effect)

Independent Variable	Predicted Sign	Coef.	Std. Err.	t	P-value
EXFFO	+	0.14082***	0.0312038	4.51	0
ROE	-	0.00709**	0.0031114	2.28	0.023
TOBINSQ	-	0.00231	0.0035361	0.65	0.514
LEV	+	-0.0532***	0.0074979	-7.1	0
DVT1L	-/+	0.00025***	0.0000555	4.43	0
DVT2L	-/+	-0.0000546	0.0000394	-1.39	0.166
REPUR	-	-0.0337693	0.0520674	-0.65	0.517
Intercept		0.01249**	0.0056533	2.21	0.027
R-sq = 0.2833					

The table reports the coefficients for regression models with the random effect. The sample includes 84 equity REITs. The time frame is from 1996 to 2003. ***EXCIV*** = (if t < = 2000) [total dividend paid - 95% of taxable net income] / current total assets or (if t > 2000) [total dividend paid - 90% of taxable net income] / current total assets. ***TOBINSQ*** = Tobin's Q. ***EXFFO*** = (the prior year's FFO - the non-discretionary dividends of current periods) / previous' year total assets. ***LEV*** = (long-term debt + short-term debt) / current total assets. ***DVT1L*** = total dividend paid with one-year lag / total assets with one-year lag. ***DVT2L*** = total dividend paid with two-year lag / total assets with two-year lag. ***REPUR*** = stock repurchase / current total assets. ***ROE*** = (income before extraordinary items) / common equity. Coefficient estimates significantly different from zero at 10%, 5% and 1% level are marked *, ** and ***, respectively.

holding everything else constant, when managers have more free cash flow (e.g. $1), they are willing to pay higher dividends (e.g. $0.17 more dividends).

It is very likely for the data to omit variables that are different among firms but constant over the period. It is common to assume that there exists the need to control the firm heterogeneity; therefore, the random effect analysis is conducted. Table 4 shows that most of the variables keep similar coefficients and significant levels as the plain Ordinary Least Squares (OLS) regression shows on Table 3. Furthermore, it is worth noting that the effect of Tobin's Q on excess dividends is reported much differently when the analysis is conducted with the random effect (Table 4). The magnitude of coefficients is reduced to one third, but the p-value indicates that the effect is not statistically significant anymore (p-value: 0.514). This phenomenon is intuitively true because each firm has different levels of investment and debt. In addition, it is reasonable to doubt that there may

Table 5. Excess dividends (Fixed Effect)

Independent Variable	Predicted Sign	Coef.	Std. Err.	t	P-value
EXFFO	+	0.10575***	0.0344496	3.07	0.002
ROE	-	0.00589*	0.0033032	1.78	0.075
TOBINSQ	-	-0.0045431	0.004429	-1.03	0.306
LEV	+	-0.0158803	0.0146794	-1.08	0.28
DVT1L	-/+	0.00025***	0.0000549	4.51	0
DVT2L	-/+	-0.0000425	0.0000412	-1.03	0.303
REPUR	-	-0.0238159	0.0536428	-0.44	0.657
Intercept		-0.0027846	0.0092658	-0.3	0.764
R-sq = 0.2015					

The table reports the coefficients for regression models with the fixed effect. The sample includes 84 equity REITs. The time frame is from 1996 to 2003. ***EXCIV*** = (if t < = 2000) [total dividend paid - 95% of taxable net income] / current total assets or (if t > 2000) [total dividend paid - 90% of taxable net income] / current total assets. ***TOBINSQ*** = Tobin's Q. ***EXFFO*** = (the prior year's FFO - the non-discretionary dividends of current periods) / previous' year total assets. ***LEV*** = (long-term debt + short-term debt) / current total assets. ***DVT1L*** = total dividend paid with one-year lag / total assets with one-year lag. ***DVT2L*** = total dividend paid with two-year lag / total assets with two-year lag. ***REPUR*** = stock repurchase / current total assets. ***ROE*** = (income before extraordinary items) / common equity. Coefficient estimates significantly different from zero at 10%, 5% and 1% level are marked *, ** and ***, respectively.

be an endogeneity problem in the data. The Hausman test is conducted and results reveal the covariance between a time-invariant individual-specific effect and explanatory variables. Accordingly, the fixed effect analysis is performed, and the results are presented in Table 5.

Based on the results showing in Table 5, it is interesting to see the changes in the signs of the Tobin's Q and the intercept. They are changed from positive coefficients when random effect is considered to negative ones when fixed effect is incorporated. Furthermore, the absolute value of Tobin's Q's magnitude doubles. However, both are statistically insignificant. In accordance with above empirical results, the current study reveals that the excess funds from operations exert effects on the dividend payout. If this is the case, does the hypothesis constructed at the beginning of this research hold? To address this question, we include the dummy variable to the empirical model.

$$\begin{aligned} EXCIV_{i,t} = {} & \beta_0 + \beta_1 EXFFO_{(i,t-1)} + \beta_2 ROE_{i,t} \\ & + \beta_3 Tobin's Q_{i,t} + \beta_4 LEV_{i,t} \\ & + \beta_5 DVT_{i,t-1} + \beta_6 DVT_{i,t-2} \\ & + \beta_7 REPUR_{i,t} + \beta_8 yrdum + a_i + \epsilon_{i,t} \end{aligned} \quad ,$$

where ***yrdum*** = 0, if year <= 2000 and ***yrdum*** = 1, otherwise.

Table 6 contains outcomes from three different analysis: plain OLS, Random effect, and Fixed effect. Our empirical results indicate that the positive relationship between the internal funds (EXFFO) and excessive dividends sustains even with controlling for year dummy variable (***yrdum***). The coefficient on EXFFO is positive and statistically significant at 1% level. The results are consistent with Rhim, Brajcich and Friesner's (2014) findings that firms with more cash flow tend to pay dividends to reduce agency problems. More interestingly, the magnitudes of coefficients on EXFFO are almost the same as the ones without ***yrdum*** (Table 3, 4, and 5), suggesting that the dominant factor in the excessive dividend payout is the free cash flow. From these findings, we infer that firms are forced to distribute internal funds via dividend channel, which supports the agency cost theory related to free cash flow (Jensen, 1986).

The current study uses ROE to capture the performance of managers and presents the positive association of ROE with EXCIV, statistically significant at 5% level in all regression models. The positive relationship informs us that managers with greater ability to generate profits are likely to pay more excessive dividends. Our dependent variable, EXCIV,

has positive and negative relationships with ROE and LEV, respectively. The opposite impacts of these two control variables on EXCIV align with the results in Prieto and Lee (2019) showing that debt ratio and profitability are negatively related to each other. Consistent with findings in previous tables, the coefficients on DVIT1L are positive and statistically significant at 1% level regardless of empirical structures, demonstrating that total dividend payouts in the previous fiscal year strongly and positively affect current excessive dividend payouts.

Our interest in this empirical study is to explore how changes in regulation on the mandatory dividend payout affect excessive dividends. To this end, we incorporate the binary variable, ***yrdum***, in the empirical equation. The results show that the coefficient of the year dummy varaible is positive and statistically significant at 1% level. Consequently, the null hypothesis that descretionary dividends are constant over periods is rejected. It implies that managers pay more dividends after the distribution regulation changed from 95% to 90% of taxable income.

Ⅶ. Conclusion

REITs have two unique features that separate them from other non-REITs firms. First, REITs are more

Table 6. Excess dividends (Plain OLS, Random Effect, and Fixed Effect)

	OLS			RE			FE		
	Coef.	t	P>t	Coef.	z	P>z	Coef.	t	P>t
EXFFO	0.178***	5.9	0	0.1423***	4.65	0	0.1054***	3.11	0.002
	(0.03018)			(0.0306)			(0.03385)		
ROE	0.006**	2.04	0.042	0.0064**	2.1	0.036	0.0055**	1.69	0.091
	(0.00313)			(0.00305)			(0.00325)		
TOBINSQ	0.008**	2.47	0.014	0.0038	1.1	0.273	-0.0024	-0.55	0.585
	(0.00318)			(0.0035)			(0.00438)		
LEV	-0.06***	-10.2	0	-0.0558***	-7.48	0	-0.0256*	-1.75	0.081
	(0.00595)			(0.00745)			(0.01463)		
DVT1L	0.0002***	3.94	0	0.0002***	4.33	0	0.0002***	4.4	0
	(0.00006)			(0.00005)			(0.00005)		
DVT2L	0.0000	-0.84	0.4	0.0000	-0.7	0.483	-0.0000153	-0.37	0.709
	(0.00004)			(0.00004)			(0.00004)		
REPUR	-0.0577	-1.08	0.28	-0.0506	-0.99	0.322	-0.0405	-0.77	0.444
	(0.05338)			(0.05113)			(0.05287)		
yrdum	0.0094***	4.32	0	0.0091***	4.54	0	0.0080***	3.98	0
	(0.00218)			(0.00200)			(0.00201)		
Intercept	0.0071	1.42	0.156	0.0062	1.08	0.28	-0.0053	-0.58	0.561
	(0.005)			(0.00575)			(0.00913)		
	R2 = 0.3124			*R2 = 0.3093*			*R2 = 0.2585*		

The table shows the coefficients of each variable including the year dummy "***yrdum***". RE and FE stand for "random effect" and "fixed effect" respectively. The total sample size is 672 (84 firms and 8 years). *EXCIV* = (if t < = 2000) [total dividend paid - 95% of taxable net income] / current total assets or (if t > 2000) [total dividend paid - 90% of taxable net income] / current total assets. ***TOBINSQ*** = Tobin's Q. ***EXFFO*** = (the prior year's FFO - the non-discretionary dividends of current periods) / previous' year total assets. ***LEV*** = (long-term debt + short-term debt) / current total assets. ***DVT1L*** = total dividend paid with one-year lag / total assets with one-year lag. ***DVT2L*** = total dividend paid with two-year lag / total assets with two-year lag. ***REPUR*** = stock repurchase / current total assets. ***ROE*** = (income before extraordinary items) / common equity. ***yrdum*** = dummy variable (***yrdum*** =1 if the year is greater than 2000. ***yrdum*** =0, otherwise.). Coefficient estimates significantly different from zero at 10%, 5% and 1% level are marked *, ** and ***, respectively.

transparent than other firms. Because of this nature of REITs, US REITs can access capital markets with favorable rates. Second, the tax regulations force REITs to pay at least 90% of their taxable income. If they fail to meet the restriction, they are subject to paying tax at the corporate level. The percentage of taxable income to be distributed as dividends changed from 95% to 90% in 2001.

This study is to examine whether equity REITs keep the same dividend policies while providing free internal funds for investments or increase excess dividends in order to reduce agency problems. To this end, our study follows the literature to adopt widely known explanatory variables for the dividend payment. Based on the empirical results, we can infer that the excess funds from operation have a direct relationship with excess dividends. In contradiction to our anticipation, the ROE as the proxy for the managers' performance shows a positive relationship with excess dividends. Although the Tobin's Q ratio has the sign as we expected but it is insignificant. Furthermore, the coefficients of EXFFO, the key independent variable of our study, are positive and statistically significant. Using the year dummy variable, we investigate the impact of regulation changes on excess dividend payout decision made by equity REITs managers. We report that REITs pay even more discretionary dividends after regulation changed, which will mitigate agency problems.

As shown in our study, REITs tend to distribute extra cash flow as dividends instead of using it as internal funding for growth and profitability. This tendency defeats the purpose of REIT Modernization Act (RMA) of 1999. This implies that policy makers should consider not only parties subject to regulations but also market reactions as well.

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Appendix A

Variables:	Expectation
$EXCIV = \frac{Total\ Dividend\ Paid - 95\%\ of\ Taxable\ Income}{Total\ Assets\ in\ Current\ Year} (if\ t \leq 2000)$	
$EXCIV = \frac{Total\ Dividend\ Paid - 90\%\ of\ Taxable\ Income}{Total\ Assets\ in\ Current\ Year} (if\ t > 2000)$	
$EXFFO_{i,t-1} = \frac{FFO\ from\ Privous\ year - Non\ Discretionary\ Dividens\ of\ Current\ year}{Total\ Assets\ from\ Previous\ year}$, where $FFO = Net\ income\ excluding\ gains\ or\ losses\ sales\ of\ property + Depreciation\ and\ amortization$	+
$Tobin's\ Q_{i,t} = \frac{Market\ capitalization + Total\ debt + Preferred\ equity}{Total\ assets\ in\ Current\ Year}$	+
$LEV_{i,t} = \frac{Long\ term\ debt + Short\ term\ debt}{Total\ Assets\ in\ Current\ Year}$	+/-
$DVT_{i,t-1} = \frac{Total\ dividend\ paid\ with\ one - year\ lag}{Toal\ Assets\ with\ one - year\ lag}$	+/-
$DVT_{i,t-2} = \frac{Total\ ividend\ paid\ with\ two - year\ lag}{Toal\ Assets\ with\ two - year\ lag}$	+/-
$REPUR_{i,t} = \frac{Stock\ repurchase}{Total\ Assets\ in\ Current\ Year}$	-
$ROE_{i,t} = \frac{Income\ before\ extraordinary\ items}{Commn\ equity}$	-
$a_i = Fixed\ Effect$	