

STOCK REPURCHASES BY REAL ESTATE INVESTMENT TRUSTS (REITs), STOCKHOLDER RETURNS AND UNDERPERFORMANCE, FREE CASH FLOW AND CAPITAL RESTRUCTURING MOTIVES

R. S. Rathinasamy*

Abstract

Returns accruing to the stockholders of 149 Real Estate Investment Trusts (REITs) following the announcement of stock repurchases covering a five-year period from 1998 to 2002 are analyzed. Standard market model (Brown and Warner, 1985) was used to compute the excess returns. Results show that stockholders earn significant average abnormal returns (AARs) and cumulative average returns (CARs) following stock buy-backs. Further, evidence is uncovered providing support for various motives for REITs buyback, namely excess free cash flow, under-performance and capital restructuring motives.

Keywords: stockholders, stock repurchases, real estate

* Associate Professor of Finance, Department of Finance & Insurance, Ball State University, Muncie, IN 47306

1. Introduction

1.1 Back ground information

Real Estate Investment Trusts (REITs) were created by an act of Congress in 1960 and, as it stands now, is a company that pools the resources of individual investors and invests in the purchase, development, and/or management of real estate properties such as apartments, offices, shopping centers, malls, and warehouses. REITs, by providing double-digit returns to investors in a declining market proved to be particularly attractive investments. They have also provided much-needed diversification. According to National Association of Real Estate Investment Trusts (NAREIT), the total market capitalization of all REITs as of 2002 exceeded \$160 billion. Thus, REITs constitute a very important asset group.

1.2 Statement of the problem

Firms undertake repurchase of their own shares for a variety of reasons. They often repurchase their stock when they feel that their stock is undervalued. They also resort to their own stock buyback to payout excess cash from free cash flows if there are not enough capital investment opportunities, to signal better earnings ahead and to restructure their capital etc. To date, there seems to be no systematic study of the wealth effects of stock repurchases by REITs. This research has documented the wealth effects of REITs' stock repurchase on stockholders. It also explored the motives underlying the repurchase of stock by REITs. We did so by measuring the excess returns (defined as the actual return minus the required return based on the systematic of the REITs' common stock) to stockholders on the announcement day of stock buyback, and by computing the cumulative average returns for various windows from

minus 10 days to plus 10 days around the announcement day of the stock buyback. Past researchers of other stock repurchases have either based their repurchase studies on the actual contents of repurchase announcements or they have proxied the motives using financial and/or market information. Since the actual motivations for buybacks could be quite different from the announced ones, we investigate the motives for the REITs' buybacks by examining various financial and market data. It is important to understand and quantify the motives and rationales for the stock repurchases by REITs. Once the investors understand the reasons for these repurchases, they can make a better and informed investment decisions. Documenting the association between stock buybacks and stockholder wealth effects will also aid the REITs in making the right investment and financing decisions. Therefore, we investigate the determinants of wealth effects and quantify the relation between stockholder returns and motives for repurchases, using a multiple regression framework including the performance of the firm prior to repurchase as evidenced by gross profit margin and price to book ratio, free cash flows, debt to equity and debt to total assets ratios as explanatory variables.

1.3 Significance of the problem and contributions

This project has, in fact, added to the body of knowledge on returns to stockholders of REITs. The results indicate that the stockholders of the REITs reap significant abnormal returns on the announcement day, and the day following. In addition, the CARs for the windows, (-1, +1), and (-1, +2) are significant. Multiple regressions studies for the motives for the stock repurchases show that the

abnormal returns are negatively related to prior firm performance, and long-term debt to equity and positively related to free cash flow. These results are consistent with the motives of prior under-performance of the company, capital restructuring, and free excess cash flow. REITs stocks in addition to providing attractive returns due to high dividend yields also provide diversification in today's volatile stock markets. This additional knowledge on the wealth effects of stock repurchases and the motivations for doing so will help the investors form better-informed investment decisions. It will also help REITs to make better financing and investment decisions, facilitating stockholder wealth maximization. Thus, this research has made an important contribution to REITs literature on the wealth effects of and motivations for the stock repurchases.

2. Review of Literature

Stock repurchases by corporations are commonplace in the capital markets. Masulis (1980), Dann (1981), and Vermaelen (1981) have found that stockholders of firms undertaking share repurchase tender offer experience significant positive excess returns. Over time, researchers have documented various motives for stock repurchases. Stephens and Weisbach (1988) found that firms undertaking repurchases have positive cash flows; it is a way to distribute the excess cash flows to stockholders. They also found that firms undertaking stock repurchases have prior weak stock returns showing that stock repurchases are resorted to when stock price is low. There is also evidence in the literature of firms undertaking repurchases to increase their leverage ratios (Opler and Sheridan, 1996). Hertz and Jain (1991) provide evidence firms resort to stock repurchase tender offers to signal favorable information about the level and riskiness of future earnings as analysts revise their forecast of the earnings upward following repurchase announcements. In the last few years, REITs have been resorting to buybacks of their own stock. The reasons cited in the popular literature for these buybacks include bolstering the sagging stock prices especially in the last few years (Feuerstein, 1999). Until recently, Securities and Exchange Commission (The regulatory agency for the stock markets) rules have prohibited companies from buying or selling no more than a specified daily volume of their shares. These stock buyback rules were suspended by the Securities Exchange Commission (SEC) in September 2001. This suspension also helped REITs to repurchase their own shares more quickly and easily (Hensell, 2001).

3. Hypotheses

3.1 The following hypotheses were tested

i. Stockholders experience significantly positive excess returns on the day of and around the announcement of REITs' stock repurchase,

ii. The stockholder excess returns will be significantly positively related to the pre-repurchase of free cash flow of REITs,

iii. The stockholder excess returns will be significantly negatively related to the pre-stock-repurchase profitability measure, namely *gruff* profit margin and

iv. The stockholder excess returns will be significantly negatively related to the pre-buyback debt ratios.

3.2 These hypotheses were tested by

i. **Computing** the excess returns and cumulative (excess returns aggregated over a given time period around the announcement of buybacks) excess returns accruing to stockholders following the repurchase of stocks by REITs,

ii. **Analyzing** the performance of stocks prior to buyback to see whether the stocks are undervalued and study the relation of prior performance to the excess and cumulative excess returns, and **Studying** the relation between gross profit margin and stockholder returns following buybacks,

iii. **Documenting** free cash flow levels prior to buybacks and examining the relation of the free cash flows to excess returns and cumulative excess returns and

iv. **Calculating** debt levels as measured by debt to equity ratio one year prior to buybacks and documenting the relation of these measures to excess and cumulative excess returns.

4. Research Methods

4.1 Data selection and description

4.1.1 REITs stock repurchases data

The sample consists of 149 stock repurchases by REITs covering a 5-year period from 1998-2002, obtained from the National Association of Real Estate Investment Trusts (NAREIT). The data provided information on the announcement of stock buybacks by REITs along with number of shares or market value of shares for the buyback. Additionally, it also provided information on the completion percentage.

4.1.2 Financial Information on the sample

Free cash flow, capital expenditure, short and long term debt and total debt ratios, and equity and total assets one year prior to the announcement of the buyback were collected from the COMPUSTAT (Standard & Poor's computerized financial database).

For the purpose of the study, free cash flow is defined as:

$$\text{Free Cash Flow} = \text{EBITDA} - \text{Interest} - \text{Taxes} - \text{Preferred Dividends} - \text{Common Dividends},$$

Where,

EBITDA stands for Earnings before Interest, Taxes and Depreciation.

4.2 Methodology

4.2.1 Stockholder excess returns

Excess returns accruing to stockholders were computed using the daily stock returns data from the Center for Research in Security Prices (CRSP). The standard Market Model approach was used. The market model assumes that there is a linear relationship between a stock's return and the return on a market index. Based on this model, the daily

abnormal return, AR_{it} , for each sample firm i on each event day t during the period of interest is estimated as:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (1)$$

Where,

R_{it} = Rate of return to security i on event day t ,

R_{mt} = Rate of return on Value Weighted S & P 500 Index on event day t , and

α_i , β_i = Ordinary least-squares estimates of the market model parameters. The parameters are estimated over the 250-day period beginning $t=-271$ through $t=-21$, where $t=0$ is the announcement day of stock buy-back

The excess returns were computed on the announcement date, and -10 days to $+10$ days of announcement, and the excess returns were cumulated (CARs) over various intervals of -10 to $+10$, -5 to $+5$, -5 to $+1$, -5 to 0 , -3 to 0 , -2 to 0 and -1 to 0 , -1 to $+1$ and -1 to $+2$ with 0 being the announcement day as ascertained from the *Wall Street Journal Index*. T-statistics were computed to test the significance of the excess returns and cumulative excess returns.

4.2.2 Multiple regression studies

In order to fathom the motives underlying the stock repurchases by REITs, several multiple regressions with day 0 , -1 and $+1$ excess returns, and CARs for various intervals as dependent variables were employed; free cash flows, annual debt levels as measured by debt to equity and debt to total assets measures, profitability measure of gross profit margin constitute the independent variables. The multiple regression models will consist of the following form: $AR_t / CAR_t = a_0 + (b_1 * \% \text{ Free Cash Flow}_{t-1}) + (b_2 * \text{Gross Profit Margin}_{t-1}) + (b_4 * \text{Debt Ratios}_{t-1})$ (2)

Where,

AR_t / CAR_t = Average Excess Returns / Cumulative Average Excess Returns for a given period,

a_0 = Intercept and

$t-1$ and $t+1$ refer to the year/quarter before and after the stock repurchase and

b_1, b_2, b_3 and b_4 are slope coefficients.

Appropriate t-statistics were used to test the significance of the regression coefficients.

5. Results and Discussion

5.1 Sample characteristics

Some key characteristics of the sample firms are presented in Table 1.

Insert Table 1 Here

The mean total assets of the sample firms, is 1.832 billion dollars, the mean annual revenues were 257.33 million dollars, and the mean book value of the equity is 764.72 million dollars.

5.2 Market Reaction to Stock Repurchase by REITs

5.2.1 Average Abnormal Returns (AARs)

The results of stock market reaction to the announcement of the REITs' stock repurchase as shown by the daily Average Abnormal Returns (AARs) are presented in Table 2. The day 0 or the announcement day AAR accruing to the stockholders is 0.64%

Insert Table 2 Here

significant at 0.1% level, and the day $+1$ AAR is 1.13% with a t-statistics of 5.98 significant at 0.1% level. The sign test shows that on day 0 , 55% of the firms' AARs are positive, and the remaining negative. On day $+1$, number positive is 62% and the number negative is 38% with a Z-statistic of 3.58 significant at 0.1% level. These results conclusively prove that the stockholders of the firms undergoing stock repurchases reap positive abnormal returns on the announcement day, and the day following.

5.2.2 Cumulative Average Returns to the Stockholders

The Cumulative Average Residuals (CARs) for various intervals are presented in Table 3.

Insert Table 3 Here

Among the various intervals presented, of relevance and importance are the intervals $(-1, +1)$, and $(-1, +2)$. The CAR $(-1, +1)$ is 1.69% , which is significant at 0.1% level. The CAR for the interval $(-1, +1)$ is 1.69% and significant at 0.1% level. For both of these intervals, the number of firms experiencing positive CARs, outnumber the ones experiencing negative CARs, and the sign-tests are highly significant as well. Significant positive CARs are also evidenced for the interval $(-5, +1)$ as well. The results of CARs analysis reinforce the earlier results from the AARs.

5.3 Motives for stock repurchases by REITs

The motivations for the stock buy-backs by REITs are analyzed in a multiple regression framework. The results from using the day 0 Average Residuals for a given firm as dependent variable are presented in Table 4.

Insert Table 4 Here

In this table, underperformance, capital restructuring, and free cash flow motives are further explored. The overall model has an F-value of 6.99 significant at 0.01% level. The coefficient for the gross profit margin (a proxy for performance or profitability) has a slope coefficient of -0.06618 significant at 0.01% level. This significant negative relation with gross-profit margin implies that firms

undertaking stock repurchases have low gross-profit margins, and they are doing poorly. The coefficient for the long-term debt to equity ratio is -0.00654 also significant at 0.01% level. There is a significant negative relation between debt levels and abnormal returns. Thus, it seems that prior to buybacks, REITs had low debt levels, and they are pursuing stock buybacks to increase the level of debt and restructure their capital. Finally, the coefficient for the free cash flow variable is 0.0343 significant at 5% level. Firms with higher free cash flows are resorting to stock repurchases, thereby passing along the profits to stockholders.

Table 5 presents the results of regression analysis with the Car (-1, +1) as the dependent variable. The independent variable, gross profit margin is significantly negative as before

Insert Table 5 Here

implying that the firms resorting to stock repurchase have been not doing well on the revenue front. There is significant positive relation between the CAR (-1, +1) and the free cash flow. Stockholders of the firms with excess free cash flows reap higher CAR. The coefficient for the price to book ratio is significantly negative indicating firms undertaking stock repurchases are under-performing.

6. Summary and Conclusions

This study addressed the effects of stockholder wealth effects of and motivations for stock repurchases by REITs. 149 stock repurchases covering the period 1998-2002 constitute the sample. Using standard Market Model, AARs and CARs for various intervals have been computed. The results show that the stockholders earn significant abnormal on the announcement day and the day following. The CARs for the interval (-1, +1) and (-1, +2) are significantly positive as well. Multiple regression studies of both the ARRs and CARs provide support for the motives of 1. under-performance 2. free cash flow and 3. debt restructuring motives.

References

1. Chan, Su Han, John Erickson and Ko Wang (2003) *Real Estate Investment Trusts*, London: Oxford University Press.
2. Cudd, Mike, Rakesh Duggal and Salil Sarkar (1996) Share Repurchase Motives and Stock Market Reaction, *Quarterly Journal of Business Economics*, 35 (2), 66-75.
3. Dann, L. (1991) Common Stock Repurchases: An Analysis of Returns to Bondholders and Stockholders, *Journal of Financial Economics*, 9, 113-138.
4. Derso, Elaine E.(2000) Stock Repurchases: Are They Paying Off? *Real Estate Portfolio*, p. 3.
5. Dittmer, Amy K. (2000) Why Do Firms Repurchase Stock? *Journal of Business*, 73 (3), 331-355.
6. Feuerstein, Amy, REITs Battle Stock Slump with Buy-back Strategy (1999) *San Francisco Business Times*, May 10.
7. Hensell, Lesley, REITs in the Market for Their Own Shares (2001) *Realty Times*, September 19.
8. Hertzfel, Michael and Prem C. Jain (1991) Earnings and Risk Changes around Stock Repurchase Tender Offers, *Journal of Accounting and Economics*, 14, 253-274.
9. Masulis, R. (1980) Stock Repurchases by Tender Offer: An Analysis of the Causes of Common Stock Price Changes, *Journal of Finance*, 35, 305-319.
10. Mattson-Reig, Beth (2000) REITs Explore New Capital Strategies, *Retail Traffic Magazine*, June 1.
11. McNally, William J. (1999) Open Market Stock Repurchase Signaling, *Financial Management*, 28 (2), 55-67.
12. National Association of Real Estate Investment Trusts, <http://www.nareit.com>
13. Opler, Tim and Sheridan Titman (1996) Financial Distress and Capital Structure Choice, *Research in Finance*, 4 (1), 1-12.
14. O'Reilly, Brian (2002) "The Property Master," *Fortune* 28 Oct, p. 76-78.
15. Pettit, Justin (2001) Is a Share Buyback Right for Your Company? *Harvard Business Review*, April.
16. Raad, Elias and H. K. Wu (1995) Insider Trading Effects on Stock Returns Around Open-Market Repurchase Announcements: An Empirical Study, *Journal of Financial Research*, 18 (1), 45-57.
17. Stephens, Clifford P. and Michael Weisbach (1998) Actual Share Re-acquisitions in Open-Market Repurchase Program, *Journal of Finance*, 53 (1), 313-333.
18. Vermaelen, T. (1981) Common Stock Repurchases and Market Signaling: An Empirical Study, *Journal of Financial Economics*, 9, 139-183.

Appendices

TABLE 1. Sample Statistics: Selected Data on the total sample (\$ Millions)

	Mean	Median	Maximum	Minimum
<i>Total Sample = 141¹</i>				
Total assets	1832.08	1164.51	1.01	14261.29
Annual revenues	257.33	161.55	1.24	3564.00
Market capitalization	65.015	52.85	2.44	379.96
Total Equity	764.72	391.68	-0.65	7050.96

¹ Non-availability of COMUSTAT Data reduced the sample from 149 to 141 here.

TABLE 2. Market Reaction to the Stock Repurchase of Stock By REITs: AARs*

Day	Average Abnormal Return	Median Abnormal Return	t-Statistics	# Positive: Negative	Z-Statistics
-5	-0.08%	-0.12%	-0.41	70:78	0.05
-4	-0.49%	-0.38%	-2.59**	63:85	-1.11
-3	-0.49%	-0.07%	2.58**	71:78	0.13
-2	-0.33%	-0.24%	-1.75	65:84	-0.85
-1	-0.08%	-0.04%	0.44	73:76	0.46
0	0.64%	0.15%	3.36***	82:67	1.94*
+1	1.13%	0.83%	5.98***	92:57	3.58***
+2	0.01%	0.18%	0.06	82:67	1.94
+3	0.16%	-0.08%	0.87	72:77	0.30
+4	-0.27%	-0.57%	-1.45	57:92	-2.17***
+5	-0.11%	-0.23%	-0.56	61:88	-1.51

*The table displays the daily abnormal returns (AARs) to stockholders of REITs following stock repurchases. Day 0 is the announcement day. The sample consists of 149 REITs.

*** Significant at 0.001 level, ** Significant at 0.01 level, * Significant at 0.05 level

TABLE 3. Market Reaction to the Stock Repurchase of Stock By REITs: CARs*

Interval	Cumulative Average Abnormal Return	Cumulative Median Abnormal Return	t-Statistics	# Positive: Negative	Z-Statistics
(-10, +10)	-0.20%	-0.77%	-0.23	71:78	0.13
(-5, +5)	1.06%	1.14%	1.70*	82:67	1.94*
(-5, +1)	1.27%	0.81%	2.55**	85:64	2.43**
(-5, 0)	0.14%	-0.41%	0.31	68:81	-0.36
(-3, 0)	0.70%	0.70%	1.88	84:65	2.27*
(-2, 0)	0.22%	0.29%	0.68	79:70	1.45
(-1, 0)	0.55%	0.16%	2.07	80:69	1.61
(-1, +1)	1.68%	1.13%	5.14***	91:58	3.41***
(-1, +2)	1.69%	1.43%	4.48***	95:54	4.07***

*The table displays the Cumulative abnormal returns (CARs) to stockholders of REITs following stock repurchases. Day 0 is the announcement day. The sample consists of 149 REITs.

*** Significant at 0.001 level, ** Significant at 0.01 level, * Significant at 0.05 level

TABLE 4. Regression Results: Announcement Day Average Residuals

Variable	Coefficient	t-statistics	Significance
1. Intercept	0.03597	25.22	0.0001
2. Gross Profit Margin	-0.06989	16.17	0.0001
3. Long-term to Equity Ratio	-0.00654	10.77	0.0013
4. Free Cash Flow to Sales	0.03403	3.99	0.0477
Overall Model		3.55 (F-Value)	0.001

*The dependent variable is the announcement day Average Residual for a given company. The independent variables are -1 year annual data.

*** Significant at 0.001 level, ** Significant at 0.01 level, * Significant at 0.05 level

TABLE 5. Regression Results: CAR (-1, +1)

Variable	Coefficient	t-statistics	Significance
1. Intercept	0.09165	43.60	0.0001
2. Gross Profit Margin	-0.1095	8.76	0.0039
3. Free Cash Flow to Equity	0.37325	9.23	0.0031
4. Price to Earnings Ratio	0.000604	4.26	0.0419
5. Price to Book Ratio	-0.02897	12.85	0.0005
6. Dividend Payout Ratio	0.00449	7.79	0.0064
Overall Model		6.39 (F-Value)	0.001

The dependent variable is the CAR (-1, +1) for a given company. The independent variables are -1 year annual data.

*** Significant at 0.001 level, ** Significant at 0.01 level, * Significant at 0.05 level