

VALUING A REAL ESTATE INVESTMENT TRUST

Londre Hankins, Wheeler REIT, USA, Lhankins@whlr.us
Carl B. McGowan, Jr., CFA, Norfolk State University, USA, cbmcgowan@yahoo.com

ABSTRACT

In this paper, we combine the Free Cash Flow to Equity Model applied to the Funds from Operations Model (FFO) used by REITs and the Super Normal Growth Rate Model to value a real estate equity trust using data for Acadia REIT for 2005-14. REITs are required to payout at least 90% to shareholders as dividends. Thus, free cash flow to equity is measured by FFO. The super-normal growth model assumes that the REIT will grow at above average rates for five years and then revert to a long-term growth rate. We combined these models to develop a valuation model for Acadia REIT. We find a total market value for Acadia of \$833.64 million.

Keywords: Valuation, Real Estate Investment Trust, Free Cash Flow to Equity, Funds From Operations, Super-Normal Growth Model.

INTRODUCTION

Acadia REIT will be valued using the Free Cash Flow to Equity Method. Corporate financial management theory and stock valuation methods are used to determine the Free Cash Flow to Equity for Acadia. Corporate financial management has the objective of maximizing the value of the firm which is done by maximizing the gain from the use of funds and by minimizing the cost of funds used by the firm. Maximizing the value of the firm is the overall goal of corporate financial management. The value of the firm is measured by the market value of the firm, which is the total number of shares outstanding times the market price per share:

$$\text{Market Value} = (\text{Total Number of Shares Outstanding}) (\text{Market Price per Share})$$

A firm that wants to achieve a higher rate of return will subject the firm to higher levels of risk. A firm that is comfortable with a lower rate of return will assume a lower level of risk. This decision is determined by the financial managers. Decisions made by corporate financial managers fall into three categories: investment decisions, financing decisions, and dividend decisions. Investment decisions determine the types of assets accumulated with in the firm and how Fixed Assets and Current Assets measure up. Financing decisions determine the extent to which the firm uses fixed cost funding such as long-term bonds. As a result, more financial leverage leads to higher return on equity hence, more volatility of return on equity. The dividend decision involves the allocation of funds, however, is not an asset decision and affects financial leverage. A financial statement can be generated from a set of decisions. The degree of operating leverage, the degree of financial leverage, and combined leverage measure the impact of fixed cost assets and fixed cost financing on projected cash flow for the firm. Decision maker's use of the probability distribution of expected future cash flows is used to determine the total market value of the firm. In addition, optimizing the probability distribution of expected cash flows to maximize the value of the firm is the overall goal of financial managers. Hence, this data is based on accounting information provided to decision makers by financial managers as a result, the accounting information must influence decisions, Beaver, Kennely and Voss (1968).

VALUING A SHARE OF STOCK USING THE FREE CASH FLOW MODEL

Valuing a share of stock using the Free Cash Flow Model, is the next step of the analysis. Future Free Cash Flow to Equity (FCFE) determines the value of a share of stock.

$$P_0 = FCFE_1 + FCFE_2 + FCFE_3 + \dots$$

McGowan (2015) points out that since the Free Cash Flow is in the future, each Free Cash Flow to Equity must be discounted to the present time by the cost of equity, k . Granted that, the value of a share of stock is equal to the discounted present value of the future of stream of free cash flow to equity discounted at the cost of equity which is the opportunity cost of funds to the shareholders The discounted Present Value of Future Streams of (FCFE) Discounted at the Cost of Equity is:

$$P_0 = \sum \frac{FCFE_t}{(1+k)^t}$$

If **k** and **g** are held constant the value of investment is equal to the anticipated (FCFE) at time $t=1$, discounted at the cost of equity minus the anticipated growth rate:

$$P_0 = FCFE_1 / (k-g)$$

The use of the FCFE model requires that anticipated FCFE will be greater than zero and that **k** is greater than **g**. For this purpose, FCFE should never equal zero if it did then the value of the firm would be zero. Typically, investors look for high dividend payouts in the future, following the high growth period.

FFO MULTIPLE MODEL

The most commonly accepted and reported measure of REIT operating performance. Equal to a REIT's net income, excluding gains or losses from sales of property, and adding back real estate depreciation, www.reit.com/investing/reit-basics/glossary. FFO multiples are calculated by taking the REIT's closing stock price and dividing it by Funds from Operations per share outstanding.

TABLE 1

FFO Multiple	11.88	13.83	15.50	9.53	11.20	12.53	17.85	24.81	19.59	27.47	16.4
AFFO FFO Multiple	11.88	13.83	15.52	9.53	11.21	12.55	17.88	24.92	19.61	27.58	16.5

Key mean descriptive statistics for Acadia: FFO Multiple 16.4x, market cap \$2.3 billion, FFO growth 10.4%, and institutional ownership 54%.

FFO/AFFO GROWTH

REITs are similar to other firm yet, unique. REITs can be considered as a total return investment in the sense that they pay out most of their earnings each year, and thus are attractive to investors whose principal requirement is income generation and who will likely make their selection primarily on yield. For this reason, investors must understand a REITs terminology to know what to look for when investing. Particularly, Funds from Operations (FFO) measures a REITs appropriate supplemental disclosure of operating performance.

FFO is presented to assist investors in analyzing a firm's performance. FFO is helpful as FFO excludes various items included in net income that are not significant of the operating performance, such as gains (losses) from sales of depreciated property and depreciation and amortization. In addition, Adjusted Funds from Operations (AFFO) is a more precise measure of residual cash flow available to shareholders providing a base to estimate value and future capacity to pay dividends. However this is a measure of cash flow at the property level specifically, from operations not asset sales. All thing considered, the growth of FFO and AFFO depicted the condition of the firm.

TABLE 2

Acadia Realty	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Average
Funds From operations FFO	35,842	39,953	38,417	37,964	49,613	50,458	42,931	48,845	67,161	78,882	49,007
Adjusted Funds From operations AFFO	35,842	39,953	38,360	37,940	49,528	50,403	42,856	48,636	67,110	78,568	48,920

DIVIDENDS GROWTH

REITs often pay out more dividends than are required to by tax rules. REITs pay out more because of agency costs associated with being a publicly traded firm, and shareholders prefer to use dividends as a monitoring device for management investment decisions. This increases the impact of dividend announcements on the stock prices, and provides hard to get information to the market on future earnings of the income producing properties (Wang, 1993).

TABLE 3

Acadia	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	AVERAGE
Dividends	21,869	23,823	26,039	34,710	30,163	28,909	29,033	32,143	44,115	53,210	32,401
Dividends Per Share	0.69	0.75	0.81	1.07	0.76	0.72	0.68	0.61	0.79	0.78	0.77

NET ASSET VALUE (NAV)

The share price is based on NAV. That is, the price that investors pay to purchase a shares is the approximate per share NAV, plus any fees that the fund imposes at purchase (such as sales loads or purchase fees). The price that investors receive on redemptions is the approximate per share NAV at redemption, minus any fees that the fund deducts at that time (such as deferred sales loads or redemption fees). (SEC.gov)

TABLE 4

Acadia Realty Net Asset Value (NAV)/ (NAV) Per Share											Average
NAV	402,579	354,859	411,847	435,804	532,477	587,522	769,309	1,070,256	1,121,588	1,435,957	712,220
NAV Per Share	12.8	11.2	12.8	13.5	13.4	14.6	18.1	20.4	20.2	21.1	15.8

THE SUPER NORMAL GROWTH MODEL

McGowan (2015) shows that the super-normal growth period is the time period during which growth rates will be above average. For this purpose, **k** and **g** are held constant. However, after the super-normal growth period, the long-term growth rate of the firm will be based on the long-term growth rate of the economy. Assuming a constant long-term growth rate an industry usually, computes five years of Super-normal growth:

$$P_0 = \frac{FCFE_1}{(1+k)^1} + \frac{FCFE_2}{(1+k)^2} + \frac{FCFE_3}{(1+k)^3} + \frac{FCFE_4}{(1+k)^4} + \frac{FCFE_5}{(1+k)^5} + \frac{P_5}{(1+k)^5}$$

As a rule, Valuation for a firm consist of computing five years of Super-normal growth and then assuming a constant long-term growth rate. As illustrated by McGowan the free cash flow to equity values for five years are computed using the super normal growth rate g^* , and then the Free Cash Flow to equity for year six is computed using the long-term normal growth rate, g .

- $FCFE_1 = FCFE_0 (1 + g^*)$
- $FCFE_2 = FCFE_1 (1 + g^*)$
- $FCFE_3 = FCFE_2 (1 + g^*)$
- $FCFE_4 = FCFE_3 (1 + g^*)$
- $FCFE_5 = FCFE_4 (1 + g^*)$
- $FCFE_6 = FCFE_5 (1 + g)$

After year five when the growth rate is no longer above average it is considered to return to the normal long-term growth rate. For this reason, a financial analyst can use the simplified model

- $P_5 = \frac{FCFE_6}{(k - g)}$

Cash flows for five years are discounted to present time $t = 0$. Then, future cash flows are discounted at **k**, the cost of equity, and the total years that cash flows will be received in the future. However, the present value of investing is the total of the six present values of FCFE and PV (P_5)

- $PV(FCFE_1) = FCFE_1 / (1 + k)^1$
- $PV(FCFE_2) = FCFE_2 / (1 + k)^2$
- $PV(FCFE_3) = FCFE_3 / (1 + k)^3$

- $PV(FCFE_4) = FCFE_4 / (1 + k)^4$
- $PV(FCFE_5) = FCFE_5 / (1 + k)^5$
- $PV(P_5) = P_5 / (1 + k)^5$

FREE CASH FLOW TO EQUITY

The next step in the analysis of Acadia McGowan (2015) points out an illustration by Damodaran (2006, pp. 491-493). The FCFE model defines FCFE as net income minus net capital expenditures minus the change in working capital plus net changes in long-term debt position.

FCFE FOR ARCADIA

To compute Free Cash Flow to Equity for Acadia. 2005-2014, there are several steps. First, gather the calculated FFO/AFFO. Second, Subtract real estate acquisitions, Change in working capital, Principle Payments. Add, new debt issued and new equity issued to arrive to Free Cash Flow to equity (FCFE). This is also expressed as per share dollar amount and FCFE to FFO, FCFE to AFFO percentage.

METHODOLOGY FOR VALUATION

The first year FCFE calculation is slightly different because we introduce a new mechanism called the stub rate, which is the period between today's date and the end of the fiscal year as the percentage of 365 days. In this new methodology, we have to account for partial FCFE in the first year by multiplying annual FCFE to the stub rate because we can only include "future" cash flow in our calculation. Traditional models discount all cash flows to the end of the fiscal year, but the new approach allow users to discount all future cash flow to the day you are using FCFE. (nvest.me)

DISCOUNT FACTOR

With the stub rate and cost of capital available, we can calculate a discount factor by using the equation $1/(1+Re)Stub$ Rate, so the cash flow is discounted to the present rather than fiscal year end.

TERMINAL VALUE

Terminal value is the present value of all perpetual cash flows discounted to the one year prior to the starting day of the cash flow. For example, most stocks we used 2019 data to calculate terminal value. To computer the terminal value using the equation $FCFE_t / (Re - Growth)$, we arrive at the present value of all perpetual cash flow for 2018. Then we use discount factor for 2018 to discount everything to the present.

To value Acadia, we do an evaluation of the years 2009-2014 with estimated Future Cash Flow to Equity FCFE, and Present Value Cash Flow to Equity PV (FCFE). See table 1-17

TABLE 5
FCFE AND PRESENT VALUE

Period	2009	2010	2011	2012	2013	2014
Free Cash Flow To Equity (FCFE)	24.45	42.37	48.48	55.47	63.47	903.17
Discount Factor	0.9534	0.8869	0.825	0.7675	0.714	0.714
Present Value	23.31	37.58	40.00	42.57	45.32	644.86
					Value	833.64

NOTE: ASSUMPTIONS FOR CALUCULATIONS OF THE TOTAL VALUE OF ACADIA

Value of Equity	903.17
Market Return	0.1063
Return of Equity	0.075
Risk Free Rate	0.0264
Terminal Return on Equity	0.0854

SUMMARY AND CONCLUSIONS

Acadia has managed to increase their rent revenues as well as consistently increase dividend growth, FFO, AFFO, and NAV. As discovered from the analysis from the time periods 2005-2008 Acadia's numbers took a downward sparrow this could be a result of the market crash. However, they have managed to improve in several areas allowing them to continue to grow. When you are ready to invest in a REIT look for growth in earnings, which stems from higher revenues (higher occupancy rates and increasing rents), lower costs, and new business opportunities. It's also imperative that you research the management team. A good management team will have the ability to upgrade the facilities and enhance the services of an underutilized property, increasing demand. At the moment, low inflation and lack of wage growth limits growth potential for REITs. However, they have been performing well in the face of these head winds. The key is to be forward-looking.

REFERENCES

- Anderson, R.I., Lewis, D., & Springer, T.M. (1992), Operating efficiency in real estate: a critical review of the literature. *Journal of Real Estate Literature*. 8 (1), 318.
- Baber, William R., Kim, Jong-Dae, & Kumar, Krishna R. (1999). On the Use of Intra-Industry Information to Improve Earnings Forecasts. *Journal of Business Finance & Accounting*. 26 (9/10). 1177.
- Bauman, W.S., & Miller, R.E. (1997). Investor expectations and the performance of value stocks versus growth stocks. *Journal of portfolio Management*. 23 (3), 57 - 68.
- Bauman, W.S., & Miller, R.E. (1994, March). Security analyst forecasts and the earnings yield anomaly. *Journal of Business Finance & Accounting*. 21 (2), 283 - 293.
- Beaver, W. 1968. The information content of annual earnings announcement. *Journal of Accounting Research* 3, pp. 67 - 92.
- Beaver, William H., John W. Kennelly and William M. Voss. "Predictive Ability as a Criterion for the Evaluation of Accounting Data," *The Accounting Review*, Vol. 43, No. 4 (Oct., 1968), pp. 675-683.
- Behrens, R.J. (1994). Valuation and equity real estate investment trust. *The Appraisal Journal*, 62 (1), 150 - 154.
- Below, S.D., Kiely, J.K., & McIntosh, W. (1996). REIT pricing efficiency; should investors still be concerned? *The Journal of Real Estate Research*, 12 (3), 397 - 412.
- McGowan, Carl B. *Corporate Valuation Using the Free Cash Flow Method Applied to Coca-Cola*, Business Expert Press, 2015.
- McGowan, Carl B., Jr., John C. Gardner and Susan E. Moeller. *The Fundamentals of Financial Statement Analysis Applied to the Coca Cola Company*, Business Expert Press, 2015.

INTERNET REFERENCES

www.reit.com/investing/reit-basics/glossary
www.sec.gov
www.investinganswers.com
bea.gov/national/xls/gdplev.xls
finance.yahoo.com
Treasury.gov
wikipedia.org