Much Discussion on Valuing REITs

Intrinsic	Relative
• Net asset value (NAV) • Discounted cash flow (DCF)	• Trading Comparables • Transaction comparables (Stand-alone metrics such as P/AFFO and AFFO yield)

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Factors Influencing REIT Valuation

- Assets of a REIT are much more liquid than a traditional, non-real estate corporation
- For US companies, the book value approach of GAAP is much more of an impediment as REITs are asset driven
- Management strategy and even brand have become increasingly important with REITs as they focus on earnings and dividend growth

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Some Important REIT Metrics

AFFO (FFO) Payout	Price/AFFO(FFO)	AFFO (FFO) Yield	Total Debt/Market Cap
Dividends/AFFO Measure of sustainability of dividend rate. More important than DPS/EPS	The PE ratio equivalent for REITS	AFFO(FFO)/Price Inverse of the PE. Proxy for cost of equity	All REITs need capital to grow. As leverage increase risk increases. Most REITs are levered between 30% and 60% of capital

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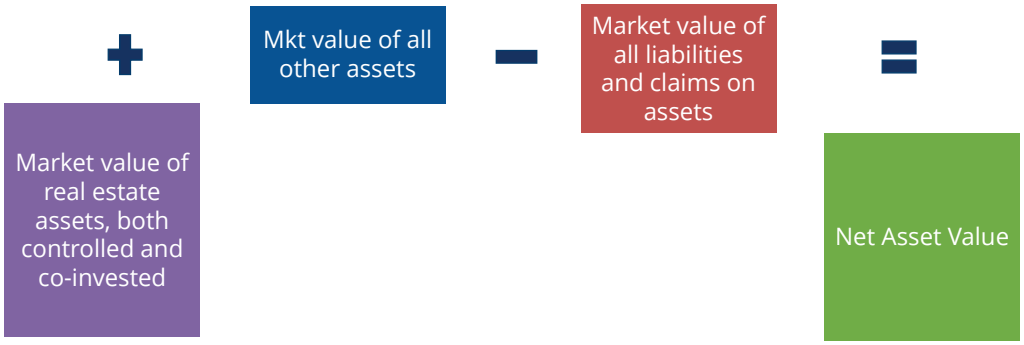
Net Asset Value (NAV)

Based on the premise that a REIT's value is the market value of its portfolio of assets



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Net Asset Value (NAV)

Market value of real estate assets, both controlled and co-invested

- Cannot value the individual properties as there are too many. Much more efficient to value by segments.
- As all sound valuation techniques are forward looking, we need a one-year forward estimate of earnings by segment
- Cap Rates needed for each segment to apply to forward earnings estimates to derive asset's market value.
- Must also consider the properties in development, redevelopment, as well as those that are still stabilizing.

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Step 1: Value the Operating (Real Estate) Assets

Capitalized Income:	Assumed Cap Rate:	12-Month Forward NOI:	Current Value:
NOI Contribution from:			
Real Estate Properties	5.5%	$300	**$5,455**
Equity, co-invested and JV investments	6.0%	10	**167**
Third-Party Management Fees:	15.0%	5	**33**
TOTAL			**$5,655**

Apply cap rates to each segment of stabilized income streams (the more detail the better) and also include any management revenues

Consider deducting maintenance capex from NOI of RE properties

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Step 2: Add Market Value of Other Assets

Other Assets (non-operating and non-RE)	Balance Sheet Value	Market Value as % of BV	Current Value
Construction in Progress	500	110.0%	**$550**
Land Held for Development	300	105.0%	**315**
Real Estate Assets Held for Sale	200	100.0%	**200**
Cash & Cash-Equivalents	180	100.0%	180
Equity, co-invested and JV investments	150	0.0%	-
Capitalized Financing Fees	20	100.0%	20
Accounts Receivable, Net	100	100.0%	100
Prepaid Expenses & Other Assets	150	100.0%	150
TOTAL			**$1,515**

We value the Equity/JV at 0 since we already calculated their value using NOI

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Step 3: Subtract the Market Value of Liabilities and Other Claims

Liabilities and other claims on assets	Balance Sheet Value	Market Value as % of BV	Current Value
Total Debt	$2,000	100.0%	$2,000
Accounts Payable	100	100.0%	100
Accrued Expenses & Other	200	100.0%	200
Noncontrolling Interests (Excl. OP)	100	100.0%	100
Preferred Stock	-	100.0%	-
TOTAL			**$2,400**

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Step 4: Calculate NAV and NAV/Share

Balance Sheet	Current Value
Real estate asset value	$5,655
Plus: Value of other assets	1,515
Less: Value of liabilities and other claims on assets	2,400
Net Asset Value	**$4,770**
Fully diluted shares:	250
NAV/Share	**$19.08**

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Many Ways to Approach REIT Valuation

Intrinsic	Relative
• Net asset value (NAV) • Discounted cash flow (DCF)	• Trading Comparables • Transaction comparables • Stand-alone metrics such as P/AFFO and AFFO yield

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Comparables work the same with REITs as other Industries

1. Identify the comp set (by size, by sector, by lease type, etc.)
2. Pull the data and scrub, scrub, scrub
3. Identify any outliers
4. Analyze for trends and drivers
5. Apply the chosen multiple to the target to find implied share price, EV, etc

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Trading Comparables

AFFO or FFO Multiplies more common

Operating Statistics:				Capitalization				Leverage				
		Share	Diluted	Equity	Enterprise	RE	Portfolio	(Debt to	EquityValue/AFFO		EV/EBITDA	
Company Name	Ticker	Price	Shares	Value	Value	Assets	Cap Rate	TMC)	Proj16	Proj17	Proj16	Proj17
Avalon Bay	AVB	$ 170.06	138.5	$ 23,555	$ 30,368	24,567	5.1%	22.1%	22.2 x	20.2 x	20.5 x	18.9 x
Camden Property Trust	CPT	$ 80.81	91.6	7,400	10,338	8,444	5.7%	28.4%	20.7 x	20.6 x	19.5 x	18.2 x
Equity Residential	EQR	$ 64.42	380.3	24,500	33,524	27,206	5.0%	25.7%	22.4 x	20.9 x	19.5 x	18.5 x
Essex Property Trust	ESS	$ 209.34	67.8	14,200	20,313	16,391	4.9%	29.3%	20.7 x	18.9 x	19.3 x	18.3 x
UDR, Inc.	UDR	$ 44.89	222.8	10,000	14,218	11,669	5.2%	29.3%	20.9 x	19.5 x	19.8 x	18.6 x
Maximum		$ 209.34		$ 24,500	$ 33,524	$27,206	5.7%	29.3%	22.4 x	20.9 x	20.5 x	18.9 x
75th Percentile		170.06		23,555	30,368	24,567	5.2%	29.3%	22.2 x	20.6 x	19.8 x	18.6 x
Median		**$ 80.81**		**$ 14,200**	**$ 20,313**	**$16,391**	**5.1%**	**28.4%**	**20.9 x**	**20.2 x**	**19.5 x**	**18.5 x**
25th Percentile		64.42		10,000	14,218	11,669	5.0%	25.7%	20.7 x	19.5 x	19.5 x	18.3 x
Minimum		44.89		7,400	10,338	8,444	4.9%	22.1%	20.7 x	18.9 x	19.3 x	18.2 x

Implied based on Forward NOI projection

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WACC Definition

Cost of debt * Proportion of debt + Cost of equity * Proportion of equity = Weighted average cost of capital - WACC

The valuation is very sensitive to WACC
Cost of net debt and especially cost of equity are difficult to accurately calculate

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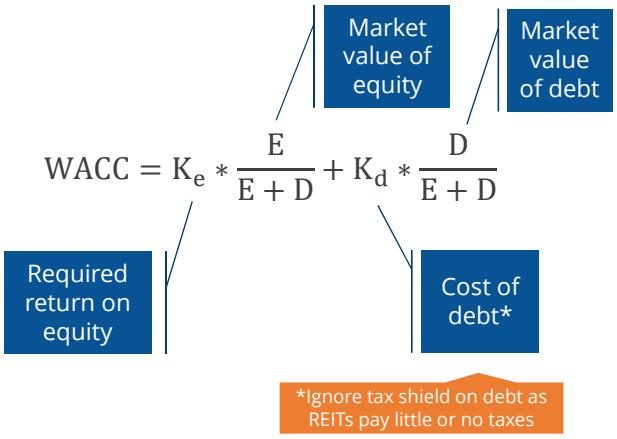
WACC Formula



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Cost of Equity – CAPM

$K_e = r_f + \beta \times (r_m - r_f)$

The return investors require for taking "no" risk. Typically 10 year benchmark government bond yields

Risk free returns (r_f)

+

The additional risk investors require to compensate for non-diversifiable, stock specific risk

The additional risk investors require to invest in the overall stock market

Risk premium for taking equity risk ($r_m - r_f$)

x

Beta adjustment
>1, riskier
<1, less risky.
REIT betas tend to be <1

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Cost of Equity Very Difficult to Calculate

- Nominal rates such as Cap Rates and FFO yield are based on current or one-year earnings and true Ke which is long term
- Real estate is very sensitive to interest rates and periods of rising or falling rates can change value and returns immensely
- REIT returns are also affected when expected returns of other investments fall

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Cost of Debt

Only use BS numbers as a last resort!

Publicly traded debt	Rated debt but not publicly traded	Not rated, not traded
• Use observed market data	• Benchmark to similar credits	• Benchmark to companies with similar risk profiles

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Capital Structure – Current Versus Target

WACC calculation should be based on target capital structure

A peer group analysis can give guidance as to expected long term capital structure

	Debt / (debt + equity)
Avalon Bay	22.1%
Camden Property Trust	28.4%
Equity Residential	25.7%
Essex Property Trust	29.3%
UDR, Inc.	29.3%

Outlier

The apartment sector comparables indicate that the optimal capital structure for the industry is 25 – 30% debt / capital

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DCF Steps are Same in REITs

1. Forecast free cash flows to steady state (normally 5 or 10 years)
2. Calculate weighted average cost of capital (WACC)
3. Calculate terminal value
4. Discount cash flows to today
5. Walk from enterprise value to implied share price using the bridge

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Three Main Differences for DCF with REITs

Use of AFFO instead of FCF	Use of FCFE	Issuance of Equity
• Many analysts believe that AFFO is an appropriate substitute for FCF as taxes do not factor in with most REITS	• Many consider appropriate for REITs as they have stable cash flow, stable balance sheets, and significant leverage • If using FCFE, we only use Ke, not WACC	• Whichever method you are using, FCFF or FCFE, you must account for equity dilution as shares must be issued to achieve any future growth

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FCFE vs FCFF

Free Cash Flows to Equity	Free Cash Flows to Firm
(+) Operating cash flow	(+) Revenues
(+/-) Investing cash flow	(-)Operating expense
(+) Issuances of Common/Preferred	(+) Depreciation/Amortization
(-) Preferred dividends	(+/-) Changes in OWC
(-) Deferred financing fees	(-) Recurring capex
(+) Debt borrowings	(-) Acquisitions
(-) Mandatory debt repayments	(-) Developments
	(+) Proceeds from sale of assets

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Calculating Diluted Shares for DCF

	Year 1	Year 2	Year 3	Year 4	Year 5
Cash flow from financing					
Issuance of debt	31,299	33,929	30,759	28,463	26,523
Issuance of equity	31,299	33,929	30,759	28,463	26,523
Dividends paid to common	(604,487)	(636,501)	(659,728)	(684,389)	(710,530)
Distributions paid to NCI	(26,979)	(27,527)	(27,852)	(27,452)	(27,610)
Total cash flow from financing	(568,867.7)	(596,169.7)	(626,062.4)	(654,915.6)	(685,094.0)

In a REIT forecast, an assumption must be made for both equity and debt financing as asset growth cannot be sustained by debt alone

Share Price as of Valuation Date:	$ 152.71
Fully Diluted Shares	65,786
Cost of Equity	7.0%
PV of Future Stock Issuances	368,329
PV of Terminal Value of Stock Issuances	1,056,137
NPV of Issuances	1,424,466.3
Estimated number of Future Shares to Be Issued	9,328
Total Shares Outstanding:	**75,114**

The projected stock issuances from Operating Model above will be discounted back as a DCF at Ke. A terminal value will also be calculated based on a "steady state" equity issuance

The net present value of the future stock issuances is divided by current share price to derive the number of new shares that will eventually dilute current owners

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