



REIT valuation



Real estate capital markets (RE740)

(a) Basics



Basics

- **Real Estate Investment Trusts**
 1. buy, sell and hold real estate assets on behalf of a diffuse shareholder base
 2. manage these and other assets
 3. **are not taxed at the corporate level**
- Three basic types: equity, mortgage, hybrid
- Can be public or private
- UPREITs (U for “umbrella”) hold positions in corporations that invest in real estate, including other REITs

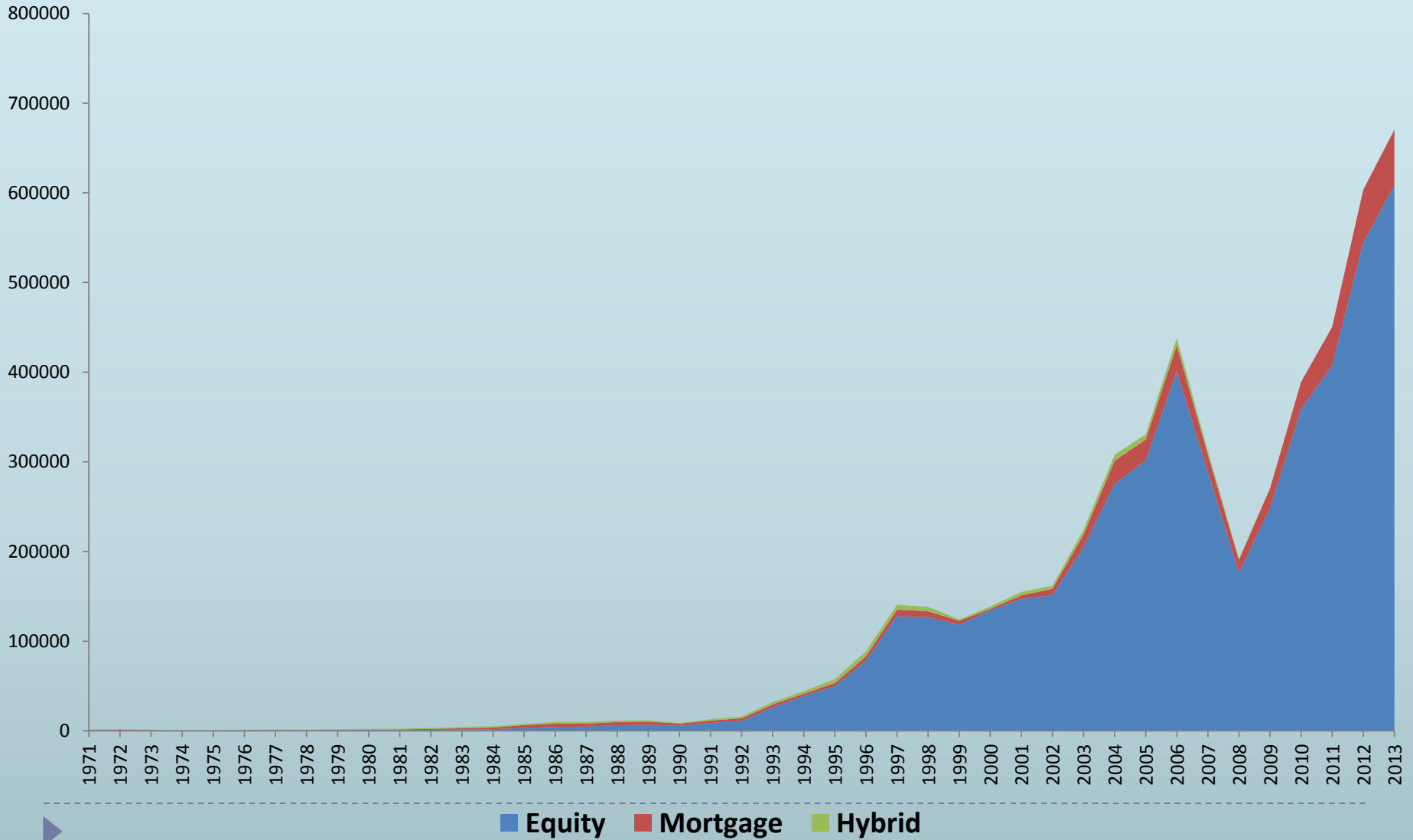


Brief history

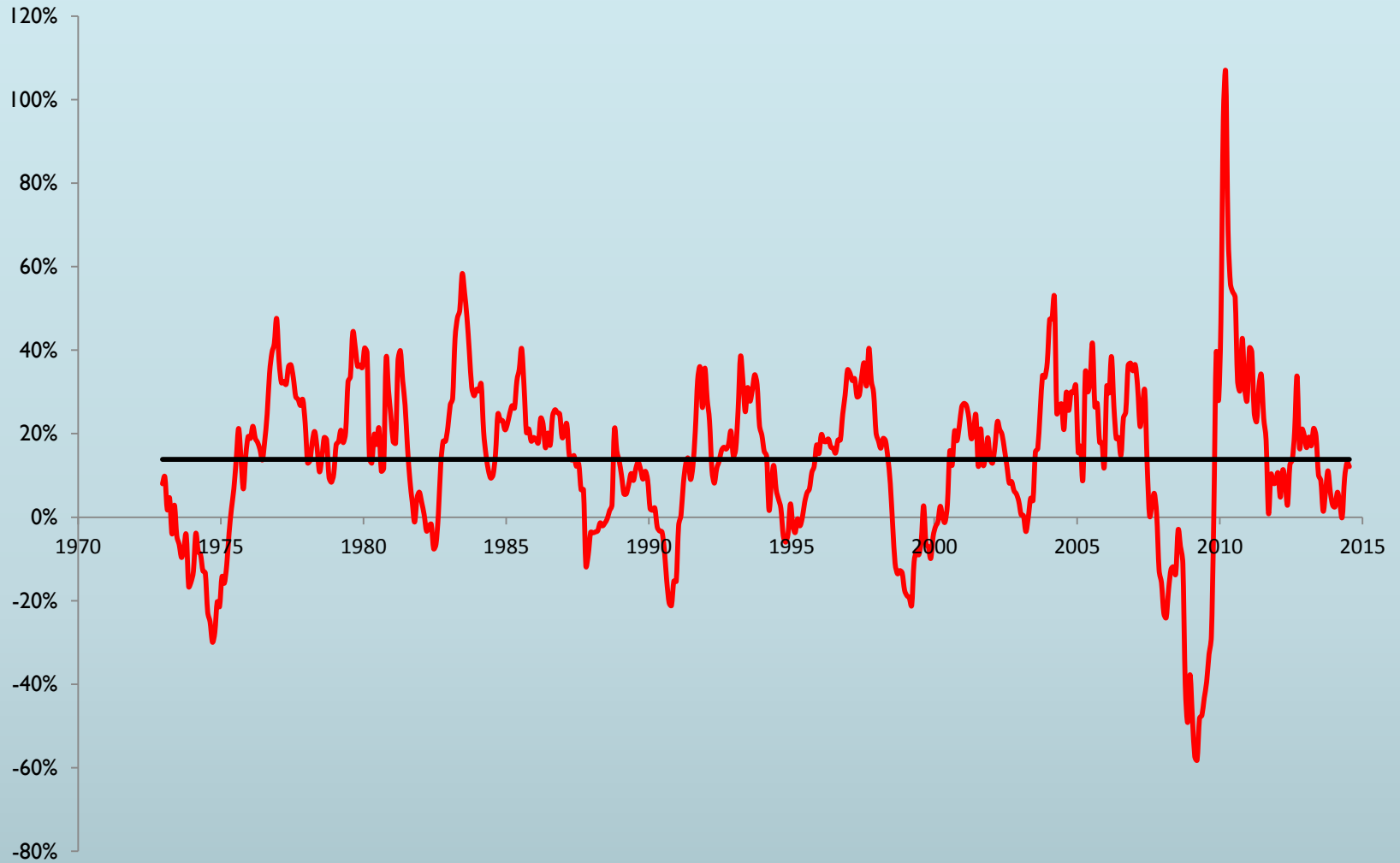
- REIT act, 1960: REITs may be treated as untaxed, pass-through entities provided they satisfy a number of requirements
- Current requirements include:
 1. 75% of holdings in RE, cash, or US paper
 2. 75% of income must come from rents, dividends, mortgage interest, gains from the sale of qualifying assets or holdings in other REITs
 3. **90% of taxable income must be distributed to shareholders***
 4. At least 100 shareholders
 5. Top 5 holders cannot hold more than 50% of shares
- 1986 tax reform removed two big downsides of REIT structure:
 1. Management activities were severely restricted
 2. Other forms of incorporations (LPs, especially) enjoyed preferential depreciation rules
- 1991 Kimco Realty IPO ushered in a new era for REITs



Market capitalization of Public REITs



Historical 12-month returns (e-REITs)



(a) Financial metrics



Standard ratios

- REITs prepare the same accounting statements as all corporations hence standard financial management principles apply
- As usual, a quick snapshot of financial situation should center on:
 1. Profitability and market ratios (EPS, ROIC, operating margin...)
 2. SG&A/Revenues (!!!!! = the cost of operating as a REIT)
 3. Leverage ratios (D/E, DCR...)
 4. Payout ratios and dividend yields



Principles of valuation

- Firm value = Value of Operating Assets
+ Value of Non-Operating Assets

- REIT Value = Value of Revenue Generating Properties
+ Value of Management Services
+ Value of Land and Properties under development
+ Value of other idle assets (cash, e.g.)



Valuing operating assets (a la McKinsey)

- Value of Operating Assets = PV of FCFF at WACC
- Return on Invested Capital (ROIC)
 - = $(\text{NOI}^* - \text{Depreciation}) / (\text{Invested Capital})$
 - = Net operating profits / IC
- Net Investment (NI)
 - = NOP x Investment Rate
 - = Gross Investment – Depreciation
 - = Addition to IC
- **Note:** FCFF = NOP – NI
- **Note:** analysis usually uses NOPAT rather than NOP, but T=0 for REITs, except for operating taxes already included in NOI
- **Also note:** IC is invested capital in operating assets, making NI the change in IC (Watch out for double-counting!!!!!!)



Basic sources of value

Assume that IR, ROIC are constant and that both NOP and FCFF grow at rate g . Then, one shows:

$$g = \text{ROIC} \times \text{IR}$$

and

$$\text{Value of OA} = [\text{NOP} \times (1 - g / \text{ROIC})] / [\text{WACC} - g]$$

so that

$$\text{NOP multiple} = [(1 - g / \text{ROIC})] / [\text{WACC} - g]$$



Stable companies: the 10mn-route to value

- Define IC = Property / Plant / Equipment, Total (Net)
- (Land held for dvpt/invnt + Construction in Progress)
+ Working Capital
- NOP = NOI - Depreciation
- NI = Change in IC
- Calculate 5-year average of ROIC, IR, use to guess g. Get NOP multiple (req WACC.)
- Value of firm = NOP x multiple + Value of other assets*
- Subtract market value of debt, divide by number of shares, compare
- Bim boom, badaboom: value-per-share estimate in 10 clicks



ROIC vs. WACC

- A company creates value by investing if and only if
 $ROIC - WACC = \text{Economic Value Added (EVA)} > 0$
- Ideally, ROIC on new investment vs. “target” WACC
- Bloomberg provides a snapshot of all these objects (<WACC>) and the spread between them, but you need to check them
- Should be part of any fundamental analysis



REIT-specific measures: FFO and AFFO

- FFO (Funds from operations), the industry's preferred measure of earnings, is a moving target, read statements carefully

- FFO* = Net income
 - Gains (Losses) from sales of property
 - + Depreciation/Amortization
 - + FFO from joint-ventures
 - (\approx EBITDA+FFO from joint-ventures-Interest)

- AFFO = FFO
 - recurring CAPEX
 - + Adjustments for accrual items
 - (\approx FCFE?)



FCFF and FCFE

- Somewhat oddly, the industry takes AFFO as FCFE and uses it as the basis for most DCF or multiple analysis (Why?)
 - FCFF and FCFE can be (should be) computed according to standard approach
 - FCFE =
Net increase in cash and cash equivalent
+ Distributions to **common** shareholders
- Net Proceeds from **common** share issuance
 - FCFF = FCFE + Interest **-Net Borrowing**
 - Note: AFFO \approx FCFE – Net borrowing + Non-recurring Capex
 - Fine as a proxy for FCFE if capital structure is stable
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Alternatively

- $FCFF =$ Cash Flow from Operations
 - + Interest Paid
 - Net Cash Used for investing Activities

 - $=$ EBITDA
 - Taxes (if there were any)
 - + Accrual (non-cash) expenses
 - Capex
 - Changes to Working Capital

 - $FCFE = FCFF -$ All payments to debt
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Typical accrual corrections

1. Depreciation
 2. Impairment charges (write-offs)
 3. Amortization of deferred costs
 4. Straight-line rent adjustments
- Let the consolidated statement of cash flow do the leg-work for you, but do read footnotes



(a) Multiples



A very odd question

- What is a REIT worth?
- Question makes sense for a private REIT, but for a public REIT?
- What is wrong with market cap? How on earth could an analyst know better than a continuum of people who are putting their money where their mouth is?
- So why do we play along?
 1. That's what equity analysts do and we need to understand what equity analysts do
 2. Yields interesting questions: why do some REITs trade at low FFO multiple? What creates value?
 3. A useful framework for thinking of company's strengths and vulnerabilities



Method

- Compute the ratio of:
 1. market cap to FFO
 2. EV to EBITDA
 3. EV to NOP
- Then, compare to peers, and to own history
- Trivial, yet compelling
- What determines multiples? (Research and use in your analysis/presentation)



(a) NAV



Method

- Break down operating revenues in subcategories, preferably in 12-month looking forward terms:
 1. NOI by segment and location
 2. Management income
 3. Unconsolidated JV income*
- Apply relevant cap rates to each, be very conservative for last two (20% cap rate, say)
- Estimate value of inactive assets: undeveloped land. Watch out for land impairment provisions (read footnotes and pay attention to consolidated statement of cash flows.)
- Add up to get Gross Asset Value, subtract market value of debt* to get Net Asset Value
- Compare NAV premium/discount to peers and own history
- Massive sensitivity analysis is a must



Impairment charges

- GAAP requires that companies estimate fair value of assets and write-off big losses vis-à-vis book value
- Most REITs recognized massive impairment charges in 2009
- For those, book value may approximate fair value decently
- Impairment tests are weak however and only require action when gap between book and future cash flows is severe (we're ok at this juncture in most cases)
- Note for future reference: past impairment losses may be reversed



Market value of debt

- Assume that the company got finance from a zero with 10 years to maturity issued at a yield of 5%
- A ten year zero for this firm would now cost 10% (what could cause this?)
- The ratio book value to market value is $(1.1/1.05)^{10}$
- Conclusion: adjust book value of debt whenever the cost of debt has changed significantly due to market conditions or firm events
- If only Bloomberg did it for us...



(a) DCF



Method

- Calculate current FCFE and FCFF
 - Project forward (i. naively, ii. fundamental item by fundamental item)
 - Calculate cost of equity (CAPM, 3-Factor model) and cost of debt
 - Discount FCFE at required return on equity, discount FCFF at WACC
 - Get two market numbers for each set of parameters, plus get two growth rates implicit in current valuation
 - Perform massive sensitivity analysis, compare to NAV numbers, discuss, do the same assuming that AFFO is FCFE...
 - Compare premia and discounts to peers and history, explain differences
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How to forecast FCFF an or FCFE

- Start from the top: revenue growth
- Then, provided other basic components of FCFF are a stable fraction of revenues, impute them
- Otherwise, forecast them separately too



Factor approach

- Decide what main factors drive revenues within the set for which readily available forecasts exist: GDP, IP, PCE...
- Estimate the historical relationship of revenue growth to these factors
- Project forward, with fudge/judgment corrections



Physical approach

- Rental revenues = Capacity (SF) x Rent/SF x (1 - Vacancy Rate)
- Three objects to forecast
- First one is fairly easy to gauge from past behavior and annual report fodder on acquisition plans
- Last two require market analysis, segment by segment



In practice...

- Make explicit forecasts for up to 5 years or use off-the-shelf estimates
- Calculate residual value using standard perpetuity formula
- Defend your g from fundamentals (ROIC and NI)



WACC

- Use current cost of debt and projected cost of debt if available from 10-K
 - Or use industry data (as in Bloomberg)
 - Use CAPM for cost of equity, trying a couple different benchmarks
 - Use book value for D/E ratio first, then measure the effect of market value adjustments for debt
 - Discount FCFF at WACC, discount FCFE/AFFO at the required return on equity
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(a) Analysis



Key problem/opportunity areas

- Tenant quality
- Lease composition (locked-in leases can be both good and bad, depending on market conditions)
- Debt composition (future access to finance and cost)



Sources of value/growth

1. Income from existing properties (ROIC)
2. Acquisitions (NI)
3. Development (NI)
4. Service income (ROIC)
5. Financing (clean up/refinance costly debt, e.g.) (WACC)



Key capital structure issues

- Debt provides no income tax shield for REITs
- Since debt raises expected costs associated with financial distress, why use it all?
 1. Raising equity is expensive
 2. Retained earnings can't possibly cover REIT's investment need given distribution requirements
- Data suggest that markets are comfortable with leverage ratios in the 40 to 50% range
- But composition matters enormously. Investors value (see Prof. Riddiough's work on the issue)
 1. Smooth debt payments and refinancing schedules
 2. Established access to lines of credit
 3. High ratios of unsecured leverage
 4. Low ratios of hybrids



Equity plays

1. Macro plays

- ▶ Assume that you believe/expect/forecast that the consensus view on prospects for a given segment is off
- ▶ Then market values will/should move in a predictable direction
- ▶ Overweight that segment
- ▶ Trade accordingly, pray that you are right and that the market will adjust sufficiently fast

2. Micro plays

- ▶ Same within segments
- ▶ Overweight firms that you think will outperform



Looking back: performance attribution

- It is useful/instructive to understand why various portfolios perform differently from the relevant benchmark
- 3 possible sources:
 1. Allocation (across segments)
 2. Selection (within segments)
 3. Interaction of 1 and 2
- The same question arises at the company level:

Has VNO underperformed broad REIT indices lately because the segments in which it invests have lagged or because it has underperformed within segments?

1.



Conclusion

- Triangulate: measure value in as many sound ways as you can think of
- Focus on critical assumptions and big items, on “what moves the dial” (to quote Mike Dubis, our resident REIT expert)
- *Do not double-count*
- *Use the proper discount rate*
- Compare to peers

