

Advanced Modeling for Holding Company Valuation

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Introduction

- ▶ Holding company valuation largely defined based on distribution of control
- ▶ Structures, ranked by increasing control
 - Limited partnership/LLC
 - Corporation
 - General partnership
 - Common tenancy (real property)

Premise

- ▶ The nature of the asset underlies fact patterns

Buyer's motivation & due diligence is tied to asset

- ▶ Risk and holding period are fundamental interpretations of the facts

Interest holder is blocked from selling—and exposed to risk— until the holder realizes its pro rata share

- ▶ Starting point is asset level of value

Asset-level value (NAV) or yield (Income) methods

Objectives

- ▶ Be able to identify quantitative elements in holding company fact patterns
- ▶ Understand applicability and limitations of discounting models
- ▶ Take home tools applicable for any complex asset-holding company structure

(Assumes working familiarity with control and liquidity discounting models)

Facts & Circumstances

Process of discovering relevant facts likened to the hypothetical buyer's due diligence process:

- What needs to be understood in order to make an informed decision?
- What would affect the interest's value with respect to alternatives?
- What variables would be included in the purchaser's valuation modeling?

Facts & Circumstances

Classifications:

- Assets – real property/balance sheet items
- Owners – those that come with the deal
- Ownership Structure – agreements, legal environment, any de facto realities
- Financial Structure – capital structure/asset financing, distributions

Facts & Circumstances

Quantitative expressions include:

- Asset values
- Cash flows
- Growth rates
- Risk-adjusted yield rates
- Holding period

Holding Period

- ▶ Premise: *The interest holder expects to realize its pro rata share of NAV at some future time*
 - A departure from indefinite life of operating company
 - Real estate assets are naturally connected with time cycles
 - Interest is *illiquid* as sale is *blocked* but is not *marketable*
 - So... What facts would point to the exit?



Holding Period

- ▶ Real property assets
 - Lease turnover
 - Highest & best use differences/changes
 - Possible future development
- ▶ Owners
 - Manager age/actuarial life
 - Willingness to obstruct



Holding Period

- ▶ Ownership structure
 - Remaining term
 - Vote to change/amend agreement
 - Ability to withdraw
- ▶ Financial structure
 - Loan term/balloon payment
 - Mortgage loan prepayment penalty



Valuation Methods

► Income methods

- Partition time and cost ("cost-to-partition")
- Constant growth/present value (QMDM)
- Discounted future returns

Income methods are fundamental, as risk and holding period are basic points of comparison for nearly all applicable methods

Valuation Methods

► Comparative company methods

- Direct sales of fractional interests
- Proxy data – restricted stock transactions
- Short-term liquidating partnerships

► Other methods

- Option trading models

Income Methods

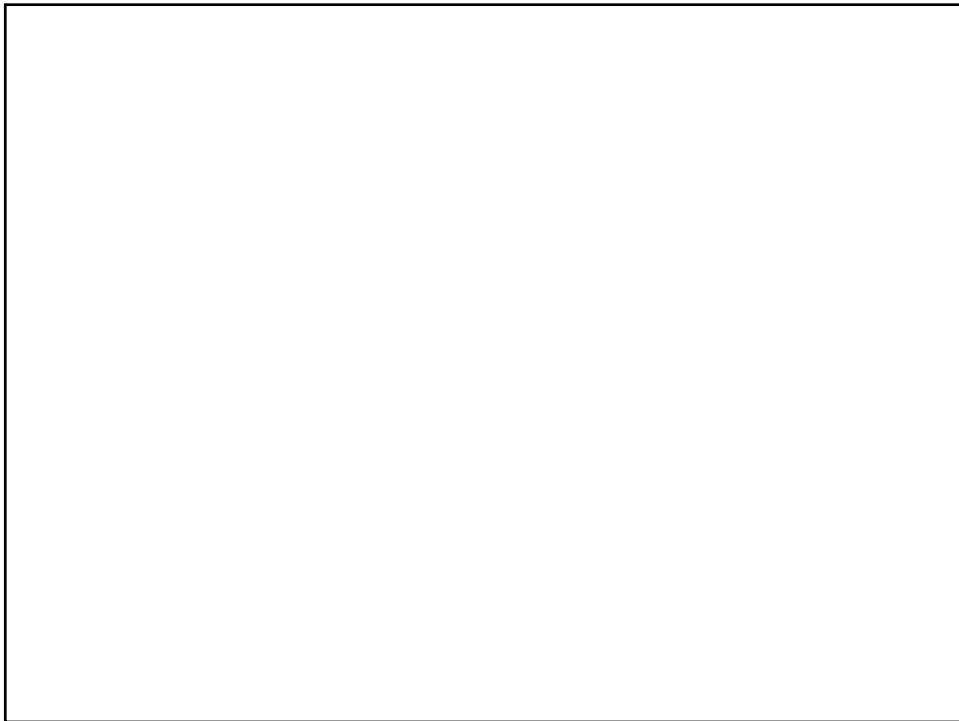
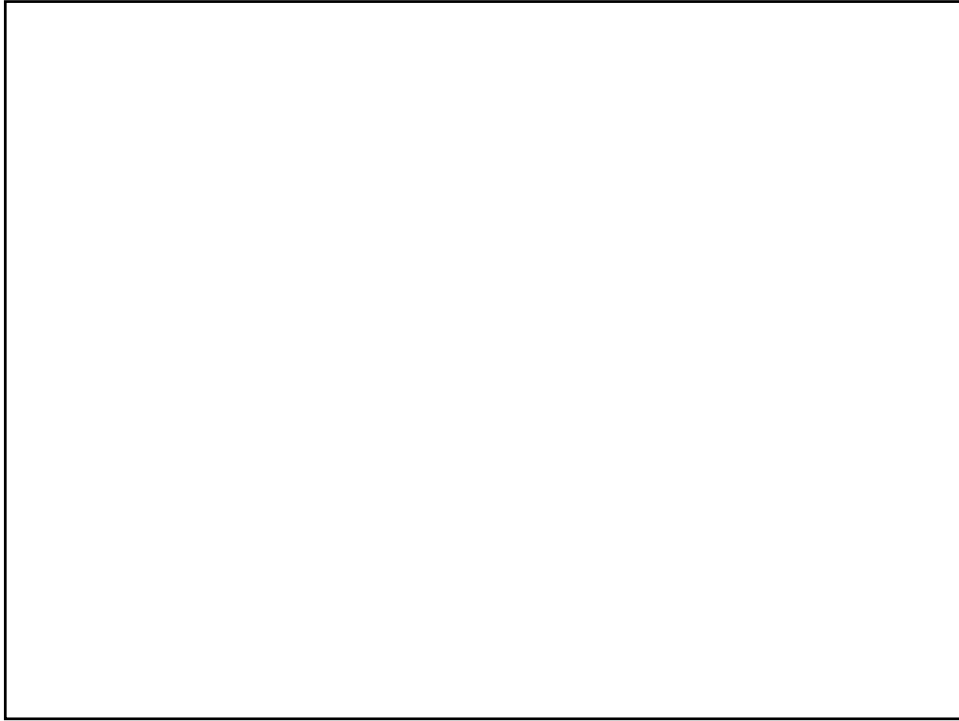
- ▶ Asset/equity-level yield rates
- ▶ Equity risk buildup – control, illiquidity
- ▶ Discounted future returns model
- ▶ Present value/constant growth model
- ▶ Model assumptions and limitations

Income Methods

Asset/equity-level yield rates

Returns of real estate entities have something to do with real property...

- Rates obtained from real estate appraisal
- Rates obtained from investor surveys
- Property yield calculated as IRR or built up
- Equity yield calculated as IRR to NAV
- Determine asset value and CF growth



Income Methods

Control effect/upper limit (ROR Study)

Yield from ROR Study	18.7%
Remove RP influence (KYI)	<u>-11.2%</u>
Non-controlling risk premium	7.5%

Income Methods

Asset/equity-level yield rates

Case facts

- Subject is one of 3 general partners
- Managing partner (not subject) makes day-to-day decisions
- Consent of all needed for major decisions
- Subject cannot force sale of assets but could withhold cooperation (negative control)
- Distribution rate 5.8%

Income Methods

Equity risk buildup – control

Subject equity yield	9.1%
Non-controlling risk premium	7.5%
Adj. for secondary market illiquidity	-0.5%
Adj. for attributes of control	-3.5%
Adj. for distribution rate differential	-0.5%
Adjusted equity yield (control)	12.1%

Income Methods

Equity risk buildup – illiquidity

More case facts

- No option to put interest to other partners
- Property is operated under long-term NNN lease renewable in year 5
- 5-year hold reasonable but uncertain
- Management passive until year 5

Income Methods

Equity risk buildup – illiquidity

Adjusted equity yield (control)	12.1%
Hold period uncertainty	1.5%
Due diligence	0.5%
Business/management risk	1.0%
General unattractiveness	1.0%
Investor's required rate	<u>16.1%</u>

Income Methods

Discounted future returns model

- Equity-level cash flow model
- Accommodates irregular cash flows
- Adjust for non-pro rata splits
- Project balance sheet to get terminal NAV
- Rate buildup covers all levels of value
- Discount from NAV a separate calculation
- Incorporates risks from multiple tiers

Income Methods

Embedded assumptions and limitations

- Income models are investment models
- Rates are from investment market data
- Valid for very long (>10-15 year) holds?
How does the market view distant events?
- Valid for very short (<1-3 year) holds?
An investment? Or, a hedge/option?

Income Methods

Partition time and cost

- Analysis of lawsuit-generated cash flows
- Not an implied asset model (cost-to-partition)
- Yield rate build up for cash flows and terminal proceeds similar to other income methods
- May have multiple \pm cash flow streams, rates
- Add a lawsuit risk premium?
- HEAVILY fact-dependent / lots of assumptions

Comparative Company Methods

Public limited partnerships

Short-term liquidating partnerships

- Partnership Spectrum March/April 2000
- 70 partnerships sold remaining assets 1996-2000
- Liquidation was announced
- Discount was based on estimated distributions

Comparative Company Methods

Public limited partnerships

	<u>10th</u>	<u>Median</u>	<u>90th</u>
Hold period, months	1	2-3	7
Discounts	4.4%	17%	29%

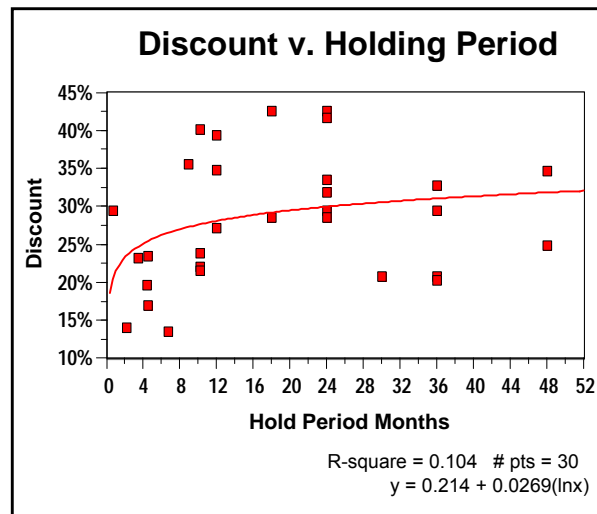
- Distributing partnership discounts average 16%
- Non-distributing discounts average 22%

Comparative Company Methods Public limited partnerships

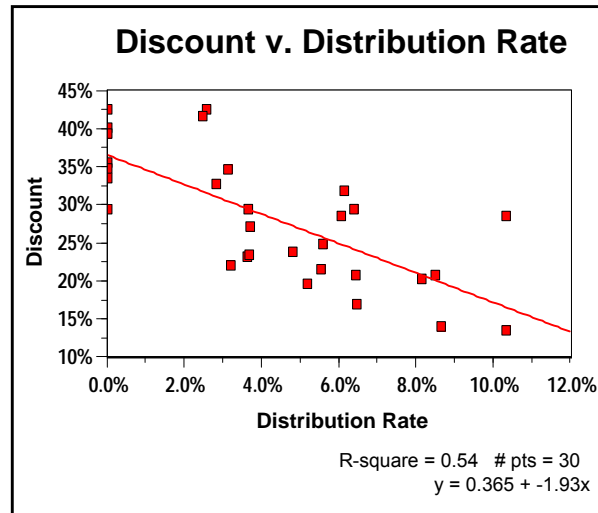
Extended dataset

- Short-term study partnerships
 - ▶ Include those with available distribution data
 - ▶ Exclude extreme outliers
- Short-hold est. partnerships from Spectrum
- Estimated holds 2-3 months to 4 years

Comparative Company Methods



Comparative Company Methods



Comparative Company Methods Public limited partnerships

What is being measured?

- Long-term data models an investment purpose
- Short-term data is a hedge? Arbitrage? An option?
- Do both represent the holding co. interest buyer?
- Are additional adjustments needed for control?

Comparative Company Methods

Public limited partnerships

Adjustment for illiquidity

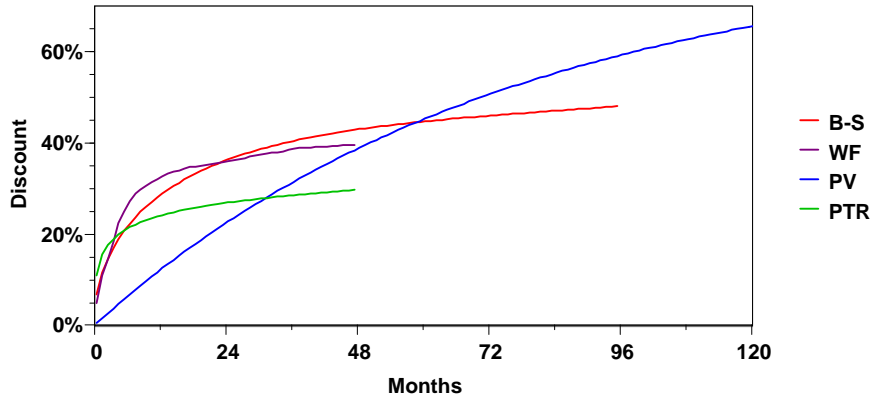
- Arises from non-marketable condition—a blockage that prevents exit at FMV
- Adjust for inability to escape risk during the wait
- Longer-term data may need marketability adjustment
- Plot resembles option model

Options Methods

- Black-Scholes supports the notion of discounts as a function of risk and holding period
- Volatility term issues for private and asset companies
- Work-around: connect yield and volatility
- Study proxy yields vs. volatility
- Direct volatility proxies may be too diversified
- A stop-loss model
- Longstaff look-back put

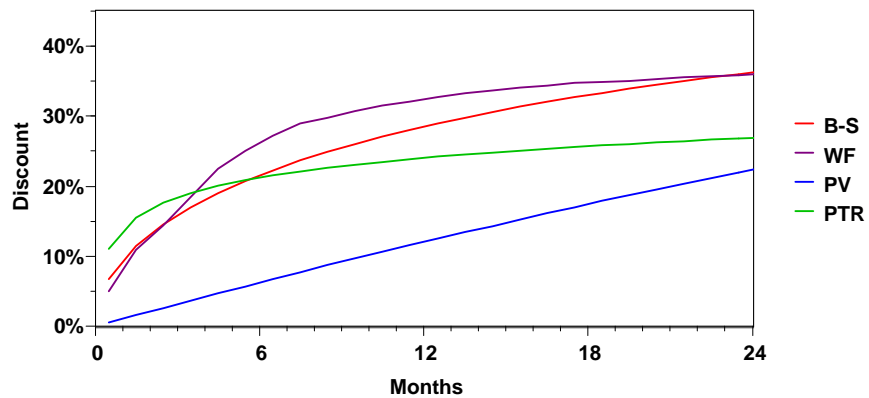
Valuation Methods and Time

Discounts v. Holding Period Long Term



Valuation Methods and Time

Discounts v. Holding Period 2 Years



Conclusions

- ▶ Facts & circumstances drive the entire value analysis and produce holding period and risk measures suitable for quantitative models
- ▶ Models interpret different market behaviors, and vary in their appropriateness and predictive ability

Conclusions

- ▶ Variety of models allows wide range of fact sets to be viewed from different “angles”
- ▶ Tools are sufficient for reliable analysis of all asset holding entities

Thank you for attending!

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