

ABA/IPT Advanced Tax Seminars
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Valuation Issues for Industrial Sites
Income Approach Issues

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Valuation Issues for Industrial Sites
Income Approach Issues
Discussion Outline

1. Income approach to property valuation
2. Generally accepted income approach methods
3. Application limitations regarding industrial facilities
4. Alternative income approach valuation methods
 - Income capitalization/residual value method
 - Profit split method
 - Residual income method
 - Rental income method
5. Discount rate/capitalization rate methods
6. Examples of alternative income approach methods
7. Application limitations to income approach methods



Application of the Income Approach to Property Valuation

The income approach is:

1. best suited to value a fee simple interest in income-producing property.
2. well suited to value real estate (RE) and tangible personal property (TPP) that generate discrete rental income.
3. most applicable to rental property with defined lessor/lessee interests.
4. applicable when there is a defined measure of economic rent:
 - potential gross income (PGI)
 - effective gross income (EGI)
 - net operating income (NOI)



Valuation Issues for Industrial Sites
Income Approach Issues

**Application of the Income Approach to
Property Valuation (cont.)**

The income approach is:

5. applicable when the appraiser can extract a market-derived cap rate:
 - overall direct capitalization rate (R)
 - overall yield capitalization rate (Y)
6. commonly used to value tenant-occupied commercial or residential RE:
 - multi-family apartment buildings
 - office buildings
 - retail shopping malls
 - multi-tenant warehouse buildings
7. used to value leased industrial or commercial TPP:
 - commercial aircraft
 - railroad locomotives and cars
 - mainframe computers



Valuation Issues for Industrial Sites

Income Approach Issues

Generally Accepted Income Approach Methods

Direct capitalization:

$$V = \frac{I}{R}$$

where:

V = value of rental property RE or TPP

I = lessor NOI from rental of RE or TPP

R = overall capitalization rate, typically based on band of investment/mortgage and equity components

Yield capitalization:

$$V = \frac{CF^1}{1+Y} + \frac{CF^2}{(1+Y)^2} + \frac{CF^3}{(1+Y)^3} + \dots + \frac{CF_n}{(1+Y)^n}$$

V = value of rental property RE or TPP

CF = lessor cash flow from rental of RE or TPP

CF_n = property terminal or resale value

Y = overall yield rate, typically based on band of investment/mortgage and equity yield components



Valuation Issues for Industrial Sites

Income Approach Issues

Generally Accepted Income Approach Methods (cont.)

Income approach conclusion applicable:

1. To value discrete RE or TPP only
2. Based on lessor's rental income from RE or TPP only
3. Based on income earned on tenant occupied rental property
4. Capitalized income generated by subject assets (RE and TPP) only—not by diverse bundle of assets
5. Cap rates based on:
 - secured creditor's mortgage rate
 - lessor's required return on property investment
 - mortgagor/lessor mix of debt and equity
6. Cap rates not based on business enterprise debt and equity rates
7. Income measure (RE and TPP rental income) and cap rate (property cap rate) calculated on consistent basis



Valuation Issues for Industrial Sites
Income Approach Issues
Application Limitations Regarding
Industrial Facilities

1. Most industrial facilities are owner-occupied, not tenant-occupied.
2. Most industrial facilities are not rental properties.
3. Many industrial facilities are special purpose—not suitable for alternative tenants/users.
4. Difficult to extract any measure of economic rent—PGI, EGI, or NOI.
5. Difficult to extract lessor/investor expected rates of return—either direct cap or yield cap rates.



Valuation Issues for Industrial Sites

Income Approach Issues

Application Limitations Regarding Industrial Facilities (cont.)

6. Income generated at facility is business enterprise (BE) income—not property rental income.
7. Income generated at facility is due to integrated bundle of assets, including:
 - net working capital (NWC)
 - RE
 - TPP
 - intangible assets (IA)
8. Facility owner's cost of capital is based on (1) unsecured debt, (2) BE equity, and (3) BE debt/equity mix.
9. When BE income used, income approach estimates value of BE, where:
$$BE = NWC + RE + TPP + IA$$
10. Income approach estimates unit value of all BE assets, not summation value of RE and TPP.



Valuation Issues for Industrial Sites
Income Approach Issues
Alternative Income Approach
Valuation Methods

Income Capitalization/Residual Value Method

1. Applications procedures
 - Use yield capitalization or direct cap
 - Use BE NOI or CF
 - Use BE yield/direct cap rate
 - Conclude value of BE operating at facility
2. Application limitations
 - Requires estimate of BE valuation variables
 - Requires estimate of BE yield/direct cap rate
 - Requires valuation of NWC
 - Requires identification and valuation of each IA
 - Intellectual property, including software
 - Customer/supplier relationships
 - Contracts, permits, licenses
 - Assembled workforce
 - Goodwill and going concern value
3. Final adjustment
 - Concludes total value of RE and TPP
 - Must subtract TPP from total to estimate RE
 - Requires TPP value (typically cost approach)



Valuation Issues for Industrial Sites
Income Approach Issues
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Income Capitalization/Residual Value Method (cont.)

4. Simplified illustrative example

$$BE = \frac{\text{Next period CF}}{WACC - g}$$

where WACC is weighted average cost of capital and g is expected growth rate

$$= \frac{\$1,000,000}{10\%}$$

\$10,000,000	BE value
- 500,000	NWC value
- 600,000	Patent value
- 1,000,000	Trademark value
- 400,000	Software value
- 1,000,000	Customer contracts
- <u>500,000</u>	Assembled workforce
<u>\$6,000,000</u>	RE and TPP value
- <u>2,000,000</u>	TPP (based on RCNLD)
<u>= 4,000,000</u>	RE value



Valuation Issues for Industrial Sites
Income Approach Issues
Alternative Income Approach
Valuation Methods

Profit Split Method

1. Application procedures

- Use BE NOI or CF
- Perform “functional analysis” of relative contribution of NWC, RE, TPP, and IA
- Estimate economic rent for each asset class, as percent of BE profit
- Functional analysis based on qualitative assessment of how fungible/unique each asset is
- Conclude profit split percentage for RE and TPP
- Profit split income = total BE income
x profit split %
- Value of RE and TPP = $\frac{\text{profit split income}}{\text{cap rate}}$



Valuation Issues for Industrial Sites
Income Approach Issues
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Profit Split Method (cont.)

2. Application limitations
 - Involves subjective functional analysis, based on qualitative factors and relative contribution to profit
 - Different profit split % results in different values
 - Requires BE yield/direct cap rate
3. Final adjustment
 - Requires final split of RE and TPP—based on profit split% between RE and TPP



Valuation Issues for Industrial Sites
Income Approach Issues
Alternative Income Approach
Valuation Methods

Profit Split Method (cont.)

4. Simplified illustrative example:

-- Profit to be split

\$1,000,000 = BE CF

-- Profit split analysis

5% to NWC

35% to IA

60% to RE and TPP

100% total income

-- Profit split to RE and TPP

\$1,000,000

x 60%

\$600,000

-- Capitalization of profit split income

\$600,000

10%

= \$6,000,000 = RE and TPP value



Valuation Issues for Industrial Sites
Income Approach Issues
Alternative Income Approach
Valuation Methods

Residual Income Method

1. Application procedures
 - Start with BE NOI or CF
 - Conclude value of NWC and each IA
 - Estimate fair rate of return on NWC and IA
 - Calculate fair return (FR) on NWC and IA
 - Subtract FR on NWC and IA from BE income
 - Conclude residual income to RE and TPP
 - Use BE yield/direct cap rate
 - Capitalize residual income by cap rate
2. Application limitations
 - Requires values for NWC and each IA
 - Requires fair rate of return on NWC and IA
 - Requires BE yield/direct cap rate
3. Final adjustment
 - Concludes total value for RE and TPP
 - Need value for TPP (typically cost approach)
 - Need FR on TPP
 - Subtract FR on TPP from BE income
 - Capitalize residual income to RE



Valuation Issues for Industrial Sites
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Residual Income Method (cont.)

4. Simplified illustrative example:

- Total BE income
\$1,000,000 BE CF

- FR on NWC and IA
\$500,000 NWC value
x 6% FR
\$30,000 FR on NWC

- \$3,500,000 IA value
x 12% FR
\$420,000 FR on IA

- Residual income
\$1,000,000 BE NCF
- 30,000 FR on NWC
- 420,000 FR on IA
\$550,000 residual income

- Capitalization of residual income
\$ 550,000 residual income
÷ 10% BE cap rate
\$5,500,000 RE and TPP value



Valuation Issues for Industrial Sites
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Rental Income Method

1. Application procedures
 - Locate comparable rental property
 - Rent expressed on PSF or % of revenue basis
 - e.g., sale/leaseback of industrial/commercial plant, lease of electric utility generation plant
 - Adjust comparable rental rates for size, location, age, condition, etc.
 - Conclude rental rate for subject facility
 - Express rental rate based on common metric—e.g., % of revenue
 - Capitalize rental income by overall cap rate
2. Application limitations
 - Finding comparable rental properties
 - Finding comparable rental rates
 - Adjusting comparable properties to subject
 - Requires property yield/direct cap rate
3. Final adjustment
 - Depending on comparable properties, may conclude value for RE and TPP or RE only



Valuation Issues for Industrial Sites
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Rental Income Method (cont.)

4. Simplified illustrative example:

- Identify comparable rental properties
 - located 4 comparable properties
 - obtained rent formula
 - adjusted comparable rents to subject
 - concluded market rent for subject is 4.5% of revenue
 - subject facility BE revenue \$12,000,000

- Estimate subject potential rental income
 - \$12,000,000 BE revenue
 - x 4.5% market rental rate
 - \$540,000 potential rental income

- Estimate overall property cap rate—based on band of investment method

- Capitalize rental income
 - \$ 540,000 rental income
 - x 9% direct cap rate
 - \$6,000,000** RE and TPP value



Discount Rate/Capitalization Rate Methods

For residual value, profit split, and residual income methods:

- Capitalized income is BE income
- Use BE discount rate/direct cap rate
- Typical discount rate is WACC for BE
- Typical direct cap rate is WACC—
expected growth rate

For rental income method:

- Capitalized income is property income
- Use property yield cap/direct cap rate
- Typical direct cap rate is band of
investment—mortgage and equity
components method
- Typical yield cap rate is direct cap rate
(based on band of investment) plus
expected growth rate



Application Limitations to Income Approach Methods

1. Based on BE income and BE value methods
2. Application of income approach to industrial facility values BE operating at facility
3. Need to estimate BV discount rates/direct cap rates
4. Need to estimate value of non-RE and TPP assets
5. Need to estimate income from non-RE and TPP assets
6. Need to allocate BE value at facility to RE and TPP
7. Objective is to isolate economic rent income related to RE and TPP
8. Taxing authorities typically will use BE income in standard income approach methods
9. Taxing authorities and courts not familiar with income approach adjustments
10. Taxing authorities and courts do not make adjustments for most income producing rental properties



Valuation Issues for Industrial Sites
Income Approach Issues
Summary and Conclusion

1. Income approach applicable to:
 - income producing rental property
 - apartment complexes, office buildings, retail malls
 - lessor/lessee properties
 - property where rental income comes from RE and TPP
2. Income approach methods must be adjusted when:
 - owner occupied property
 - special purpose property
 - property produces BE income, not rental income
 - property where RE, TPP, NWC, and IA function as an integrated unit
 - property produces income—but not rental income
3. Alternative income approach valuation methods:
 - all have application limitations
 - all based on allocation of BE income to RE and TPP rental income
 - all applicable when income approach required by statute, administrative rule, etc.

