

Discounted Cash Flow Modeling in a Distressed Market

Investment Value vs. Market Value

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Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- There are differences and nuances between the different types/concepts of value such as insurable value, assessed value, investment value, use value, and market value.
- One area in which appraisal methodology has blurred the distinction between market value and investment value is in the valuation of income-producing properties that have vacancy/absorption issues.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- The purpose of this paper is to demonstrate that a discounted cash flow (DCF) analysis that models the absorption of a partially leased income-producing property does not produce ***market value*** as most appraisers believe, but rather yields ***investment value***.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Let's start by taking a step back and thinking of a non-financial example to set up this discussion:

- Suppose a house was built without a fireplace
- How would you value this house?



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┌ Do you value the house as if it has the fireplace, but subtract for the cost of building it?

┌ Or....>>>>



Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

┌ Or, do you value the house ***as-is***, without the fireplace?



Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- ┌ Would you pay as much for a house with a fireplace as without a fireplace?
- ┌ If you buy the house today, but do not plan on building the fireplace for 3 years, would you pay today the present value of the house as if it had the fireplace in the future?



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- ┌ Well, of course we value this house as if it had no fireplace.
- ┌ We will come back to this example, but keep it in mind.....



Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

There are two types of Discounted Cash Flow Analyses (DCF):

1) Developed to understand **market value**

Typically produced by appraisers, lenders, and buyers to understand the value as the property transfers to a new owner

2) Developed for asset management

*This type of DCF produces **investment value** to understand the value under current and continued ownership*

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Basic Valuation Premise of a DCF is the ***Principle of Anticipation***

- “Value is created by the anticipation of benefits to be derived in the future.”
- “Value is based on the market participants’ perceptions of the future benefits of acquisition.”

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- † Unfortunately, it is a well-entrenched misconception in a DCF analysis that *any* future benefits accrue to current yield market value...



Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- In our examples today, we will be talking about a property that is partially leased today.
- It is anticipated that the property will be leased over the next two years to achieve stabilized occupancy.
- The current owner has gotten the property two-thirds leased (66.67%)
 - 40,000 square feet leased of a possible 60,000 square foot building

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- Today, the seller is wanting to sell the property.
(Remember -- It is two-thirds leased)
- How much is the property worth?
 - What analysis would the typical appraiser do?

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Example of a very generic Discounted Cash Flow model (DCF)

Basic Valuation Assumptions

Market rent	\$16.00
Inflation	0%
Rent increases	None
Fixed operating expenses	\$3.00 per sq. foot
Variable operating expenses	20% of gross income
Leasing expenses	20% of first year's rent
Management fees	5% of gross income
Current capitalization rate	6.0%
Reversion capitalization rate	6.0%
Internal Rate of Return (IRR)	7.5%

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

	Year 1				Year 2				Reversion
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
Income									
40,000 sf occupied	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 640,000
10,000 sf vacant	0	0	40,000	40,000	40,000	40,000	40,000	40,000	160,000
7,000 sf vacant	0	0	0	0	28,000	28,000	28,000	28,000	112,000
3,000 sf vacant	0	0	0	0	0	0	12,000	12,000	48,000
Gross Income	\$ 160,000	\$ 160,000	\$ 200,000	\$ 200,000	\$ 228,000	\$ 228,000	\$ 240,000	\$ 240,000	\$ 960,000
Expenses									
Fixed Expenses \$ 3.00	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 180,000
Variable Expenses 20%	32,000	32,000	40,000	40,000	45,600	45,600	48,000	48,000	192,000
Leasing Expenses 20%	0	0	32,000	0	22,400	0	9,600	0	0
Management 5%	8,000	8,000	10,000	10,000	11,400	11,400	12,000	12,000	48,000
Total Expenses	\$ 85,000	\$ 85,000	\$ 127,000	\$ 95,000	\$ 124,400	\$ 102,000	\$ 114,600	\$ 105,000	\$ 420,000
Net Operating Income	\$ 75,000	\$ 75,000	\$ 73,000	\$ 105,000	\$ 103,600	\$ 126,000	\$ 125,400	\$ 135,000	\$ 540,000
Reversion Cap. Rate 6.0%								\$ 9,000,000	\$ 9,000,000
Quarterly Cash Flow	\$ 75,000	\$ 75,000	\$ 73,000	\$ 105,000	\$ 103,600	\$ 126,000	\$ 125,400	\$ 9,135,000	
Discount Rate 7.5%									
Total Value by DCF	\$ 8,500,000								

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- The current application/modeling of discounted cash flow methodology for a partially or wholly vacant income-producing property *erroneously* allocates the entire future benefit of cash flow solely to the seller and none to the buyer (*the entity that creates the future cash flows*).

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Interesting question from a client wanting to buy a multi-tenant office building that was only partially leased:

“Why would I pay the seller a price based on some mythical lease-up for which they won’t even be involved??”

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

That was a very good question !!

- ‡ If the new buyer is bringing the new tenants to the building, why would he pay the seller the present value of the new leasing as part of the sales price?

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

The lease-up of the vacant space occurs due to the marketing abilities of the buyer, not the seller.

The future benefits of tenant absorption are produced by the buyer and, in reality, accrue to the buyer.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Why would an appraiser, then, model the market value based on future leases for which the seller has no part?

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- DCF models, as appraisers are developing them right now, do not distinguish between future income from actual leases procured by the seller prior to the sale....

... and income from future leases procured by the buyer after the sale (except for some vacancy)

Appraisers discount this future income to present value and it all becomes part of the potential market value.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- Leasing of vacant space after the sale is due to the buyer's entrepreneurialism

The seller has nothing to do with it

- If a prudently and knowledgeable seller had been able to lease the vacant space, *it would have....*
- **But it didn't.**

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- If the seller is not the procuring cause of the future rents, the present value of this future cash flow should not be part of the market value the buyer pays the seller.
- If it is not part of the purchase price, then it should not be thought of as “market value”.
- Market value is *value in exchange*.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- A discounted cash flow model that assumes that future income accrues to the current owner is a DCF that is modeling *investment value*, not market value.
- This is a reasonable type of analysis for asset management issues but not for value in exchange (i.e., market value).

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- The key to determining if a DCF is modeling **investment value** or **market value** is found in the most widely accepted definition of market value for transaction purposes.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- “...the buyer and seller each acting prudently, knowledgeably...”
- “...both parties are well informed or advised, and each is acting in what he considers his own best interest.”

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- A prudent, knowledgeable, well-informed buyer acting in its own best interest would not willingly pay the seller for value that it, the buyer, creates for itself.



Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

So, how do we address this issue for market value discounted cash flow analyses?

I propose two methodologies:

- A split discount rate and a split cash flow, or
- A profit line in the DCF to recognize the buyer's efforts at marketing the vacant space

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

First, a split discount rate and a split cash flow

- Two distinctive rates of return:
 - 1) the cash flow of certain-term income to the seller discounted to present value at $X\%$, and
 - 2) the cash flow of future prospective income to the buyer discounted to present value at $Y\%$, which would represent a greater risk since the lease-up is uncertain.

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The rate differential between the certain-term income and the future prospective lease would depend on the appraiser's judgment of the depth of leasing demand in the local market, as well as property or region-specific factors such as amount of space available currently and prospective in the market, the amount of space available at the subject property, the property's condition and configuration, population growth, income growth, changes in employment, and the like.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Revised Model:

- The discount rate (IRR) for certain-term leasing is decreased from 7.5% to 6.5% to reflect the limited risk of default on an existing, signed lease
- The prospective future leasing reversion capitalization rate is increased from 6.0% to 9.0% to reflect the uncertainty of achieving this income
- The discount rate (IRR) for future prospective leasing is increased from 7.5% to 9.5%, also to reflect the uncertainty of achieving this income

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Leasing from Certain Term Income

Income	Year 1				Year 2				Reversion
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
40,000 sf occupied	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 640,000
10,000 sf vacant	0	0	0	0	0	0	0	0	0
7,000 sf vacant	0	0	0	0	0	0	0	0	0
3,000 sf vacant	0	0	0	0	0	0	0	0	0
Gross Income	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 640,000
Expenses									
Fixed Expenses	\$ 3.00	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 120,000
Variable Expenses	20%	32,000	32,000	32,000	32,000	32,000	32,000	32,000	128,000
Leasing Expenses	20%	0	0	0	0	0	0	0	64,000
Management	5%	8,000	8,000	8,000	8,000	8,000	8,000	8,000	32,000
Total Expenses		\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 344,000
Net Operating Income		\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 296,000
Reversion Cap. Rate	6.0%							\$ 4,930,000	6.0%
Quarterly Cash Flow		\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 5,020,000	\$ 4,930,000
Discount Rate:		6.5%							
PV of Certain Term Income \$ 5,004,000									

Prospective Future Leasing

Income	Year 1				Year 2				Reversion
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
40,000 sf occupied	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
10,000 sf vacant	0	0	40,000	40,000	40,000	40,000	40,000	40,000	160,000
7,000 sf vacant	0	0	0	0	28,000	28,000	28,000	28,000	112,000
3,000 sf vacant	0	0	0	0	0	0	12,000	12,000	48,000
Gross Income	\$ 0	\$ 0	\$ 40,000	\$ 40,000	\$ 68,000	\$ 68,000	\$ 80,000	\$ 80,000	\$ 320,000
Expenses									
Fixed Expenses	\$ 3.00	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 60,000
Variable Expenses	20%	0	0	8,000	13,600	13,600	16,000	16,000	64,000
Leasing Expenses	20%	0	0	32,000	22,400	0	9,600	0	32,000
Management	5%	0	0	2,000	3,400	3,400	4,000	4,000	16,000
Total Expenses		\$ 15,000	\$ 15,000	\$ 57,000	\$ 54,400	\$ 32,000	\$ 44,600	\$ 35,000	\$ 172,000
Net Operating Income		-\$ 15,000	-\$ 15,000	-\$ 17,000	\$ 13,600	\$ 36,000	\$ 35,400	\$ 45,000	\$ 148,000
Reversion Cap. Rate	9.0%							\$ 1,640,000	9.0%
Quarterly Cash Flow		-\$ 15,000	-\$ 15,000	-\$ 17,000	\$ 13,600	\$ 36,000	\$ 35,400	\$ 1,685,000	\$ 1,640,000
Discount Rate:		8.0%							
PV from Future Leasing \$ 1,482,000									

Total Indicated Market Value

NPV of Certain Term Income	\$ 5,004,000
NPV from Future Leasing	\$ 1,482,000
	\$ 6,490,000

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Or.....>>>>

- A profit line might be added in the cash flow to reflect the additional risk/reward to the buyer to lease-up the property.
- Profit could be measured as a percentage of the new leasing.

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

DCF with a line for profit

	Year 1				Year 2				Reversion
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
Income									
40,000 sf occupied	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 640,000
10,000 sf vacant	0	0	40,000	40,000	40,000	40,000	40,000	40,000	160,000
7,000 sf vacant	0	0	0	0	28,000	28,000	28,000	28,000	112,000
3,000 sf vacant	0	0	0	0	0	0	12,000	12,000	48,000
Gross Income	\$ 160,000	\$ 160,000	\$ 200,000	\$ 200,000	\$ 228,000	\$ 228,000	\$ 240,000	\$ 240,000	\$ 960,000
Expenses									
Fixed Expenses 3.00%	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 180,000
Variable Expenses 20%	32,000	32,000	40,000	40,000	45,600	45,600	48,000	48,000	192,000
Leasing Expenses 20%	0	0	32,000	0	22,400	0	9,600	0	0
Management 5%	8,000	8,000	10,000	10,000	11,400	11,400	12,000	12,000	48,000
Total Expenses	\$ 85,000	\$ 85,000	\$ 127,000	\$ 95,000	\$ 124,400	\$ 102,000	\$ 114,600	\$ 105,000	\$ 420,000
Profit (as a Percentage of the Buyer's Leasing)									
25%	\$ 0	\$ 0	\$ 10,000	\$ 10,000	\$ 17,000	\$ 17,000	\$ 20,000	\$ 20,000	\$ 80,000
Net Operating Income									
	\$ 75,000	\$ 75,000	\$ 63,000	\$ 95,000	\$ 86,600	\$ 109,000	\$ 105,400	\$ 115,000	\$ 460,000
Reversion Cap. Rate 6.0%									
							\$ 7,670,000		\$ 7,670,000
Quarterly Cash Flow									
	\$ 75,000	\$ 75,000	\$ 63,000	\$ 95,000	\$ 86,600	\$ 109,000	\$ 105,400	\$ 7,785,000	

Discount Rate 7.5%

Total Value by DCF \$ 7,270,000

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Summary

- Investment value is a perfectly legitimate use for a discounted cash flow analysis
- Generally, it assumes continued ownership

Discounted Cash Flow Modeling in a Distressed Market:

Investment Value vs. Market Value

Summary (continued)

- If the appraiser is modeling a DCF to derive market value, then cash flows from future absorption of currently vacant space should accrue to the buyer, not the seller

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

Summary (continued)

- A lender is not going to offer financing based on tax assessment value or insurable value. Why would it lend on investment value, especially for a distressed property?

Discounted Cash Flow Modeling in a Distressed Market: Investment Value vs. Market Value

- **Why would a buyer pay a seller for leasing that the seller has not achieved?**
- **Why would a buyer pay a seller for a fireplace that the seller has not installed?**

**Discounted Cash Flow Modeling in a Distressed Market:
Investment Value vs. Market Value**

Questions
&
Comments

Discounted Cash Flow Modeling in a Distressed Market: **Investment Value vs. Market Value**