Pro Forma Analysis

TO DO DO DO DO

Vital Places, Vibrant Communities.

The Three Misunderstood Words



Pro Forma Analysis is used to estimate *Cost* and *Value*

In real estate what makes up VALUE?



In real estate what makes up *COST*?

Acquisition Price Construction Costs Professional Services Fees Construction Financing **Miscellaneous Costs**



Cost Variables

Acquisition Price Construction Costs Professional Services Fees Construction Financing Miscellaneous Costs

Value Variables

Rent Vacancy **Expenses** Amount Rate Term **Risk** Alternatives **Tax Benefits** Appreciation Liquidity Management

Stages of Pro Forma

Acquisition Rehabilitation Operation Disposition

Pro Forma Vocabulary

- Hard Costs
- Soft Costs
- Rent-up Costs
- Gross Scheduled Income
- Effective Gross Income
- Fixed Expenses
- Operating Expenses
- Reserves for Replacement
- Operating Expense Ratio

- Net Operating Income
- Debt Service
- Cash Flow
- Loan to Value Ratio
- Debt Service Constant
- Debt Coverage Ratio
- Interest Rate
- Loan Term
- Debt
- Equity

Pro Forma – Acquisition Purchase Price Other Acquisition Costs Other Acquisition Credits **Acquisition Cost Estimate**

ACQUISITION COST ESTI	IMATE
Purchase Price – Real Estate	\$
Purchase Price - Personal Property	\$
Appraisal	\$
Credit Report	\$
Transfer Tax	\$
Inspection Fees	\$
Survey	\$
Title Insurance Policy	\$
Buyer's Brokerage Fee	\$
Attorney's Fees	\$
Heritage Evaluation	\$
Environmental Analysis	\$
Loan Origination Fees	\$
Loan Discount Fee	\$
Required Escrow Deposits	\$
Prepaid Interest	\$
Other Bank Charges	\$
Insurance Prorations – To Seller	\$
Tax Prorations – To Seller	\$
Fuel Oil Prorations – To Seller	\$
Other Costs at Closing	\$
Insurance Prorations – From Seller	\$
Tax Prorations – From Seller	\$
Rent Prorations – From Seller	\$
Deposit Adjustment – From Seller	\$
Other Credits at Sale	\$
AMOUNT DUE AT ACOUISITION	s

Notes:

Pro Forma – Rehabilitation

- Hard Costs
- Soft Costs
- Rent-up Costs
- Contingency

Rehabilitation

Budget Checklist



- ten	- annanon	buger cureraist		
Soft Costs	1.6	Hard Costs		
Architect	\$	Demolition	S	
Structural Engineer	S	Rough Carpentry *	S	
Mechanical Engineer	5	Finish Carpentry *	S	
Environmental Engineer	S	Sheetrock *	S	
Consultants	S	Plaster	S	
Appraisal	5	Painting	S	
Attorney	S	Doors, Door Frames	S	
Accountant	S	Hardware	S	
Interior Designer	S	Ceilings	S	
Landscape Architect	S	Subflooring •	\$	
		Floor Covering *	S	1. I I I I I I I I I I I I I I I I I I I
Loan Placement Fee	S	Plumbing *	S	
Loan Origination Fee	S	Electrical •	S	
Construction Period Interest	S	Light Fixtures	S	
Closing Costs	S	Heating/Ventilating		
		Air Conditioning	· ·	
		(HVAC) *	S	
Building permit	S	Insulation	S	
Hook-up Fees	S	Sprinkler System	S	
Impact Fees	S	Fire Extinguishers	S	
Use Fees	S	Exit Signs	S	
Building Inspection Fees	S	Specialties	S	
		Stairs - Interior	S	
Bid Bond	S	Stairs - Exterior	S	
Temporary Power	S	Elevator/Escalator	S	
Project Phone	S	Specialty Glass	S	
Project Sign	S	Windows	S	
Builders Risk Insurance	S	Structural Work	s	
Copying	S	Roofing & Flashing *	S	
Legal Advertising	S	Exterior Cleaning	S	8 1
Bid Costs	s	Tuckpointing	S	
Rent Loss during Construction	S	Decorating Extras	\$	
rear 2005 daring construction	10	Millwork	s	
Other Soft Costs	10	Signing	2	
TOTAL SOFT COSTS	6	Clean-up	6	
TOTAL SOFT COSTS	1.9	Other Used Costs	-	
		TOTAL UADD COSTS	-	
		TOTAL HARD COSTS	3	600/
ent-up Costs		Cost Recapitulation		UU / U ⁻ UU / 0
Advertising	S	Hard Costs	S	
Model	S	Soft Costs	3	<u> 20%-35%</u>
Leasing Fees	S	Rent-up Costs	s	
Rent Inducements	S	Contingency (%)	S	
Postage & Printing	S	TOTAL COSTS	5	
Floor Plans	S	Notes	1000/	00/0-50/0
Legal	S		100%	U/U-J/U
Cleaning	S			
Utilities	S			
Other Bent-up Costs	5			
TOTAL RENT-UP COSTS	5	• Labor and Maturiale		5
TOTAL REAT-OF COSTS		Earny and materials		

Pro Forma – Operation

Gross Scheduled Income (GSI)

Less: Vacancy

Plus: Miscellaneous Income

Equals: Effective Gross Income (EGI)

Less: Fixed Expenses

- **Less: Variable Expenses**
- **Less: Reserve for Replacements**
- **Equals: Net Operating Income (NOI)**
 - Less: Debt Service (ds)

Equals: Cash Flow (cf)

	Year:			
Property:	Date of Projection:			
GROSS SCHEDULED INCOME	\$			
Less: Vacancy (%)	\$			
Plus: Miscellaneous Income	\$			
EFFECTIVE GROSS INCOME		\$		
Less: Fixed Expenses				
Real Estate Taxes	\$			
Insurance	\$			
Other	\$			
Less: Variable Expenses				
Management (%)	\$			
Utilities	\$			
Repair & Maintenance	\$			
Water, Sewer, Garbage	\$			
Supplies	\$			
Outside Services				
Miscellaneous				
Less: Replacement Reserves				
Roof	\$			
Floor Covering	\$	-		
Other	\$			
TOTAL EXPENSES	\$			
NET OPERATING INCOME	\$			
Less: DEBT SERVICE				
CASH FLOW		\$		
Prepared by:				

	• • • • • • • • • •	Year:	
Property: 4 @ \$1000 x 1	2 = \$48,000	Date of Projection:	
GROSS SCHEDULED INCOME		\$ 48,000	
Less: Vacancy (_10%)	\$ 4.800		
Plus: Miscellaneous Income	\$ 800		
EFFECTIVE GROSS INCOME		44,000 +	
Less: Fixed Expenses			
Real Estate Taxed	\$ 3,000		
Insurance	\$ 2,500		
Other	\$ 500		
Less: Variable Expenses			
Management (<u>5</u> %	\$ 2,200		
Utilities	s 1,800		Operating
Repair & Maintenance	\$ 1,000		
Water, Sewer, Garbage	s 500		Expense
Supplies	s 500		Ratio
Outside Services	\$ 1.000	j: E	
Miscellaneous	\$ 1,000		30% to
Less: Replacement Reserves	,		50%
Roof	\$ 500	÷	5070
Floor Covering	\$ 500	1	
Other	s 1,000		
TOTAL EXPENSES		s <u>16,000</u> ←	
NET OPERATING INCOME		\$ 28,000	\$16,000 ÷
Less: DEBT SERVICE	\$ 22,000		\$44,000 =
CASH FLOW		\$ 6,000	~ 36%
Prepared by:			_

Two Useful Tools

Debt Service Constant Debt Coverage Ratio

	Debt Service Constant Table										
	Loan Ter	m>									
Interest Rate	1	2	3	4	5	7	10	15	20	25	30
2.0%	1.0109	0.5105	0.3437	0.2603	0.2103	0.1532	0.1104	0.0772	0.0607	0.0509	0.0444
2.5%	1.0136	0.5131	0.3463	0.2630	0.2130	0.1559	0.1131	0.0800	0.0636	0.0538	0.0474
3.0%	1.0163	0.5158	0.3490	0.2656	0.2156	0.1586	0.1159	0.0829	0.0666	0.0569	0.0506
3.5%	1.0191	0.5184	0.3516	0.2683	0.2183	0.1613	0.1187	0.0858	0.0696	0.0601	0.0539
4.0%	1.0218	0.5211	0.3543	0.2709	0.2210	0.1640	0.1215	0.0888	0.0727	0.0633	0.0573
4.5%	1.0245	0.5238	0.3570	0.2736	0.2237	0.1668	0.1244	0.0918	0.0759	0.0667	0.0608
5.0%	1.0273	0.5265	0.3597	0.2764	0.2265	0.1696	0.1273	0.0949	0.0792	0.0702	0.0644
5.5%	1.0300	0.5291	0.3624	0.2791	0.2292	0.1724	0.1302	0.0981	0.0825	0.0737	0.0681
6.0%	1.0328	0.5318	0.3651	0.2818	0.2320	0.1753	0.1332	0.1013	0.0860	0.0773	0.0719
6.5%	1.0356	0.5346	0.3678	0.2846	0.2348	0.1782	0.1363	0.1045	0.0895	0.0810	0.0758
7.0%	1.0383	0.5373	0.3705	0.2874	0.2376	0.1811	0.1393	0.1079	0.0930	0.0848	0.0798
7.5%	1.0411	0.5400	0.3733	0.2901	0.2405	0.1841	0.1424	0.1112	0.0967	0.0887	0.0839
8.0%	1.0439	0.5427	0.3760	0.2930	0.2433	0.1870	0.1456	0.1147	0.1004	0.0926	0.0881
8.5%	1.0466	0.5455	0.3788	0.2958	0.2462	0.1900	0.1488	0.1182	0.1041	0.0966	0.0923
9.0%	1.0494	0.5482	0.3816	0.2986	0.2491	0.1931	0.1520	0.1217	0.1080	0.1007	0.0966
9.5%	1.0522	0.5510	0.3844	0.3015	0.2520	0.1961	0.1553	0.1253	0.1119	0.1048	0.1009
10.0%	1.0550	0.5537	0.3872	0.3044	0.2550	0.1992	0.1586	0.1290	0.1158	0.1090	0.1053
10.5%	1.0578	0.5565	0.3900	0.3072	0.2579	0.2023	0.1619	0.1326	0.1198	0.1133	0.1098
11.0%	1.0606	0.5593	0.3929	0.3101	0.2609	0.2055	0.1653	0.1364	0.1239	0.1176	0.1143
11.5%	1.0634	0.5621	0.3957	0.3131	0.2639	0.2086	0.1687	0.1402	0.1280	0.1220	0.1188
12.0%	1.0662	0.5649	0.3986	0.3160	0.2669	0.2118	0.1722	0.1440	0.1321	0.1264	0.1234
13.0%	1.0718	0.5705	0.4043	0.3219	0.2730	0.2183	0.1792	0.1518	0.1406	0.1353	0.1327
14.0%	1.0774	0.5762	0.4101	0.3279	0.2792	0.2249	0.1863	0.1598	0.1492	0.1445	0.1422
15.0%	1.0831	0.5818	0.4160	0.3340	0.2855	0.2316	0.1936	0.1680	0.1580	0.1537	0.1517
	Debt Service Constant X Amount Borrowed = Annual Debt Service										
	Example: \$100,000 Borrowed for 20 years at 8% = \$100,000 X .1004 = \$10,040										
		For Monthly Payment, divide by 12 = \$10,040 / 12 = \$836.67									

TWO ANALYTICAL TOOLS - THE DEBT SERVICE CONSTANT (dsc) AND THE DEBT COVERAGE RATIO (dcr)

DEBT SERVICE CONSTANT

The Debt Service Constant is the amount of principal and interest to be paid each year expressed as a percentage of the original loan amount. The Debt Service Constant can be found in tables if you know the Interest Rate and the Loan Term.

The Debt Service Constant is usually used like this: Amount of Money to be Borrowed X Debt Service Constant = Annual Debt Service (payments) For example a loan with an Interest Rate of 10% and a Loan Term of 25 years has a Debt Service Constant of .1090 (from tables) The Annual Debt Service (principal and interest) on a loan of \$100,000 with an Interest Rate of 10% and a Loan Term of 25 years would be calculated as follows:

\$100,000 X .1090 = \$10,900 Annual Debt Service This is the Annual Debt Service. To find the Monthly Payment simply divide by 12. \$10,900 ÷ 12 = \$908.33 Monthly Payment

When we know how much money is available for *Debt Service* the *Debt Service Constant* can be used like this: Available for *Debt Service* ÷ *Debt Service Constant* = Maximum Mortgage Amount.

For example if we could afford payments of \$12,000 per year (\$1,000 per month) and could secure a loan with an *Interest Rate* of 10% and a *Loan Term* of 25 years the Maximum Mortgage Amount would be calculated as follows:

\$ 12,000 ÷ .1090 = \$110,092 Maximum Mortgage Amount.

DEBT COVERAGE RATIO

The Debt Coverage Ratio is the relationship between the Net Operating Income (NOI) and the Annual Debt Service. Banks will generally consider loans that have a Debt Coverage Ratio of between 1.2 and 1.5.

The Debt Coverage Ratio is calculated by dividing the Net Operating Income by the Annual Debt Service. For example a property that had Net Operating Income of \$15,000 per year and Annual Debt Service of \$12,000 would have a Debt Coverage Ratio of 1.25.

\$15,000 ÷ \$12,000 = 1.25 Debt Coverage Ratio

We can also use the Debt Coverage Ratio to estimate the Amount Available for Debt Service by dividing the Net Operating Income by a Debt Coverage Ratio.

For example a property that had Net Operating Income of \$15,000 and a banker willing to make a loan with a 1.2 Debt Coverage Ratio would have \$12,500 per year available for Debt Service.

\$15,000 ÷ 1.2 = \$12,500 Available for Debt Service

	12 - \$48,000	Year:	
Property: $-4 \otimes \phi 1000 \times 12 - \phi 40,000$		Date of Projection:	-
GROSS SCHEDULED INCOME		\$ 48,000	
Less: Vacancy (_ 10 %)	4,800	-	
Plus: Miscellaneous Income	\$ 800		
EFFECTIVE GROSS INCOME		s 44,000	
Less: Fixed Expenses	1		
Real Estate Taxed	\$ 3,000		
Insurance	\$ 2,500		
Other	s 500		
Less: Variable Expenses			
Management (<u>5</u> %)	\$ 2,200		Dabt Coverage
Utilities	s 1,800		Debt Coverage
Repair & Maintenance	\$ 1,000		Ratio (dcr) =
Water, Sewer, Garbage	s 500	-	NOI \div Debt Service
Supplies	s 500		
Outside Services	\$ 1,000		$28,000 \div 22,000 =$
Miscellaneous	\$ 1,000		1.27
Less: Replacement Reserves	,		
Roof	s 500	-	Dsc typically between
Floor Covering	\$ 500	-	1.15 and 1.5
Other	\$ 1,000		
TOTAL EXPENSES		s 16,000	
NET OPERATING INCOME		\$ 28,000	\triangleright
Less: DEBT SERVICE	\$ 22,000		
CASH FLOW		\$ 6,000	1
Prepared by:			-

Source and Use of Funds

Source of Funds

- Debt
 - Primary
 - Subordinate
- Equity
 - Primary
 - Subordinate
- Donated Land or Bldg
- Donated Services
- Intervention Funds
- Other Sources of Funds

Use of Funds

- Pre-Acquisition Costs
- Acquisition
- Rehabilitation
 - Hard Costs
 - Soft Costs
 - Rent-up Costs
- Holding Costs during Construction
- Reserves
- Other Uses of Funds

SOURCE OF FUNDS		USE OF FUNDS		
Equity - 1st Position 1	\$	Pre-Acquisition Costs	\$	
Equity - 2nd Position 2	\$	Purchase Price	\$	
Tax Credit Equity 3	\$	Other Acquisition Costs	\$	
Building/Land Contribution	\$	Hard Costs	\$	
Donated Services 4	\$	Soft Costs	\$	
Debt - 1st Position	\$	Development Fees	\$	
Debt - 2nd Position	\$	Holding Costs 5	\$	
Debt - 3rd Position	\$	Contingency	\$	
Intervention Funds 67	\$	Required Escrows	\$	
Deferred Development Fee	\$	Working Capital	\$	
Other Source of Funds 8	\$	Other Use of Funds 9	\$	
TOTAL SOURCES OF FUNDS	\$	TOTAL USE OF FUNDS	\$	
	DEBT RECAPITUL	ATION		
Mortgage Holder	Amount of Debt	Interest Rate	Loan Term	
1st Mortgage	\$	%	Yrs	
2nd Mortgage	\$	%	Yrs	
3rd Mortgage	\$	%	Yrs	
D	EBT/EQUITY RECONCILIATION			
Total Debt	\$	%		
Total Equity	\$	%		
Total Intervention	\$	%		
1 1st Equity Position held by				
2 2nd Equity Position held by				
3 Tax Credit Equity held by		based on total estimated tax credit of \$		
		purchased as	_ per \$1	
4 Donated Services include				
5 During construction period				
6 Funds that neither represent a loar	n to be repaid (debt) nor ownersh	ip in the property (equity) are term	ed Intervention Funds	
7 Sources and Amounts of Intervention Funds are				
8 Other sources of Funds and their a	amounts are			
9 Other Uses of Funds and their amounts are				



The Cost/Value Relationship

COST

VALUE

When Value Exceeds Cost Capital will flow quickly to the opportunity



The Risk/Reward Relationship

RISK





The Risk/Reward Relationship

RISK





Calculating the *Gap*

	How Much Can I Spend?					
	I know what the rents will be – How much can I	spend? How big will the C	AP be?			
+, -, x , ÷						
	Gross Scheduled Rents		\$	48,000		
-	Vacancy	\$ 4,800		,		
+	Miscellaneous Income	\$ 800				
=	Effective Gross Income		\$	44,000		
-	Fixed Expenses	\$ 6,000				
-	Variable Expenses	\$ 8,000				
-	Reserves for Replacement	\$ 2,000				
=	Net Operating Income	\$	28,000			
÷	Debt Coverage Ratio					
=	Available for Debt Service	\$	~ 22,000			
÷	Debt Service Constant (8%, 2					
=	Maximum Mortgage Amount	\$	~ 219,000			
-	Existing Mortgage Pay-off	\$ 0				
+	Equity Dollars Available \$ 40,000					
-	Acquisition Cost \$ 50,000					
=	Maximum Rehabilitation Budget			~ 209,000		
	Estimated Total Rehabilitation Costs 4 units	\$	260,000			
-	Maximum Rehabilitation Budget \$ ~ 209,000					
=	Amount of <i>GAP</i> \$ ~ 51,000					

Measures of Return

- Capitalization Rate
- Gross Rent Multiplier
- Cash-on-Cash Return
- After Credit Cash-on-Cash Return





Analytical Measurements				
<i>Capitalization Rate</i> (Cap Rate)	Net Operating Income ÷ Total Investment = Capitalization Rate			
	Net Operating Income ÷ <i>Capitalization Rate</i> = Value Cap Rate typically between 9% and 12%			
Gross Rent Multiplier (GRM)	Value ÷ Gross Scheduled Income = Gross Rent Multiplier			
	Gross Rent Multiplier x Gross Scheduled Income ≅ Value			
	GRM typically between 5 and 7			
<i>Debt Service Constant</i> (dsc)	Debt Service ÷ Debt = Debt Service Constant			
	<i>Debt Service Constant</i> x Amount Borrowed = Debt Service			
	dsc found in tables and will be dependent on Rate and Term			
Debt Coverage Ratio (dcr)	Net Operating Income ÷ Debt Service = <i>Debt Coverage</i> <i>Ratio</i>			
	Net Operating Income ÷ <i>Debt Coverage Ratio</i> = Available for Debt Service			
	dcr typically between 1.15 and 1.5			
Loan to Value Ratio (LTV)	Loan ÷ Value = <i>Loan to Value Ratio</i>			
	Value x <i>Loan to Value Ratio</i> = Available Loan			
	For commercial properties LTV would typically be between 60% and 80%			
<i>Operating Expense Ratio</i> (oer)	Expenses ÷ Effective Gross Income = Operating Expense Ratio			
	<i>Operating Expense Ratio</i> x Effective Gross Income = Expenses			
	oer would typically be between 30% and 50%			
Cash-on-Cash Return	Cash Flow ÷ Investor's Equity Contribution = Cash-on- Cash Return			
	Cash Flow ÷ <i>Cash-on-Cash Return</i> = Justifiable Investor Equity Contribution			
	<i>Cash-on-Cash Return</i> will vary widely. Could be as low as 5% or as high as 14% depending on market conditions, appreciation expectations, interest rates and other factors			
After Credit Cash-on-Cash	Cash Elaw : (Investor's Equity Contribution To C			
Return	= After Credit Cash-on-Cash Return			
	Cash Flow ÷ After Credit Cash-on-Cash Return =			
	Justifiable Investor Equity Contribution + Tax Credit Not typically calculated in the marketplace			





Situation – City is considering an application to demolish a 4 story historic building so that a 10 story new building can be built

Assumptions: 20,000 square feet per floor, 90% rentable Rents = \$25/square foot/year Construction or Rehabilitation Cost = \$120/square foot Land Value = Property Value – Building Cost *Capitalization Rate* = 9% Effective Property Tax Rate = 2% of property value

10 Story Building

Cost: 10 stories x 20,000 s.f./floor x \$120 = \$24,000,000 *Value:*

Value Calculations

Gross Scheduled Income (GSI)

- Less: Vacancy
- Equals: Effective Gross Income (EGI)
- Less: Expenses
- Equals: Net Operating Income (NOI)
- Divided by: Capitalization Rate

Equals: Value

10 Story Building

Cost:

10 stories x 20,000 s.f./floor x \$120 = **<u>\$24,000,000</u>**

Value:

10 stories x 18,000 s.f./floor x \$25 = \$4,500,000 GSI Less: Vacancy (10%) 450,000 Effective Gross Income \$4,050,000 Less: Expenses (35%) 1,417,500 Net Operating Income \$2,632,500 NOI /Cap Rate = Value \$2,632,500 / .09 = \$29,250,500

4 Story Building

Cost:

4 stories x 20,000 s.f./floor x \$120 = **<u>\$ 9,600,000</u>**

Value:

4 stories x 18,000 s.f./floor x \$25 = \$ 1,800,000 GS/ Less: Vacancy (10%) 180,000 Effective Gross Income \$ 1,620,000 Less: Expenses (35%) 567,000 Net Operating Income \$ 1,053,000 NOI /Cap Rate = Value \$ 1,053,000 / .09 = \$ 11,770,000

Why does the city care?

10 Story Building

Value: \$29,250,000 Tax Rate: 2% Taxes: \$585,000

Const Jobs:799Permanent Jobs:800

Land Value: \$5,250,000

4 Story Building

 Value:
 \$11,770,000

 Tax Rate:
 2%

 Taxes:
 \$235,400

Value: (\$17,480,000)

Difference

 Tax Rate:
 2%

 Taxes:
 (\$ 349,600)

Const Jobs:342Const Jobs:(457)Permanent Jobs:320Permanent Jobs:(480)

Land Value: \$2,170,000 Land Value: (\$3,080,000)

Land Value Calculations (or why property owners don't like downzoning)

10 Story Building

4 Story Building

Property Value Less: Building Cost Equals: Land Value

- \$ 11,770,000
- 9,600,000
- \$ 2,170,000

\$ 29,250,000 - 24,000,000 \$ 5,250,000

- **Difference**
- \$ 5,250,000
 - 2,170,000
- (\$ 3,080,000)