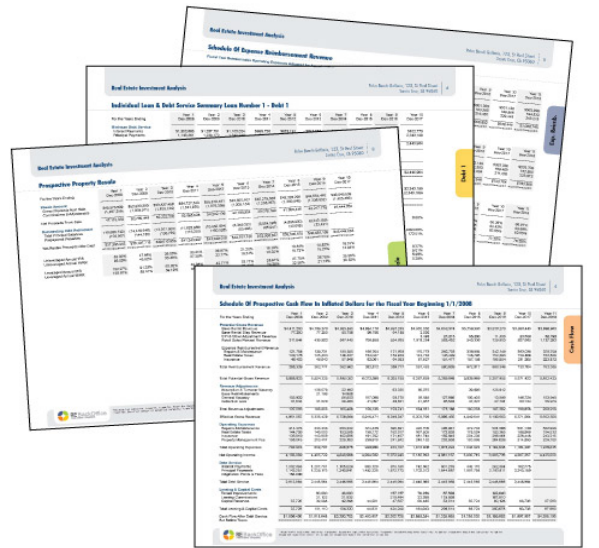


THE GEORGE WASHINGTON UNIVERSITY
UNDERWRITING ASSIGNMENT - 1



SUBMITTED TO

PROF. BRIAN GILL
School of Business and Public Management
The George Washington University

BY

Anil Kumar Cheerla

FINA 6248
FINANCIAL MANAGEMENT

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¹ Source: <http://www.rebackoffice.com>

Joe Apartments Underwriting Assignment

Q1: What are the returns on investment in Year 1 for each option Joe has at his disposal?

Soln:

Assumptions:

- The 2/2 bedroom size of 663 sq.ft was calculated based on the monthly rent and the rate per sq.ft provided
- **Occupancy rate of 96%** (vacancy loss) was used to calculate returns on the renovations performed
- Occupancy rate is left constant at 96% after improvements since Joe's occupancy rate already exceeds both Class A and Class B properties and there is not much room to improve this rate.
- Improvements are done for all 100 units even though occupancy is 96%
- Water heating expense of \$40 is an expense paid by the developer – An expense to be deducted from operating revenues calculated
- Tenants pay for all expenses except for hot water - NNN
- No lease terms, escalations, extension options, loss to lease and credit loss were not considered given the lack of such information

The competitive analysis conducted suggests that Joe's rental rates are close to Class B Competitors in spite of having smaller units (less footage area - 663 sq.ft vs. 805 sq.ft). In comparison to Class A competitors, Joe is under-priced (by \$203) and has potential to raise rents if he can renovate the existing 2/2 units and bring them up to a higher standard.

Unit Mix						
Type	Units	Unit size	Total Sq ft	Rent/month	tal rent/mon	Total rent /yr
1 bed/1 bath	0	0	0	0	0	0
2 bed/ 2 bath	100	663	66300	\$895.00	\$89,500.00	\$1,074,000.00
Total	100	663	66300	\$895.00	\$89,500.00	\$1,074,000.00

Comparison to Class A properties

Comparable Props									
Class A									
				1 BR			2 BR		
Property	Yr Built	Occ	Units	Sq.ft	Rent	Rent PSF	Sq.ft	Rent	Rent PSF
Ashbrook Apt	1996	95%	156	843	\$885.00	\$1.05	1020	\$1,071.00	\$1.05
Columbus Sta	2004	91%	306	966	\$995.00	\$1.03	1092	\$1,125.00	\$1.03
Average		93%	231.00	904.50	\$940.00	\$1.04	1056.00	\$1,098.00	\$1.04
Joe Apts	1988	96%	100	0	\$0.00	\$0.00	663	\$895.00	\$1.35
Unit Comparison		-3%	131.00	0.00	\$0.00	\$0.00	393.00	\$203.00	-\$0.31

Comparison to Class B properties

Class B									
				1 BR			2 BR		
Property	Yr Built	Occ	Units	Sq.ft	Rent	Rent PSF	Sq.ft	Rent	Rent PSF
The Hampton	1973	96%	212	522	\$731.00	\$1.40	0.00	\$0.00	\$0.00
Baker Crossing	1976	83%	600	717	\$824.00	\$1.15	884.00	\$1,017.00	\$1.15
Amhurst	1985	100%	88	457	\$640.00	\$1.40	498.00	\$697.00	\$1.40
Brandywine	1985	93%	172	672	\$780.00	\$1.16	775.00	\$899.00	\$1.16
Hunters Mill	1990	99%	180	931	\$875.00	\$0.94	1064.00	\$1,000.00	\$0.94
Average	1981.8	94%	250.40	659.80	\$770.00	\$1.21	805.25	\$903.25	\$1.16
Joe Apts	1988	96%	100	0	\$0.00	\$0.00	663	\$895.00	\$1.35
Unit Comparison		-2%	150.40	659.80	\$770.00	\$1.21	142.25	\$8.25	-\$0.19

Given the various improvement options available, I looked at ones that maximize investment. So with increased rental revenue as the target, I analyzed the different options and listed their returns below:

Improvements Analysis							
No. Of Units	100						
Occupied Units	96	96%					
Unit Renovations	Total Cost/unit	Total Cost Per Unit	Expected additional rent	Yield/unit	Total cost (100 units)	Total Rental Increase (96 units)	Year 1 Return
Berber carpeting	\$550.00	\$550.00	\$45.00	8.18%	\$55,000.00	\$51,840.00	-5.75%
Washer/Dryer	\$625.00	\$625.00	\$60.00	9.60%	\$62,500.00	\$69,120.00	10.59%
Refinish Kitchen cabinets/Co	\$600.00	\$600.00	\$55.00	9.17%	\$60,000.00	\$63,360.00	5.60%
Submetering of electric wat	\$375.00	\$375.00	\$0.00	0.00%	\$37,500.00	\$0.00	0.00%
New kitchen appliances	\$1,150.00	\$1,150.00	\$125.00	10.87%	\$115,000.00	\$144,000.00	25.22%
New Sink/Vanity in bathroom	\$850.00	\$850.00	\$95.00	11.18%	\$85,000.00	\$109,440.00	28.75%
New Kitchen cabinets & Cou	\$1,100.00	\$1,100.00	\$115.00	10.45%	\$110,000.00	\$132,480.00	20.44%
Total Renv Costs	\$5,250.00	\$5,250.00	\$495.00	9.43%	\$525,000.00	\$570,240.00	8.62%

A)

<u>Improvement/Addition</u>	<u>Year 1 Return</u>
Berber Carpeting	-5.75%
Washer/Dryer	10.59%
Refinish Kitchen Cabinets & Countertops	5.60%
Sub-Metered Electric Hot Water Heater*	0%
New Kitchen Appliances	25.22%
New Sink & Vanity in Bathrooms	28.75%
New Kitchen Cabinets & Countertops	20.44%

One year return on the improvements yielded 8.62% return i.e. renovation cost of \$525,000K improvements generating increased revenue of \$570,240 dollars. The above returns assume that Joe will deduct the vacancy losses from the total rental income generated for year one. The returns are calculated based on the overall costs for each option without being limited by any renovation budget constraints.

Q2: What is the optimal mix of improvements Joe should make to maximize total ROI for the project? Based on your answer, what would be Joe's total incremental return in Year 1 as calculated based on the capital improvements budget?.

Soln:

Based on the returns calculated for each individual option, I selected the optimal mix as:

Optimal mix of Renovations:			
	Total Cost	Rental revenue	Yearly return
New Sink/Vanity in bathroom	\$85,000.00	\$109,440.00	28.75%
New Kitchen Appliances	\$115,000.00	\$144,000.00	25.22%
Total Cost	\$200,000.00	\$253,440.00	26.72%
Renovation Budget	\$200,000.00		
Residual	0		

	<u>Return</u>
Berber Carpeting	-
Washer/Dryer	-
Refinish Kitchen Cabinets & Countertops	-
Sub-Metered Electric Hot Water Heater*	-
New Kitchen Appliances	25.22%
New Sink & Vanity in Bathrooms	28.75%
New Kitchen Cabinets & Countertops	-
Total Blended Return	26.72%

Q3: If the going cap rate in the market is 8.5%, how much value will Joe have added to his property by completing his renovation program? What is the net total return of the value added to the property?.

Soln: Upon analysis, the incremental return to NOI to be **126.72%**. Value Created (@8.5% cap) was \$2,981,647.06 and total value added was \$2,781,647.06. The total [return@8.5%](#) was 129.1%. Overall the investor attains a huge return on the investment in improvements provided the anticipated increases in rents prevail.

Pre-Renv Rents						
Type	Units	Unit size	Total Sq ft	Rent/month	Total rent/mo	Total r /yr
1 bed/1 bath	0	0	0	\$0.00	\$0.00	\$0.00
2 bed/ 2 bath	100	663	66300	\$895.00	\$89,500.00	\$1,074,000.00
Total	100	663	66300	\$895.00	\$89,500.00	\$1,074,000.00

Annual Income Statement: Pre-renovation				
Income	Total	Per Unit	Per Sq.ft	% of GPR
Gross Rent	\$1,074,000.00	\$10,740.00	\$16.20	100.00%
Loss to lease	0	0	0	0.00%
Vacancy loss	-\$42,960.00	-\$859.20	-\$0.65	-4.00%
Credit loss	\$0.00	\$0.00	\$0.00	0.00%
Eff. Gross Income	\$1,031,040.00	\$9,880.80	\$15.55	96.00%
Operating expenses				% of EGI
Water heating	\$48,000.00	\$480.00	\$0.72	4.66%
Electric & Gas	0	0	0	0.00%
Advertising	0	0	0	0.00%
Admin	0	0	0	0.00%
Repairs & Main	0	0	0	0.00%
Grounds & Landscaping	0	0	0	0.00%
Insurance	0	0	0	0.00%
Property Tax	0	0	0	0.00%
Mgt fee	0	0	0	0.00%
Total	\$48,000.00	\$480.00	\$0.72	5%
NOI	\$983,040.00	\$9,400.80	\$14.83	91%

Cap Rate	8.50%
NOI	\$983,040.00
Purchase price	\$11,565,176.47

Post-renovation analysis:

Post-Renv Rents						
Type	Units	Unit Size	Total Sq ft	Rent/month	Total rent/mor	Total rent /yr
1 bed/1 bath	0	0	0	0	0	0
2 bed/ 2 bath	100	663	66300	\$1,115.00	\$111,500.00	\$1,338,000.00
Total	100	663	66300	\$1,115.00	\$111,500.00	\$1,338,000.00

Increase in Rents (Post-Renv)						
1 bed/1 bath				0	0	0
2 bed/ 2 bath				\$220.00	\$22,000.00	\$264,000.00
Difference (Benefit)				\$220.00	\$22,000.00	\$264,000.00

Annual Income Statement				
Income	Total	Per Unit	Per Sq.ft	% of GPR
Gross Rent	\$1,338,000.00	\$13,380.00	20.18099548	100.00%
Loss to lease	\$0.00	\$0.00	0	0.00%
Vacancy loss	-\$53,520.00	-\$1,070.40	-0.807239819	-4.00%
Credit loss	\$0.00	\$0.00	0	0.00%
Eff. Gross Income	\$1,284,480.00	\$12,309.60	\$19.37	96.00%
Operating expenses				
				% of EGI
Water heating	\$48,000.00	\$480.00	\$0.72	3.74%
Electric & Gas	\$0.00	\$0.00	0	0.00%
Advertising	\$0.00	\$0.00	0	0.00%
Admin	\$0.00	\$0.00	0	0.00%
Repairs & Main	\$0.00	\$0.00	0	0.00%
Grounds & Landscaping	\$0.00	\$0.00	0	0.00%
Insurance	\$0.00	\$0.00	0	0.00%
Property Tax	\$0.00	\$0.00	0	0.00%
Mgt fee	\$0.00	\$0.00	0	0.00%
Total	\$48,000.00	\$480.00	1	4%
NOI	\$1,236,480.00	\$11,829.60	\$18.65	92%

Given cap rate	8.50%
Return Analysis	
Post-Renv NOI	\$1,236,480.00
Pre-Renv NOI	\$983,040.00
Net Improv in NOI	\$253,440.00
Renv Budget	\$200,000.00
Incremental return to NOI	126.72%
Value Created (@8.5% cap)	\$2,981,647.06
Renv Exp	\$200,000.00
Total Value added	\$2,781,647.06

Value Created

\$2,781,647.06

Q4: Briefly outline the key qualitative factors that could influence Joe's ability to achieve the expected increased rents upon completion of his renovation project.

Soln:

The financial performance evaluation after undertaking improvements has delivered good incremental returns and total return thereby enhancing value creation. The ability to attain such returns on investment is subject to risks and needs due consideration of advanced issues.

- Tenants may or may not renew leases which might impact the occupancy rate and lower the rental income
- With no given time frame for improvements and lack of visibility into tenant disruption, Joe is exposed to risks such as providing rental concessions to tenants to compensate for disruption, potential loss of rental income due to tenants vacating and any unforeseen liabilities such as accidents and other factors
- Given the lack of clear "rent roll" details, risks such as non-extension of leases, no-escalations, tenant credit defaults and lease losses are not obvious and may surface anytime before the renovations are completed
- Joe's 2/2 bedroom units are significantly smaller than Class A & Class B comparables and the investments in improvements may not payoff if tenants are not satisfied with unit size limitation. Competing Class A properties seem to be more attractive to tenants given the amenities and the unit sizes provided.
- Joe's reliance on market statistics and reports may not truly reflect the tastes of the current tenants and his hope of increased rents may not be feasible.
- If Joe wants to finance his renovations through debt then the current NOI needs to be adjusted for interest expenses.
- Joe's forecast of increased rents may not hold if macro-economic forces are un-favorable and overall the state of the economy turns negative
- Rehab plan may not be competitive enough to be on par with rivals
- Market's perception of the asset may change over time
- Ability to execute improvement plans can be difficult or may be poorly executed.