

Fin 5433: Solutions to Problems - Chapter 9
Income-Producing Properties: Leases, Rents, and the Market for Space

Problem 9-1

a)

Discount rate 10.00%

I. Net Lease with Steps:

Year	1	2	3	4	5
Net Rent	\$15.00	16.50	18.00	19.50	21.00
Average rent		\$18.00			
Present value		\$67.15			
Effective rent		\$17.72			

II. Net Lease with 100% CPI Adjustment:

Year	1	2	3	4	5
Exp. CPI		3.00%	3.00%	3.00%	3.00%
Net Rent	\$16.00	16.48	16.97	17.48	18.01
Average rent		\$16.99			
Present value		\$64.04			
Effective rent		\$16.89			

III. Gross Lease

Year	1	2	3	4	5
Gross rent	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Less: expenses	\$9.00	10.00	11.00	12.00	13.00
Net rent	21.00	20.00	19.00	18.00	17.00
Average rent		\$19.00			
Present value		\$72.74			
Effective rent		\$19.19			

IV. Gross Lease with Expense Stop at \$9.00 and CPI Adjustment:

Year	1	2	3	4	5
Exp. CPI		3.00%	3.00%	3.00%	3.00%
Gross rent	\$22.00	\$22.66	\$23.34	\$24.04	\$24.76
Less: expenses	\$9.00	10.00	11.00	12.00	13.00
Plus: reimbursement	0.00	1.00	2.00	3.00	4.00
Net rent	13.00	13.66	14.34	15.04	15.76
Average rent		\$14.36			
Present value		\$53.94			
Effective rent		\$14.23			

Note: Effective Rent = Present Value / PVIFA, 10%, 5yrs

- b) With the first type of lease, the tenant bears the risk of any unexpected change in operation expense. For the lessor, although the lease includes a step-up, higher than anticipated inflation could erode the real value of the rental income.

The second alternative includes a CPI adjustment rather than fixed step-ups. The risk of unexpected inflation is shifted to the lessee.

The third alternative is a gross lease. This is much riskier for the lessor than any of the net leases. The lessor bears the risk if operating expenses differ from what is expected.

The fourth one is a gross lease that combines a CPI adjustment with an expense stop. This shifts the risk of any increases in expenses to the tenant, while retaining any decrease in expenses.

Overall, if we rank the alternatives in terms of risk to the lessor, from the least risky to the most risky, the order should be: Gross Lease with Expense Stop and CPI Adjustments, Net Lease with CPI Adjustments, Net Lease with Steps and Gross Lease. That is: $4 < 2 < 1 < 3$.

- c) Based on the analysis in (b), we might expect the effective rents for the four alternatives should exhibit the same order, from the least to the most risky to the lessor: $4 < 2 < 1 < 3$. As the results showed in (a), the effective rents for four alternatives do rank the same way. The one with the most risk is also the one that offers the greatest effective rent.

Problem 9-2

(a) Total Rentable Area	=	Gross Area – Interior Area – Common Area
225,000 sq. ft.	=	300,000 - 45,000 - 30,000
(b) Load Factor on 7 th Floor	=	Rentable Area / Usable Area
1.12	=	28,000 / 25,000
Common Area on 7 th Floor	=	Rentable Area – Usable Area
3,000	=	28,000 - 25,000
(c) Rentable Area for the Tenant	=	Usable Area x Load Factor
5,600 sq. ft.	=	5,000 x 1.12
Total Rent for the Tenant	=	Rent per sq. ft. of Rentable Area x Rentable Area
	=	\$30.00 x 5,600
(d) Total Rentable Area : 225,000		
Rentable and Common area: 255,000	=	225,000 + 30,000
Total Load Factor : 1.27	=	1.12 x 255,000/225,000
Rentable area: 6,350	=	1.27 x 5,000
(e) Total Rent for the Tenant	=	Rent per sq. ft. of Rentable Area x Rentable Area
\$190,500	=	\$30.00 x 6,350

Problem 9-3

(a) Yes Atrium's \$24 rent psf with move in allowance and TI is justified because it results in a greater effective rent per square foot than ACME's proposal.

Acme's proposal – rentable area 20,000 sq. ft.

Year	1	2	3	4	5
Net Rent	\$ 20.00	\$ 21.00	\$ 22.00	\$ 23.00	\$24.00
Present Value	= \$82.68				
Effective rent/square foot	= \$21.81				

Atrium's proposal – rentable area 20,000 sq. ft.

Year	1	2	3	4	5
Net Rent	\$ 24.00	\$ 25.00	\$ 26.00	\$27.00	\$28.00
Present Value	= \$97.84				
TI	-\$5.00				
Moving Allow	-\$2.50				
Net Present Value	\$90.34				
Effective rent/square foot	= \$23.83				

Problem 9-3

(b) Atrium should not agree to lease buyout because it gives even lesser effective rent per square feet than both of the proposals in (a).

Year	1	2	3	4	5
Net Rent	\$ 23.00 - \$15.00(buyout) = \$ 8.00	\$ 24.00	\$25.00	\$26.00	\$27.00
Present Value	=\$80.41				
Effective rent/square foot	= \$21.21				

Problem 9-4

In-line occupied area = 1,300,000 square feet

Common Area = Total area – Anchor tenant occupied area - In-line occupied area = 700,000 square feet

Total Maintenance cost = common area * maintenance cost psf = 700,000*\$8 = \$5,600,000

Anchor contribution to CAM = \$2 per s.f. x 800 s.f. = \$1,600,000

CAM(Additional rent per square feet covered by in-line tenant) = (total maintenance cost – anchor contribution) / In-line occupied area = (\$5,600,000 - \$1,600,000) /1,300,000 = \$3.08 per square feet

In line tenants would have to pay \$3.08 per s.f. in CAM charges, plus their base rent per square foot of rentable area.

Problem 9-5

(A) Option A is best because it gives higher effective rent psf. See the calculations below

Option A

Year	1	2	3	4	5
Base Rent	\$25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00
CAM	\$ 3.00	3.18	3.37	3.57	\$ 3.79
Net Rent	\$28.00	29.18	\$30.37	\$ 31.57	\$ 32.79
Present Value	=NPV(10%,Rent_each_year)		\$114.31		
Effective rent/square foot		\$ 31.71			

Option B

Year	1	2	3	4	5
Base Rent	\$23.00	\$24.00	\$25.00	\$26.00	\$27.00
CAM	\$ 3.00	\$ 3.18	3.3708	3.57	3.79
Net Rent	\$26.00	\$27.18	\$28.37	\$29.57	\$30.79
Sales	\$850,000.000	935000	1028500	1131350	124485
Overage Rent	\$ 0 -	\$2,800	\$10,280	\$18,508	\$27,559
PV of Net Rent	= NPV(10%,Ret_each_year)		\$ 1,013,396.12		
PV of Overage Rent	= NPV(10%,overage rent)		\$ 36,949.02		
PV of Total Rent Revenue	= Net Rent + Overage rent)		\$ 1,050,345.14		
Effective rent/square foot	= Effective rent/Rentable_area		\$ 29.14		

(B) Even when sales is expected to grow by 20% per year, option A is still better than option B because it gives effective rent of \$31.71 compared to effective rent of \$30.73 for option B.

Year		1	2	3	4	5
Base Rent		\$ 23.00	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00
CAM		\$ 3.00	\$ 3.18	\$ 3.37	\$ 3.57	\$ 3.79
Net Rent		\$ 26.00	\$ 27.18	\$ 28.37	\$ 29.57	\$ 30.79
Sales		\$850,000	\$ 1,020,000	\$ 1,224,000	\$ 1,468,800	\$ 1,762,560
Overage Rent		\$ -	\$ 9,600.00	\$ 25,920.00	\$ 45,504.00	\$ 69,004.80

Calculate Effective Rent:		
PV of Net Rent	= NPV (10%, Rent_each_year)	\$1,013,396.12
PV of Overage Rent	= NPV (10%, Overage Rent)	\$ 94,176.20
PV of Total Rent Revenue	= Net Rent + Overage Rent	\$1,107,572.32
Effective rent/square foot	= Effective rent/Rentable_area)	\$ 30.73

Problem 9-6 (see notes A-E below for explanation)

Gross Potential Income (A)		1,620,000
Loss to Lease (B)		7,950
Vacancy & Collection Loss (C)		<u>128,160</u>
Net Rental Income		1,483,890
Recoveries (D)	220,800	
Other Income	<u>200,000</u>	<u>420,800</u>
Total Income		1,904,690
Operating Expenses (E)		<u>893,200</u>
NOI		1,011,490
Recurring Expenses	100,000	
Non-recurring Expenses	<u>250,000</u>	<u>350,000</u>
Net Cash Flow		<u><u>661,490</u></u>

Notes A-E

(A) <u>1st 6 months</u>	<u>2nd 6 months</u>	<u>Total</u>
40 units @ \$550 @ 6 mos = \$132,000	@ 560 = 134,400	
80 units @ 600 @ 6 mos = 288,000	@ 610 = 292,800	
80 units @ 800 @ 6 mos = <u>384,000</u>	@ 810 = <u>388,800</u>	
Total \$804,000	816,000	\$1,620,000

(B) 10 units * (550-500) 9 mos = 4,500
 20 units * (600-580) 10 mos = 4,000
 10 units * (805-800) 11 mos = (550)
 \$7,950

<u>1st 6 mos</u>	<u>2nd 6 mos</u>	
(C) 4 units * 550 * 6 = 13,200	4 units * 560 * 6 = 13,440	
6 units * 600 * 6 = 21,600	6 units * 610 * 6 = 21,960	
<u>6 units * 800 * 6 = 28,800</u>	<u>6 units * 810 * 6 = 29,160</u>	
16 63,600	16 64,560	128,160

(D) 184 units @ 100 @ 12 mos = 220,800

(E) 184 units @ 400 @ 12 mos
 + \$10,000 apt. locator = 893,200