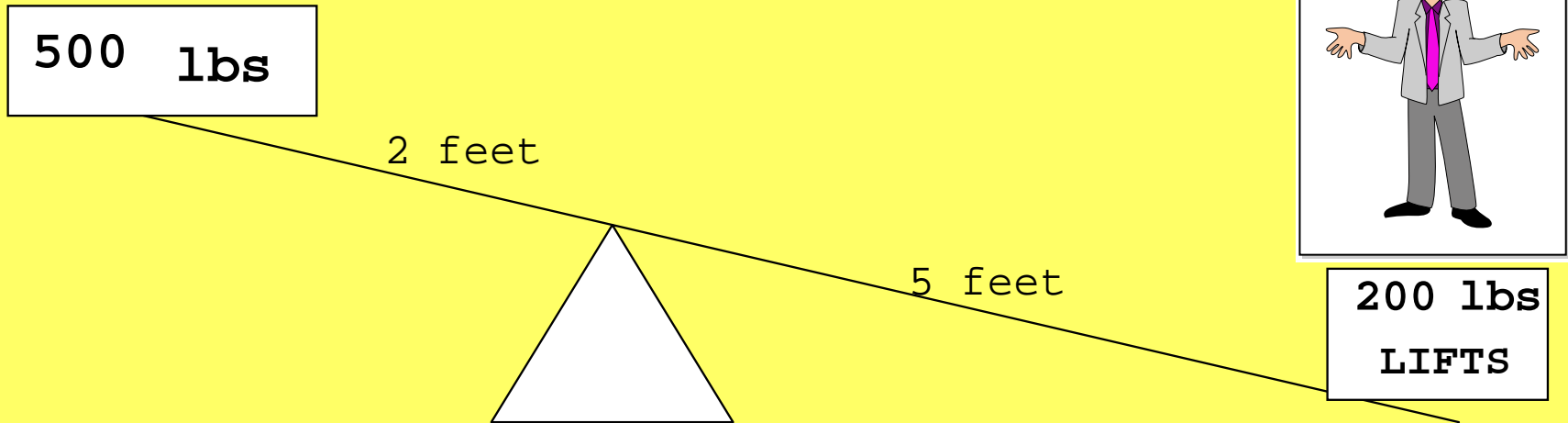


CHAPTER 13: LEVERAGE.

(The use of debt)

The analogy of physical leverage & financial leverage...

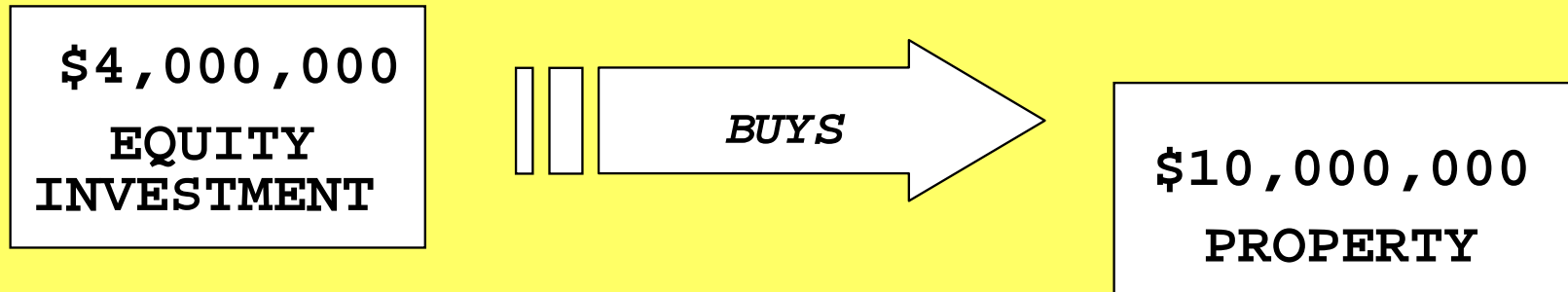
A Physical Lever...



$$\text{"Leverage Ratio"} = 500/200 = 2.5$$

“Give me a place to stand, and I will move the earth.”
- Archimedes (287-212 BC)

Financial Leverage...



"Leverage Ratio" = \$10,000,000 / \$4,000,000 = 2.5

Equity = \$4,000,000

Debt = \$6,000,000

Terminology...

“Leverage”

“Debt Value”, “Loan Value” (L) (or “D”).

“Equity Value” (E)

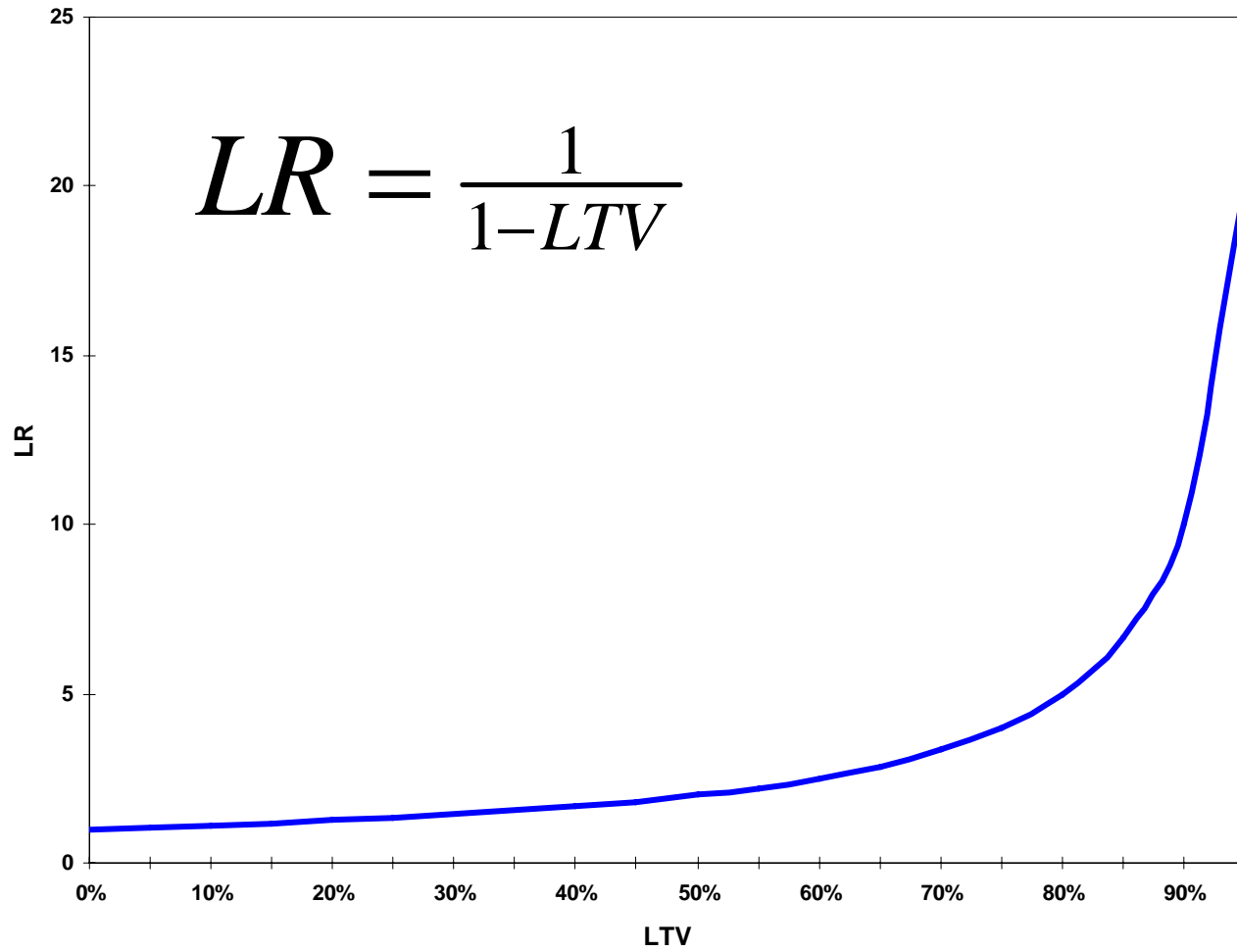
“Underlying Asset Value” ($V = E+L$):

“Leverage Ratio“ = $LR = V / E = V / (V-L) = 1/(1-L/V)$
(Not the same as the “Loan/Value Ratio”: L / V , or “LTV” .)

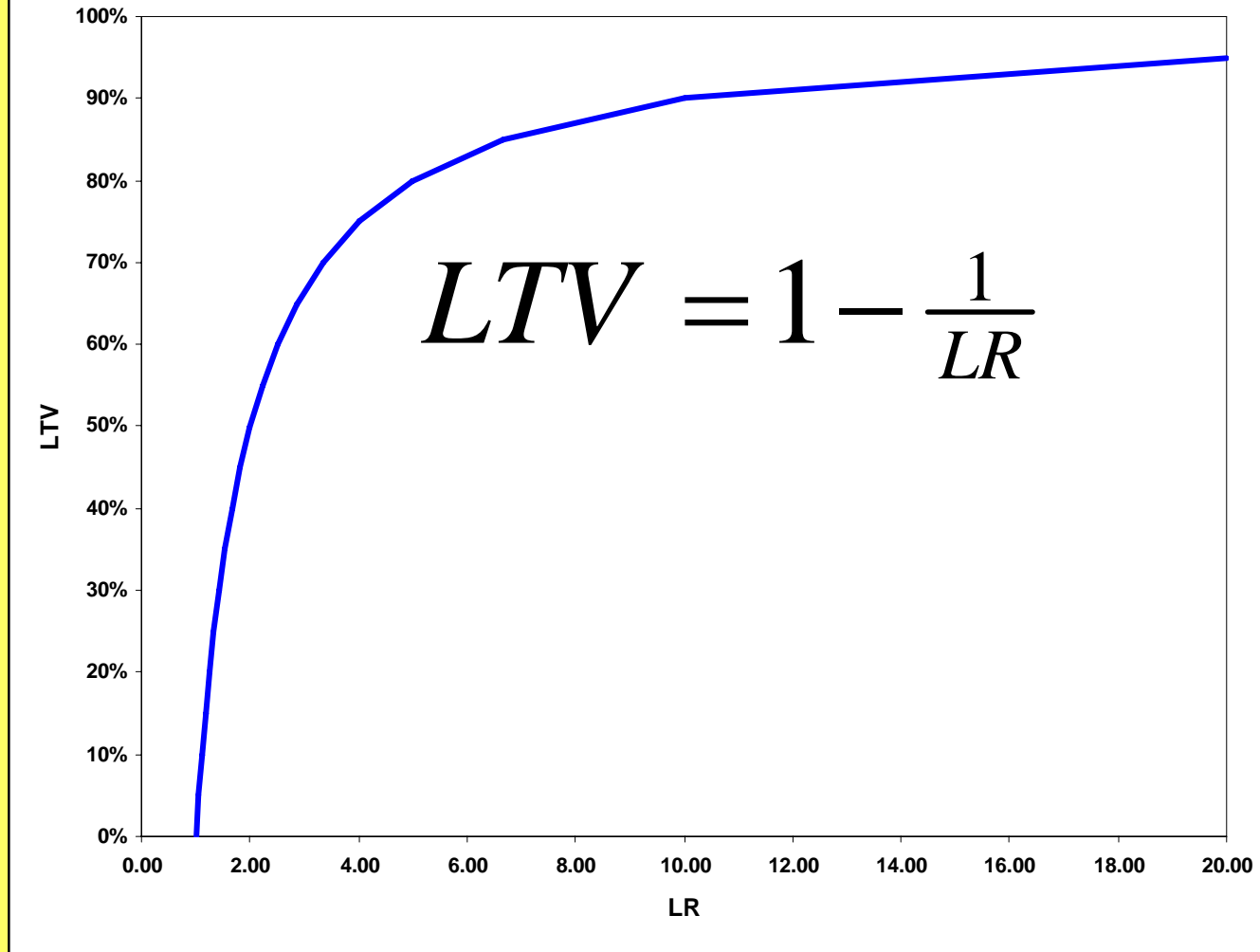
“Risk”

The **RISK** that matters to investors is the risk in their total return, related to the **standard deviation** (or range or spread) in that return.

Leverage Ratio & Loan-to-Value Ratio



Leverage Ratio & Loan-to-Value Ratio



Effect of Leverage on Risk & Return

(Numerical Example)...

Example Property & Scenario Characteristics:

Current (t=0) values (known for certain):

$$E_0[CF_1] = \$800,000$$

$$V_0 = \$10,000,000$$

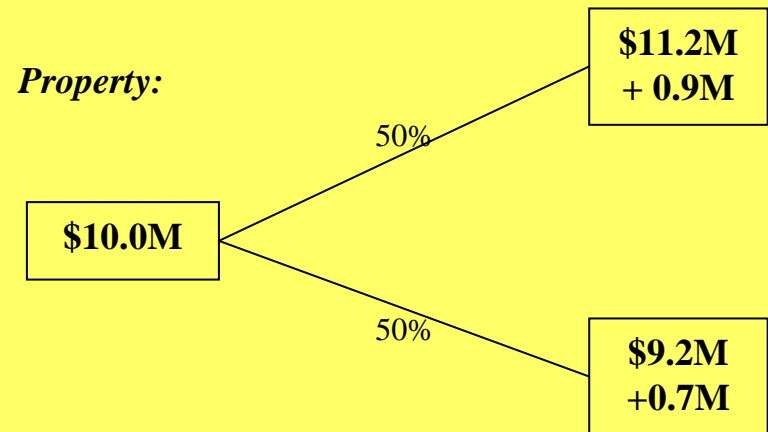
Possible Future Outcomes are risky (next year, t=1):

"Pessimistic" scenario (1/2 chance):

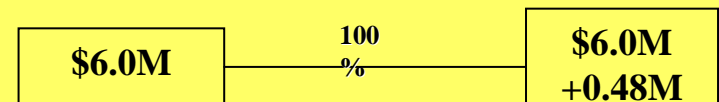
$$CF_1 = \$700,000; V_1 = \$9,200,000.$$

"Optimistic" scenario (1/2 chance):

$$CF_1 = \$900,000; V_1 = \$11,200,000.$$



Loan:



Case I: All-Equity (No Debt: Leverage Ratio=1, L/V=0)...

Item	<u>Pessimistic</u>	<u>Optimistic</u>
Inc. Ret. (y):	$700/10000 = 7\%$	$900/10000 = 9\%$
Ex Ante:	$(1/2)7\% + (1/2)9\% = 8\%$	
RISK:	$\pm 1\%$	
App. Ret. (g):	$(9.2-10)/10 = -8\%$	$(11.2-10)/10 = +12\%$
Ex Ante:	$(1/2)(-8) + (1/2)(12) = +2\%$	
RISK:	$\pm 10\%$	

Case II: Borrow \$6 M @ 8%, with DS=\$480,000/yr (Leverage Ratio=2.5, L/V=60%)...

Item	<u>Pessimistic</u>	<u>Optimistic</u>
Inc. Ret.:	$(0.7-0.48)/4.0 = 5.5\%$	$(0.9-0.48)/4.0 = 10.5\%$
Ex Ante:	$(1/2)5.5 + (1/2)10.5 = 8\%$	
RISK:	$\pm 2.5\%$	
App. Ret.:	$(3.2-4.0)/4.0 = -20\%$	$(5.2-4.0)/4.0 = +30\%$
Ex Ante:	$(1/2)(-20) + (1/2)(30) = +5\%$	
RISK:	$\pm 25\%$	

Exhibit 13-2: Typical Effect of Leverage on Expected Investment Returns

	Property	Levered Equity	Debt
Initial Value	\$10,000,000	\$4,000,000	\$6,000,000
Cash Flow	\$800,000	\$320,000	\$480,000
Ending Value	\$10,200,000	\$4,200,000	\$6,000,000
Income Return	8%	8%	8%
Apprec.Return	2%	5%	0%
Total Return	10%	13%	8%

Exhibit 13-3: Sensitivity Analysis of Effect of Leverage on Risk in Equity Return Components, as Measured by Percentage Range in Possible Return Outcomes. (\$ Values in millions)

	Property (LR=1)			Levered Equity (LR=2.5)			Debt (LR=0)		
	OPT	PES	RANGE	OPT	PES	RANGE	OPT	PES	RANGE
Initial Value	\$10.00	\$10.00	NA	\$4.0	\$4.0	NA	\$6.0	\$6.0	NA
Cash Flow	\$0.9	\$0.7	±\$0.1	\$0.42	\$0.22	±\$0.1	\$0.48	\$0.48	0
Ending Value	\$11.2	\$9.2	±\$1.0	\$5.2	\$3.2	±\$1.0	\$6.0	\$6.0	0
Income Return	9%	7%	±1%	10.5%	5.5%	±2.5%	8%	8%	0
Apprec.Return	12%	-8%	±10%	30%	-20%	±25%	0%	0%	0
Total Return	21%	-1%	±11%	40.5%	-14.5%	±27.5%	8%	8%	0

OPT = Outcome if "Optimistic" Scenario occurs.

PES = Outcome if "Pessimistic" Scenario occurs.

RANGE = Half the difference between "Optimistic" Scenario outcome and "Pessimistic" Scenario outcome.

Note: Initial values are known deterministically, as they are in present, not future, time, so there is no range.

- ➔ Return risk (y,g,r) directly proportional to Levg Ratio (not L/V).
- ➔ E[g] directly proportional to Leverage Ratio.
- ➔ E[r] increases with Leverage, but not proportionately.
- ➔ E[y] does not increase with leverage (here).
- ➔ E[RP] = E[r]-rf is directly proportional to Leverage Ratio (here)...

Exhibit 13-4: Effect of Leverage on Investment Risk and Return: The Case of Riskless Debt...

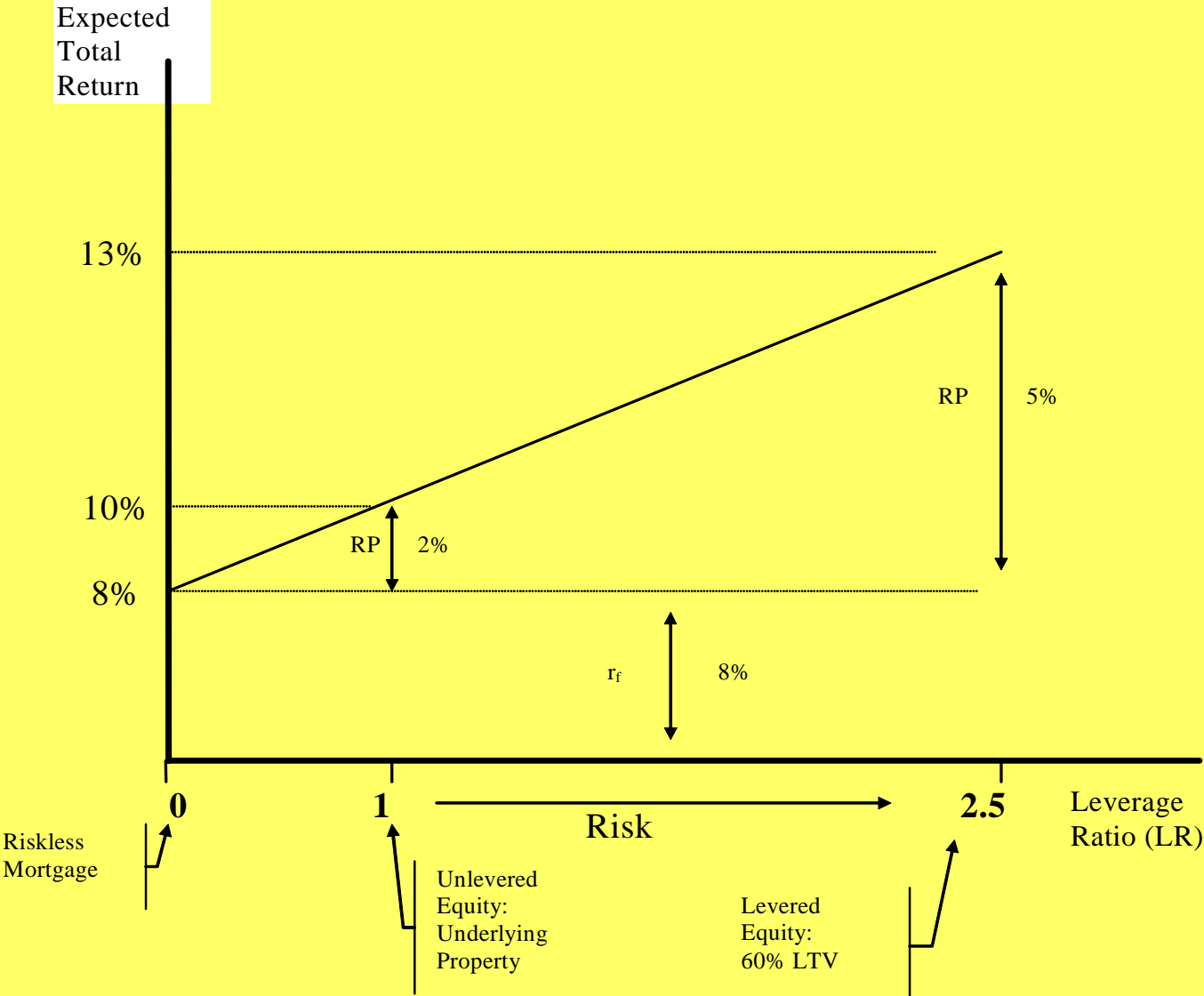
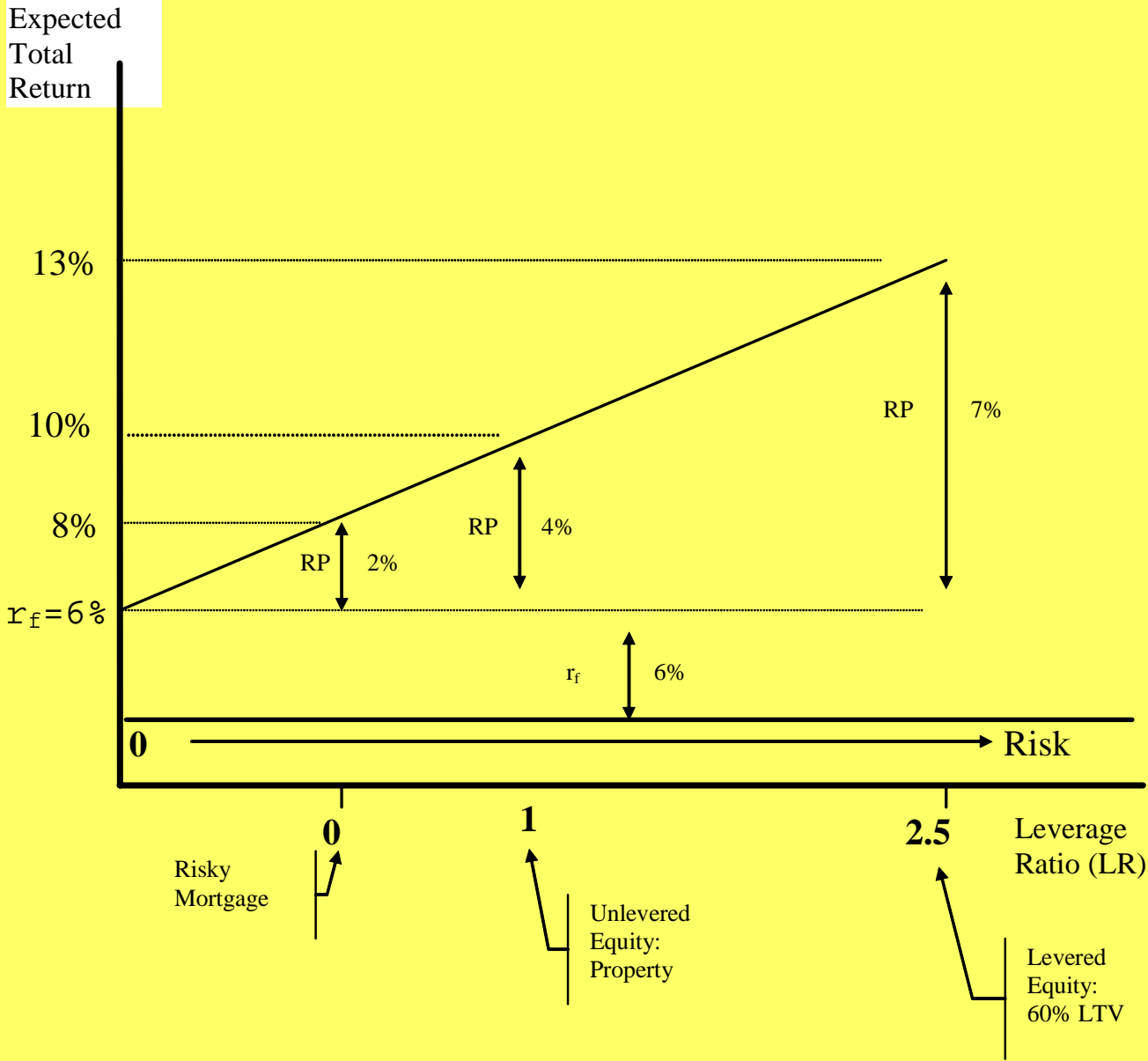


Exhibit 13-5: Effect of Leverage on Investment Risk and Return: The Case of Risky Debt...



A really useful formula. . .

The "Weighted Average Cost of Capital" (WACC) Formula . . .

$$r_P = (L/V)r_D + [1-(L/V)]r_E$$

Derivation of the WACC Formula:

$$V = E + D$$

$$\Rightarrow \frac{\Delta V}{V} = \frac{\Delta E}{V} + \frac{\Delta D}{V} = \frac{\Delta E}{V} \frac{E}{E} + \frac{\Delta D}{V} \frac{D}{D} = \frac{E}{V} \frac{\Delta E}{E} + \frac{D}{V} \frac{\Delta D}{D} = \left(\frac{V-D}{V} \right) \frac{\Delta E}{E} + \frac{D}{V} \frac{\Delta D}{D}$$

$$\Rightarrow \frac{\Delta V}{V} = \left(1 - \frac{D}{V} \right) \frac{\Delta E}{E} + \frac{D}{V} \frac{\Delta D}{D}$$

\Rightarrow WACC:

$$r_P = (1 - LTV)r_E + (LTV)r_D$$

Where: r_E = Levered Equity Return,

r_P = Property Return,

r_D = Debt Return,

LTV = Loan-to-Value Ratio (D/V).

Invert for equity formula:

$$r_E = \frac{r_P - (LTV)r_D}{(1 - LTV)}$$

Or, equivalently, if you prefer . . .

$$E = V - D$$

$$\Rightarrow \frac{\Delta E}{E} = \frac{\Delta V}{E} - \frac{\Delta D}{E} = \frac{\Delta V}{E} \frac{V}{V} - \frac{\Delta D}{E} \frac{D}{D} = \frac{V}{E} \frac{\Delta V}{V} - \frac{D}{E} \frac{\Delta D}{D}$$

$$\Rightarrow \frac{\Delta E}{E} = \frac{V}{E} \frac{\Delta V}{V} - \frac{(V - E)}{E} \frac{\Delta D}{D} = \frac{V}{E} \frac{\Delta V}{V} - \left(\frac{V}{E} - 1 \right) \frac{\Delta D}{D} = \frac{\Delta D}{D} + \frac{V}{E} \left(\frac{\Delta V}{V} - \frac{\Delta D}{D} \right)$$

\Rightarrow WACC:

$$r_E = (LR)r_P + (1 - LR)r_D = r_D + (r_P - r_D)LR$$

Where: r_E = Levered Equity Return,

r_P = Property Return,

r_D = Debt Return,

LR = Leverage Ratio (V/E).

Using the WACC formula in real estate:

The "Weighted Average Cost of Capital" (WACC) Formula . . .

$$r_P = (L/V)r_D + [1-(L/V)]r_E$$

(L/V) = Loan/value ratio

r_D = Lender's return (return to the debt)

r_E = Equity investor's return.

Apply to r, y, or g. . .

E.g., in previous numerical example:

$$E[r] = (.60)(.08) + (.40)(.13) = 10\%$$

$$E[y] = (.60)(.08) + (.40)(.08) = 8\%$$

$$E[g] = (.60)(0) + (.40)(.05) = 2\%$$

(Can also apply to RP.)

In real estate,

Difficult to directly and reliably observe levered return,

But can observe return on loans,

and can observe return on property (underlying asset).

So, "invert" WACC Formula:

Solve for unobservable parameter as a function of the observable parameters:

$$r_E = \{r_P - (L/V)r_D\} / [1 - (L/V)]$$

(Or in y or in g.)

(In y it's "cash-on-cash" or "equity cash yield")

Note:

WACC based on accounting identities:

Assets = Liabilities + Owners Equity,

Property Cash Flow = Debt Cash Flow +
Equity Cash Flow

WACC is approximation,

Less accurate over longer time interval
return horizons.

Using WACC to avoid a common mistake. . .

Suppose REIT A can borrow @ 6%, and REIT B @ no less than 8%. Then doesn't REIT A have a lower cost of capital than REIT B?

Answer: Not necessarily. Suppose (for example):

REIT A: $D/E = 3/7$. $\rightarrow D/V = L/V = 30\%$.

REIT B: $D/E = 1$. $\rightarrow D/V = L/V = 50\%$.

& suppose both A & B have cost of equity = $E[r_E] = 15\%$.

Then:

$WACC(A) = (0.3)6\% + (0.7)15\% = 1.8\% + 10.5\% = 12.3\%$

$WACC(B) = (0.5)8\% + (0.5)15\% = 4\% + 7.5\% = 11.5\%$

So in this example REIT A has a higher cost of capital than B, even though A can borrow at a lower rate. (Note, this same argument applies whether or not either or both investors are REITs.) You have to consider the cost of your equity as well as the cost of your debt to determine your cost of capital.

13.4

“POSITIVE” & “NEGATIVE” LEVERAGE

“Positive leverage” = When more debt will increase the equity investor’s (borrower’s) return.

“Negative leverage” = When more debt will decrease the equity investor’s (borrower’s) return.

“POSITIVE” & “NEGATIVE” LEVERAGE

Whenever the Return Component is higher in the underlying property than it is in the mortgage loan, there will be "Positive Leverage" in that Return Component...

See this via The “leverage ratio” version of the WACC. . .

$$\mathbf{r_E = r_D + LR*(r_P - r_D)}$$

Derivation of the Leverage Ratio Version of the WACC:

$$E = V - D$$

$$\Rightarrow \frac{\Delta E}{E} = \frac{\Delta V}{E} - \frac{\Delta D}{E} = \frac{\Delta V}{E} \frac{V}{V} - \frac{\Delta D}{E} \frac{D}{D} = \frac{V}{E} \frac{\Delta V}{V} - \frac{D}{E} \frac{\Delta D}{D}$$

$$\Rightarrow \frac{\Delta E}{E} = \frac{V}{E} \frac{\Delta V}{V} - \frac{(V - E)}{E} \frac{\Delta D}{D} = \frac{V}{E} \frac{\Delta V}{V} - \left(\frac{V}{E} - 1 \right) \frac{\Delta D}{D} = \frac{\Delta D}{D} + \frac{V}{E} \left(\frac{\Delta V}{V} - \frac{\Delta D}{D} \right)$$

\Rightarrow WACC:

$$r_E = (LR)r_P + (1 - LR)r_D = r_D + (r_P - r_D)LR$$

Where: r_E = Levered Equity Return,

r_P = Property Return,

r_D = Debt Return,

LR = Leverage Ratio (V/E).

Exhibit 13-6: Typical relative effect of leverage on income and growth components of investment return (numerical example)...

Property total return (r_P): 10.00%				
Cap rate (y_P): 8.00%				
Positive cash-on-cash leverage...				
Loan Interest rate (r_D): 6.00%				
Mortgage Constant (y_D): 7.00%				
Equity return component:				
LR	LTV	y_E	g_E	r_E
1	0%	8.00%	2.00%	10.00%
2	50%	9.00%	5.00%	14.00%
3	67%	10.00%	8.00%	18.00%
4	75%	11.00%	11.00%	22.00%
5	80%	12.00%	14.00%	26.00%
Negative cash-on-cash leverage...				
Loan Interest Rate (r_D): 8.00%				
Mortgage Constant (y_D): 9.00%				
Equity return component:				
LR	LTV	y_E	g_E	r_E
1	0%	8.00%	2.00%	10.00%
2	50%	7.00%	5.00%	12.00%
3	67%	6.00%	8.00%	14.00%
4	75%	5.00%	11.00%	16.00%
5	80%	4.00%	14.00%	18.00%

e.g.:

Total: 10% =
 $(67\%)*6\% + (33\%)*18\%$

Yield: 8% =
 $(67\%)*7\% + (33\%)*10\%$

Growth: 2% =
 $(67\%)*(-1\%) + (33\%)*8\%$

Leverage skews total return relatively toward growth component, away from current income yield.

SUMMARY OF LEVERAGE EFFECTS...

- (1) Under the typical assumption that the loan is less risky than the underlying property, leverage will increase the ex ante total return on the equity investment, by increasing the risk premium in that return.**

- (2) Under the same relative risk assumption, leverage will increase the risk of the equity investment, normally proportionately with the increase in the risk premium noted in (1).**

- (3) Under the typical situation of non-negative price appreciation in the property and non-negative amortization in the loan, leverage will usually shift the expected return for the equity investor relatively away from the current income component and towards the growth or capital appreciation component.**

Real world example:

Recall...

**The R.R. Donnelly
Bldg, Chicago**

**\$280 million,
945000 SF,
50-story
Office Tower**

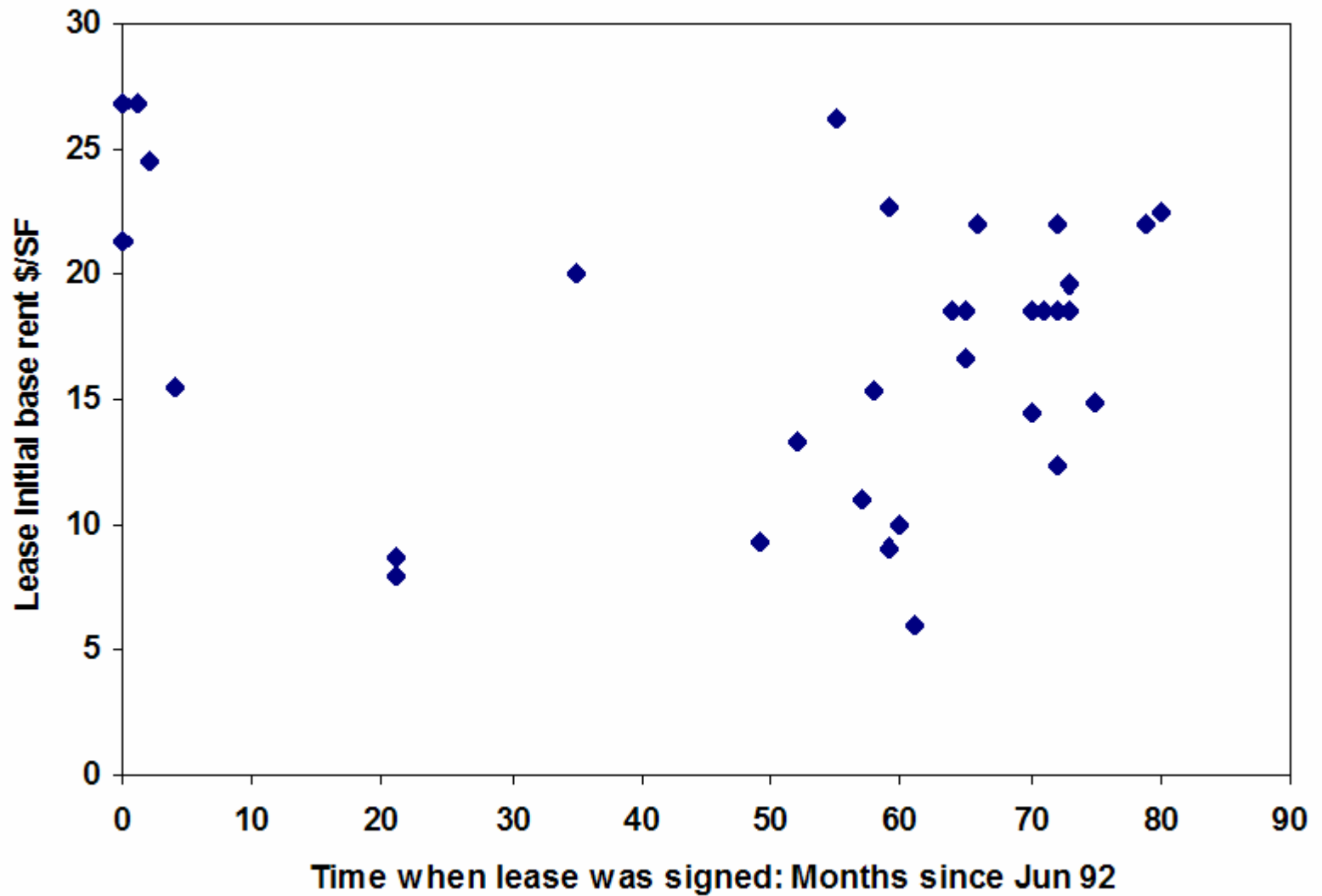
Location:

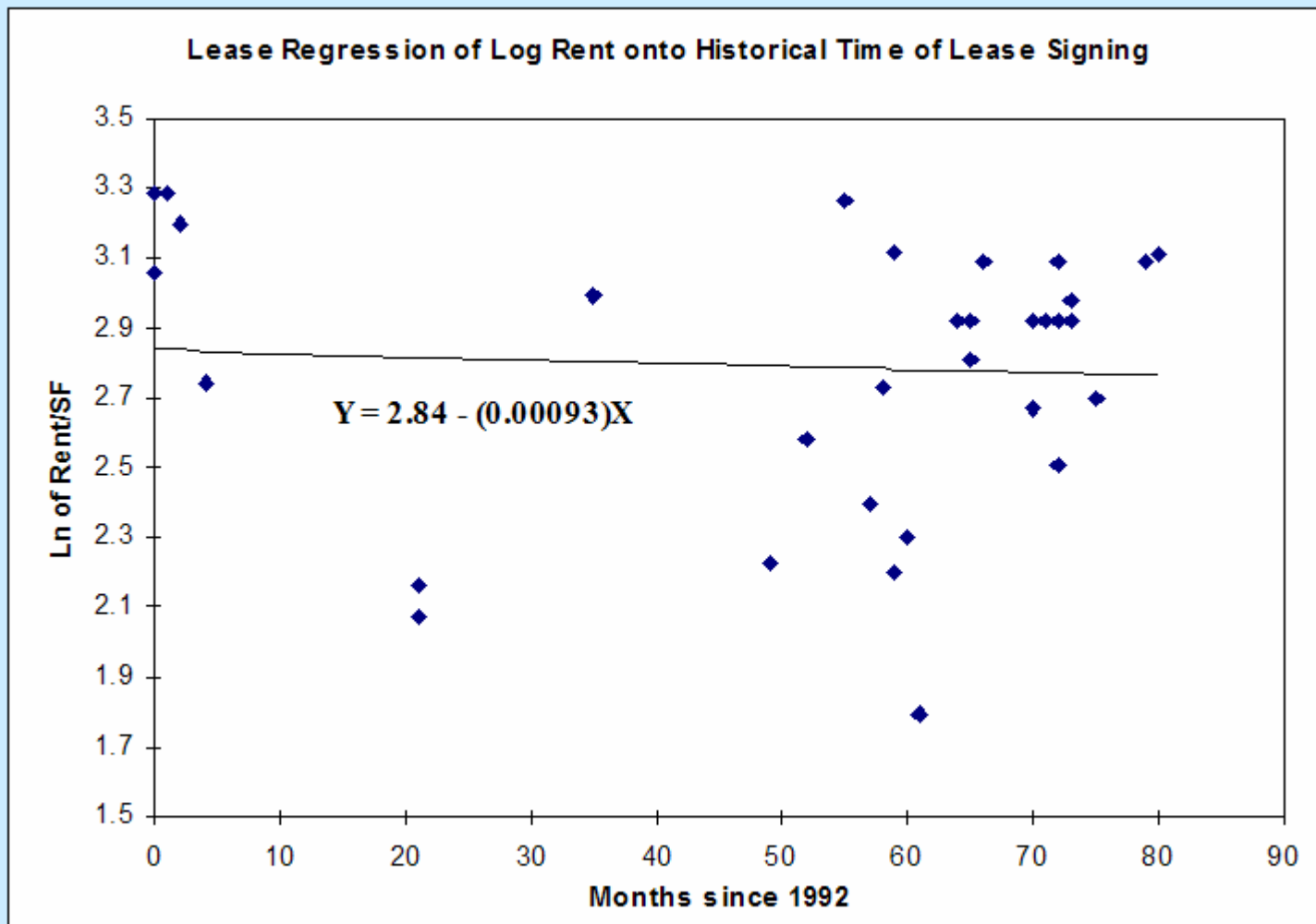
**In “The Loop” (CBD) at W.Wacker Dr & N.Clark St,
On the Chicago River...**

Donnelley Bldg Pro Forma...

RR Donnelley Bldg Annual Cash Flow Projection											
Year:	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
POTENTIAL GROSS REVENUE											
Base Rental Revenue	24033811	24991054	25635350	26383811	27922939	28654131	29373663	30057496	29525448	29850252	30742749
Absorptn & Turnover Vac.	0	-122098	-45383	-284864	-538960	-64691	-280794	-98390	-3542566	-468748	-133817
Scheduled Base Rent Rev.	24033811	24868956	25589967	26098947	27383979	28589440	29092869	29959106	25982882	29381504	30608932
CPI & Other Adjustmt Rev.	1295978	1489696	1688258	1891784	2100397	2314227	2533401	2758056	465942	0	0
Expense Reimbursmt Rev.	13830780	14359735	14886942	15215378	15588172	16665170	17028629	17626489	16203409	18857047	19661109
Miscellaneous Income	270931	279059	287430	296054	304935	314082	323505	333212	343207	353504	364108
TOTAL PGR	39431500	40997446	42452597	43502163	45377483	47882919	48978404	50676863	42995440	48592055	50634149
Collection Loss	-561044	-592080	-625946	-638690	-681665	-759463	-770676	-811778	-827703	-867105	-921832
EFFECTIVE GROSS REVENUE	38870456	40405366	41826651	42863473	44695818	47123456	48207728	49865085	42167737	47724950	49712317
OPERATING EXPENSES											
Repairs & Maintenance	1723900	1775613	1829188	1883220	1938829	1998749	2057947	2120365	2171717	2248204	2316872
Contract Cleaning	1033459	1064415	1100189	1122605	1145141	1201526	1227982	1273344	1157614	1334681	1390062
Security	738946	761114	783949	807466	831690	856640	882340	908811	936075	964158	993081
Utilities	1076597	1108856	1145319	1170863	1196712	1250955	1280500	1326010	1237641	1393269	1447839
General & Administrative	741398	763639	786549	810146	834450	859483	885267	911825	939179	967355	996376
Insurance	144503	148838	153303	157902	162639	167518	172544	177720	183052	188543	194200
Real Estate Taxes	7943834	8182149	8427614	8680442	8940855	9209081	9485	9769914	10063012	10364902	10675849
Management Fee	971761	1010134	1045666	1071587	1117395	1178086	1205193	1246627	1054193	1193124	1242808
Non-Reimbursable	118890	122456	126131	129915	133812	137826	141961	146220	150607	155124	159778
TOTAL OPERATING EXPENSES	14493288	14937	15397908	15834146	16301523	16859864	17339088	17880836	17893090	18809360	19416865
NET OPERATING INCOME	24377168	25468152	26428743	27029327	28394295	30263592	30868640	31984249	24274647	28915590	30295452
LEASING & CAPITAL COSTS											
Tenant Improvements	272920	390507	138182	870713	1239057	621936	864411	233947	10949093	1439521	
Leasing Commissions	83615	121036	44684	456082	396166	289709	371606	74189	6473182	461531	
Structural Reserves	95281	98139	101084	104116	134759	220920	227548	234374	241405	248648	
RR Donnelley TI	0	0	0	100000	0	0	0	0	0	0	
TOTAL CAPITAL COSTS	451816	609682	283950	1530911	1769982	1132565	1463565	542510	17663680	2149700	
OPERATING NET CASH FLOW	23925352	24858470	26144793	25498416	26624313	29131027	29405075	31441739	6610967	26765890	
Reversion @8.75%, 1%Cost										342771400	
TOTAL NET CASH FLOW	23925352	24858470	26144793	25498416	26624313	29131027	29405075	31441739	6610967	369537290	

Donnelley Bldg Rent History: Current Office Leases





$$\text{Rent}_t = (\text{Rent}_0)e^{tg}$$

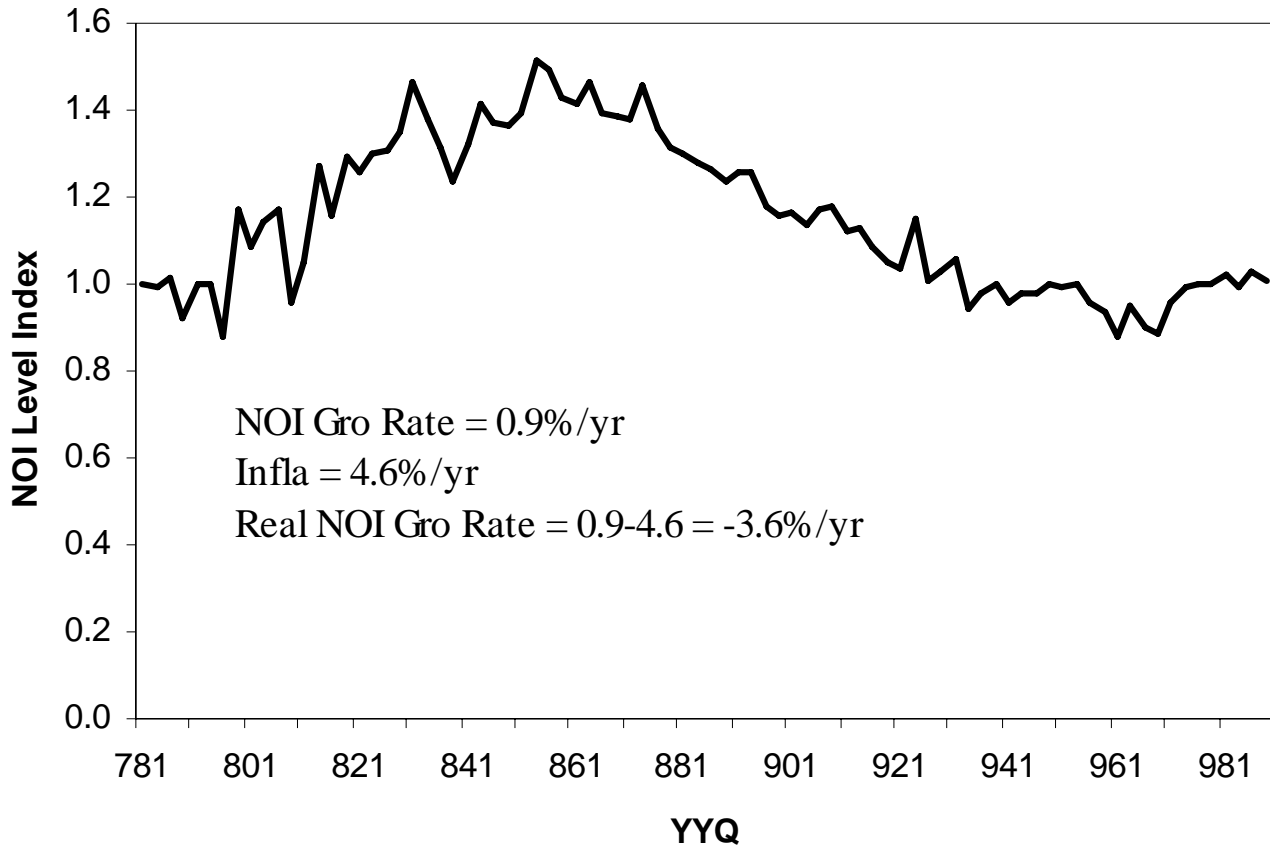
$$\text{Ln}(\text{Rent}_t) = \text{Ln}(\text{Rent}_0) + tg$$

$$(\text{Rent}_{12}/\text{Rent}_0) - 1 = e^{12g} - 1 = (2.7183)^{12 \cdot (-0.00093)} - 1 = -1.1\% \text{ per year} = \text{Ann. rent trend, 92-98.}$$

Infla (92-98) = 2.4%/yr.

→ Real rent trend = -1.1% - 2.4% = -3.5%/yr.

NCREIF Office Properties NOI Level



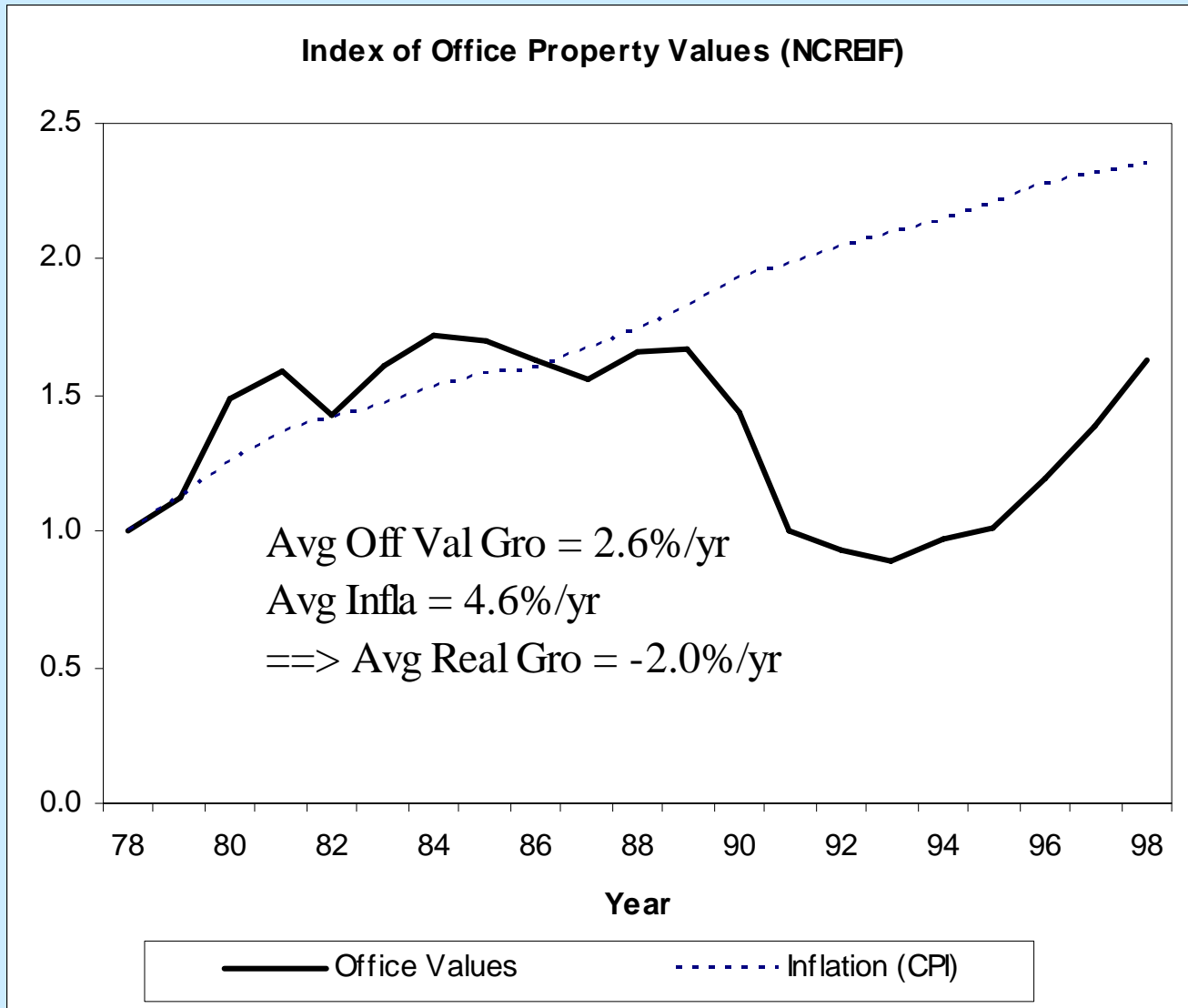


Exhibit 1: Presentation cash flow pro-forma for sale purposes

Assumptions (Staff's):		Implied Returns:											
Price	280000	Going-inCap	8.71%										
Terminal Cap Rate	8.75%	IRRs:											
CFGroRate Adjustment	0.00%	Property (Unlevered)	10.40%										
Cap.Imp.Adjustmt Factor	1	Levered (Undifferentiated)	14.36%										
		OTR (overall levered)	12.76%										
		Prime (levered)	19.24%										
Cash flow computations, Yr:	IRRs:	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
End Jun		<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Staff NOI			24377	25468	26429	27029	28394	30264	30869	31984	24275	28916	30295
Staff CI			452	610	284	1531	1770	1133	1464	543	17664	2150	752
Adjstd NOI			24377	25468	26429	27029	28394	30264	30869	31984	24275	28916	30295
Adjstd CI			452	610	284	1531	1770	1133	1464	543	17664	2150	752
Unlevered Property Level:													
CF			23925	24858	26145	25498	26624	29131	29405	31441	6611	26766	29543
Reversion												342766	
PBTCFs	10.40%	-280000	23925	24858	26145	25498	26624	29131	29405	31441	6611	369532	
DS			14588	14588	14588	14588	14588	14588	14588	14588	14588	14588	14588
OLB												132864	
DebtCFs	7.00%	-170000	14588	14588	14588	14588	14588	14588	14588	14588	14588	147452	
AfterDS: Levrd(Undiff)...													
Operating			9337	10270	11557	10910	12036	14543	14817	16853	-7977	12178	
ECFs	14.36%	-110000	9337	10270	11557	10910	12036	14543	14817	16853	-7977	222080	
OTR Positions...													
Preferred	9.50%	-66000	6270	6270	6270	6270	6270	6270	6270	6270	6270	72270	
OTRprorata	19.24%	-22000	1534	2000	2644	2320	2883	4137	4274	5292	-7124	74905	
OTRTotal	12.76%	-88000	7804	8270	8914	8590	9153	10407	10544	11562	-854	147175	
Prime Position:													
PrimeTotal	19.24%	-22000	1534	2000	2644	2320	2883	4137	4274	5292	-7124	74905	

Exhibit 2: More realistic cash flow projections

Assumptions (Geltner's):		Implied Returns:											
Price	280000	Going-inCap	8.71%										
Terminal Cap Rate	8.75%	IRRs:											
CFGroRate Adjustment	-1.60%	Property (Unlevered)	8.29%										
Cap.Imp.Adjustmt Factor	1.5	Levered (Undifferentiated)	10.02%										
		OTR (overall levered)	9.83%										
		Prime (levered)	10.68%										
Cash flow computations, Yr:	IRRs:	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
End Jun		<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Staff NOI			24377	25468	26429	27029	28394	30264	30869	31984	24275	28916	30295
Staff CI			452	610	284	1531	1770	1133	1464	543	17664	2150	752
Adjstd NOI			24377	25061	25590	25752	26620	27919	28022	28569	21336	25009	25782
Adjstd CI			678	915	426	2297	2655	1700	2196	815	26496	3225	1128
Unlevered Property Level:													
CF			23699	24146	25164	23456	23965	26220	25826	27755	-5160	21784	24654
Reversion												291708	
PBTCFs	8.29%	-280000	23699	24146	25164	23456	23965	26220	25826	27755	-5160	313492	
DS			14588	14588	14588	14588	14588	14588	14588	14588	14588	14588	
OLB												132864	
DebtCFs	7.00%	-170000	14588	14588	14588	14588	14588	14588	14588	14588	14588	147452	
AfterDS: Levrd(Undiff)...													
Operating			9111	9558	10576	8868	9377	11632	11238	13167	-19748	7196	
ECFs	10.02%	-110000	9111	9558	10576	8868	9377	11632	11238	13167	-19748	166040	
OTR Positions...													
Preferred	9.50%	-66000	6270	6270	6270	6270	6270	6270	6270	6270	6270	72270	
OTRprorata	10.68%	-22000	1421	1644	2153	1299	1553	2681	2484	3448	-13009	46885	
OTRTotal	9.83%	-88000	7691	7914	8423	7569	7823	8951	8754	9718	-6739	119155	
Prime Position:													
PrimeTotal	10.68%	-22000	1421	1644	2153	1299	1553	2681	2484	3448	-13009	46885	

Exhibit 2: Cash flow adjustments (Optimistic)

Assumptions (Geltner's):		Implied Returns:											
Price	280000	Going-inCap	8.71%										
Terminal Cap Rate	7.50%	IRRs:											
CFGroRate Adjustment	0.0150	Property (Unlevered)	13.14%										
Cap.Imp.Adjustmt Factor	1	Levered (Undifferentiated)	19.12%										
		OTR (overall levered)	16.30%										
		Prime (levered)	26.73%										
Cash flow computations, Yr:	IRRs:	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
End Jun		<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Staff NOI			24377	25468	26429	27029	28394	30264	30869	31984	24275	28916	30295
Staff CI			452	610	284	1531	1770	1133	1464	543	17664	2150	752
Adjstd NOI			24377	25850	27228	28264	30136	32603	33754	35497	27346	33062	35159
Adjstd CI			452	610	284	1531	1770	1133	1464	543	17664	2150	752
Unlevered Property Level:													
CF			23925	25240	26944	26733	28366	31470	32290	34954	9682	30912	34407
Reversion												464093	
PBTCFs	13.14%	-280000	23925	25240	26944	26733	28366	31470	32290	34954	9682	495006	
DS			14588	14588	14588	14588	14588	14588	14588	14588	14588	14588	14588
OLB												132864	
DebtCFs	7.00%	-170000	14588	14588	14588	14588	14588	14588	14588	14588	14588	147452	
AfterDS: Levrd(Undiff)...													
Operating			9337	10652	12356	12145	13778	16882	17702	20366	-4906	16324	
ECFs	19.12%	-110000	9337	10652	12356	12145	13778	16882	17702	20366	-4906	347554	
OTR Positions...													
Preferred	9.50%	-66000	6270	6270	6270	6270	6270	6270	6270	6270	6270	72270	
OTRprorata	26.73%	-22000	1534	2191	3043	2937	3754	5306	5716	7048	-5588	137642	
OTRTotal	16.30%	-88000	7804	8461	9313	9207	10024	11576	11986	13318	682	209912	
Prime Position:													
PrimeTotal	26.73%	-22000	1534	2191	3043	2937	3754	5306	5716	7048	-5588	137642	

Exhibit 2: Cash flow adjustments(Pesimistic)

Assumptions (Geltner's):		Implied Returns:											
Price	280000	Going-inCap	8.71%										
Terminal Cap Rate	10.00%	IRRs:											
CFGroRate Adjustment	-0.0450	Property (Unlevered)	3.60%										
Cap.Imp.Adjustmt Factor		2 Levered (Undifferentiated)	-4.38%										
		OTR (overall levered)	2.56%										
		Prime (levered)	#NUM!										
Cash flow computations, Yr:	IRRs:	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
End Jun		<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Staff NOI			24377	25468	26429	27029	28394	30264	30869	31984	24275	28916	30295
Staff CI			452	610	284	1531	1770	1133	1464	543	17664	2150	752
Adjstd NOI			24377	24322	24104	23542	23618	24040	23418	23172	16795	19106	19116
Adjstd CI			904	1220	568	3062	3540	2266	2928	1086	35328	4300	1504
Unlevered Property Level:													
CF			23473	23102	23536	20480	20078	21774	20490	22086	-18533	14806	17612
Reversion												189252	
PBTCFs	3.60%	-280000	23473	23102	23536	20480	20078	21774	20490	22086	-18533	204058	
DS			14588	14588	14588	14588	14588	14588	14588	14588	14588	14588	
OLB												132864	
DebtCFs	7.00%	-170000	14588	14588	14588	14588	14588	14588	14588	14588	14588	147452	
AfterDS: Levrd(Undiff)...													
Operating			8885	8514	8948	5892	5490	7186	5902	7498	-33121	218	
ECFs	-4.38%	-110000	8885	8514	8948	5892	5490	7186	5902	7498	-33121	56606	
OTR Positions...													
Preferred	9.50%	-66000	6270	6270	6270	6270	6270	6270	6270	6270	6270	72270	
OTRprorata	#NUM!	-22000	1308	1122	1339	-189	-390	458	-184	614	-19695	-7832	
OTRTotal	2.56%	-88000	7578	7392	7609	6081	5880	6728	6086	6884	-13425	64438	
Prime Position:													
PrimeTotal	#NUM!	-22000	1308	1122	1339	-189	-390	458	-184	614	-19695	-7832	

Summary of Sensitivity Analysis & Risk/Return Analysis

	Presentn	Realistic	Optimist	Pessimist	RANGE	RP*	RP/RANGE
Assumptions:							
NOI Gro	2.20%	0.56%	3.73%	-2.40%	6.13%		
CI/NOI	10.00%	15.00%	10.00%	20.00%	10.00%		
Term Cap	8.75%	8.75%	7.50%	10.00%	2.50%		
Expected Returns (Going-in IRR):							
Property	10.40%	8.29%	13.14%	3.60%	9.54%	1.54%	0.16
Levrd Eq (Undiff)	14.36%	10.02%	19.12%	-4.38%	23.50%	3.27%	0.14
Teachers	12.76%	9.83%	16.30%	-4.38%	20.68%	3.08%	0.15
Prime	19.24%	10.68%	26.73%	-100.00%	126.73%	3.93%	0.03
*Realistic Exptd Going-in IRR Minus 6.75% prevailing T-Bill Yield							