Shilling, Ch.3: Present value model analysis

- Cash return on investment
  - Measurement
  - Sales
- Efficient real estate markets
- Discounted value

Douglas Manor Apartments

	Year			
ITEM	1	2	3	4
Potential gross income (5% annual growth rate)	108,000	113,400	119,070	125,024
- vacancy and collection losses (4%)	-4,320	-4,536	-4,763	-5,001
Effective gross income	103,680	108,864	114,307	120,023
Operating expenses				
Fixed				
- Property taxes 20.17%	-20,908	-21,953	-23,051	-24,204
- Hazard insurance	-1,460	-1,533	-1,610	-1,690
- Licenses and permits	-250	-263	-276	-289
Variable				
- Gas, water, eletricity	-2,800	-2,940	-3,087	-3,241
- Supplies	-1,350	-1,418	-1,488	-1,563
- Advertising	-730	-767	-805	-845
- Payroll	-3,988	-4,187	-4,397	-4,617
- Management, 5% of gross income	-5,184	-5,443	-5,715	-6,001
- Miscellaneous services	-1,160	-1,218	-1,279	-1,343
- Property maintenance	-1,850	-1,943	-2,040	-2,142
Net Operating Income	64,000	67,200	70,560	74,088

Measuring cash return on investment

- Potential gross income=market rent, Ex. Monthly rent x 12 x # units = 525x12x8=50,400

SALES

ITEM	AMOUNT
Gross sales price	$ 777,924
Selling expenses, 7%	- 54,454
Net sales price	$ 723,470

EFFICIENT REAL ESTATE MARKETS?

- Self-fulfilling & rational expectations of property prices
- If all public and private information is reflected in the price, the real estate market is efficient
- Overreaction to news – bubbles

Present value

- Time value of money: $1 today is worth more than $1 tomorrow
- Discount rate= opportunity cost of capital
- Present value = 1/(1+r)

  Ex. 1/(1+0.2)=0.833
- Risk aversion

Present value of real estate

$$= \frac{NOI_1}{(1+r)} + \frac{NOI_2}{(1+r)^2} + \ldots + \frac{NOI_n+NSP_n}{(1+r)^n}$$

$$= \frac{64{,}000}{(1.2)} + \frac{67{,}200}{(1.2)^2} + \frac{70{,}560}{(1.2)^3} + \frac{74{,}080+723{,}470}{(1+r)^4}$$

$$= 525,457$$

NOI=Net Operating Income, NSP=Net Sales Price