ANSWERS TO STUDY QUESTIONS

Chapter 18

18.1. The difference between the contract (or stated) yield and the realistic expected return (ex ante yield) quantifies the impact of default risk in the ex ante return. The contract yield is what the lender will receive provided the mortgage pays off according to contract. The expected return on the other hand reflects some degree of probability that it will not fully pay off according to the contract. The expected return is net of expected credit losses from default. This difference is important when evaluating mortgages from a mortgage investor's point of view.

18.3. This relationship is detailed in the second paragraph (along with the table there) of section 18.1.2.

18.5. The two major foci of the lender's attention in commercial mortgage underwriting are the borrower and the proposed collateral property. The more important of these two foci is normally the property. This is because, first, since most commercial mortgages are nonrecourse, the lender can't go after the borrower to recover any losses. Second, if the income-producing property is sufficiently lucrative in comparison with the loan requirements, then the loan will probably turn out all right even if the borrower is a bit weak.

18.7. See Exhibit 18-6 for a typical relationship between the initial LTV ratio and the ex ante lifetime default probability on a commercial mortgage. The effect of volatility on this relationship is that the greater the volatility in the collateral property value, the lower will be the initial LTV ratio corresponding to a given ex ante default probability.

18.9. If the EBTCF is projected to be negative for any year during the life of the loan, this raises an obvious underwriting red flag, as the borrower faces a potential negative cash flow in any such year. Since capital improvement expenditures are not included in the DCR and BER, the latter two won't register this problem.

18.11. a. 1%, 5%, 5%
b. 4.95%
c. 10.65%

18.13. Assuming monthly payments on the mortgage:

$400,000/1.25 = $320,000; $320,000/12 = $26,667/month = Maximum PMT7 + 1.75 = 8.75% CEY = $(1.04375)^2 - 1 = 8.9414\%$ EAY → $[(1.089414)^{(1/12)} - 1] \times 12 = 8.59\%$ MEY 360 → N; 8.59 → I/YR; 26667 → PMT; 0 → FV; PV = $3,439,568

18.15. LTV Criteria: max L = [1,000,0000/0.0975] × 0.70 = 10,256,410 × 0.70 = 7,179,487

DCR Criteria: MC = 9.1244% [PV = 1, FV = 0, I/Y = 6.75, N = 240: CPT PMT then times by 12]

max DS = NOI/DCR = 1,000,000/1.25 = 800,000

max L = DS/MC = 800,000/0.091244 = **8,767,700**

⇒ max loan is $7.179 million. Even though property could handle more based on DCR the 87.677 loan amount would imply an LTV of 85%, which violates the lender's LTV criteria.

Appendix 18

1. The pros of the participating mortgage from the borrower's perspective is that the fixed or base interest rate is lower than it otherwise would be for a traditional loan, and therefore the debt service coverage ratio is lower. This may enable the borrower to take out a larger loan, or in any case it reduces the borrower's risk and chance of default for a given loan amount. From the lender's perspective the pros of the participating mortgage are that it provides the lender with some upside potential profit if the property does well or producing earnings above the threshold where the equity kicker kicks in. In both cases (for the borrower and lender) these advantages tend to be more important in an inflationary environment where the nominal interest rate on traditional fixed interest rate loans must be higher in order to include a necessary inflation premium. From the borrower's perspective the participating mortgage holds down the fixed interest component. From the lender's perspective the return on the participating mortgage will provide less downside inflation risk in the real return net of inflation. On the "con" side, from the borrower's perspective some component of the upside must be shared with the lender, while on the lender's perspective some of the risk of lackluster property performance is shared by the lender as the lender is exposed to a lower interest rate if the kicker threshold is not achieved.