Chapter 18:
(Section 18.2 only)

Commercial Mortgage Underwriting

"Underwriting"

= Process lenders go through to decide to issue a commercial mortgage, and the terms of the loan:

Loan Origination ("primary" market).

- **Often a *negotiation* type process (esp. for large loans): Commercial Mortgage business is a "custom" shop.**
- ***Standard criteria* may sometimes be "bent" (esp. for large borrowers, or when the market is "hot"), but provide the basic guidelines.**

Basic Purpose of Underwriting:

➔ **To make *default* a *rare event*.**

But no one can operate "outside the market"…

Supply & Demand:

- **Most borrowers cannot (or do not want to) conform to underwriting standards so tight as to eliminate default risk (even if that would get them T-Bond interest rates).**

- **Lenders must conform to the market in order to "play the game": Modify loan terms so that E[r] is sufficient to compensate for default risk.**

Two Foci of Underwriting:
Borrower & Property

1) Borrower:

On the *downside:*

i) Can "bleed" healthy property as "cash cow".
ii) Can use Ch.11 if they get in trouble ("cramdown").
iii) Financial health of borrower is important.
iv) Check "parent" company.

On the *upside*:

i) Potential "repeat customer".
ii) Consider size, track record, future potential.

Two Foci of Underwriting:
Borrower & Property

2) Property:

Generally more important than borrower:

i) Main source of CF to service loan.

ii) Comm.Mtgs effectively "non-recourse".

iii) Careful lender w well-crafted loan: strong property counts more than strong borrower.

Standard Property-level Underwriting Criteria:

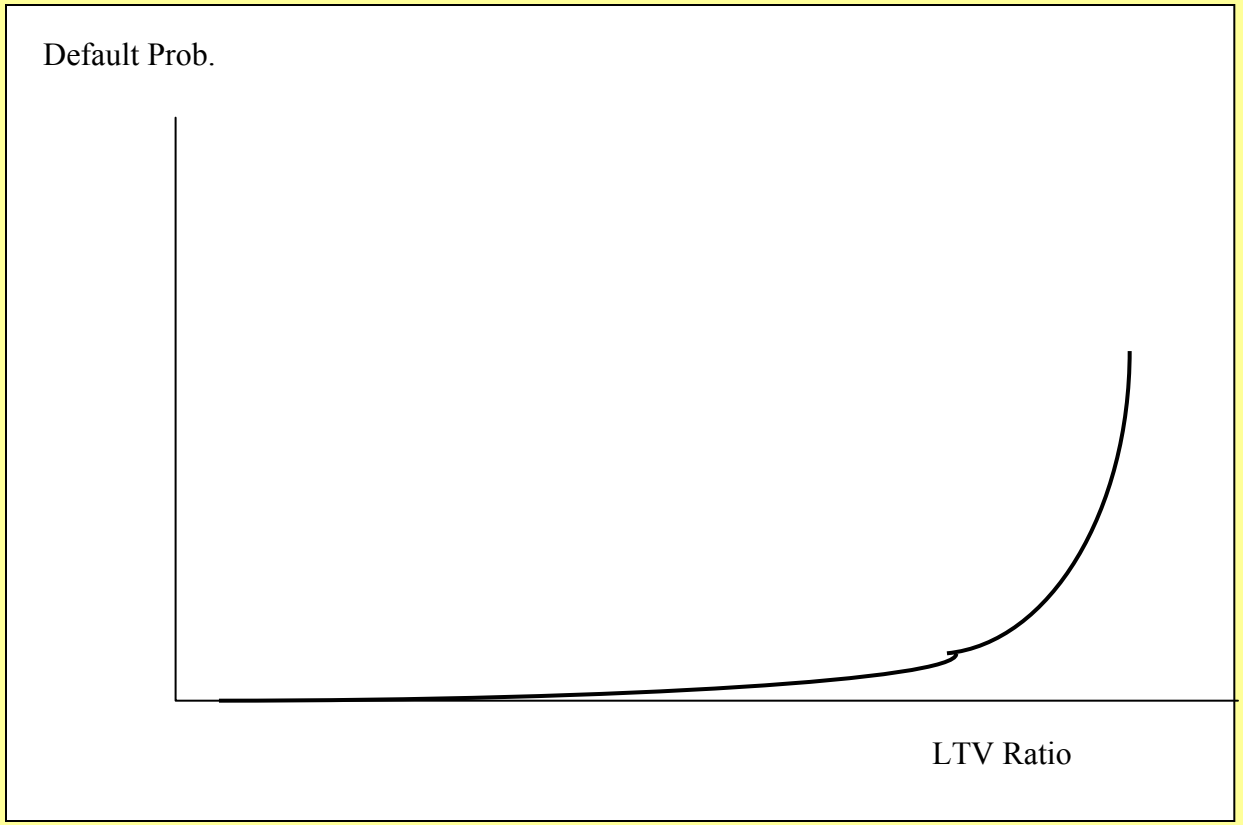
i) Asset value criteria...

ii) Property income criteria...

Asset Value Criterion:
Initial Loan-to-Value Ratio (LTV)

$$LTV = L/V$$

Exh. 18-5: Typical relationship between initial LTV ratio and the ex ante lifetime default probability on a commercial property mortgage:



Relation between:

- **LTV,**
- **Property Risk (volatility),**
- **Loan Default Probability.**

A simplified example…

(Text box p. 447)

Suppose…

- **Initial Prop. Val = $100, E[g] = 2%/yr.**
- **75% LTV (No amort ➔ OLB = $75 constant).**
- **Average loan default occurs in year 7 of loan life.**
- ***Individ.*** **Prop. Ann. Volatility (Std.Dev[g]) = 15%.**
- **Prop. Val follows *random walk* (effic. mkt.).**
- ➔ $T\ yr\ Volatility = \sqrt{T}\left(Ann.Volatility\right)$

Relation between:

- **LTV,**
- **Property Volatility, &**
- **Loan Default Probability.**

A simplified example…

Thus, After 7 years:

- **E[Val] = $1.02^7(100) = 115$**
- **Std.Dev[Val] =**

$$\sqrt{7}\,(15\%)(100)$$
$$= 2.6*15\%(100)$$
$$= \pm 40\%(100) = \pm 40.$$

- **1 Std.Dev below E[Val] = $115 - $40 = $75.**
- **If Prob[Val] ~ *Normal*, ➔ 1/6 chance Val < OLB, ➔ Loan *"under water"* (large chance of default in that case).**

The point is . . .

Greater Property Volatility (Risk)

- **Lower LTV corresponds to a given lifetime default probability.**
- **Lower Max LTV Limit in underwriting criteria.**

Typical LTV limit in commercial mortgages on good quality stabilized properties is 75%.

- **Based on lower of appraisal or purchase price.**
- **Based on lower of DCF or Direct Cap.**
- **Sometimes "bent", or fudged in appraisal, due to market pressure.**

Property Income Criteria…

1) <u>Debt Service Coverage Ratio (DCR):</u>

DCR = NOI / DS

Typical: DCR >= 120%

2) Break-even Ratio (BER):

BER = (DS+OE) / PGI

➔ **Occupancy ratio required for EBTCF > 0 (exclu CI)**

➔ **Lender usually requires BER < (100% - Mkt Vac)**

Typical: BER <= 85%, or less than mkt avg occupance minus some buffer (typically 5%).

3) Equity Before-Tax Cash Flow (EBTCF):

EBTCF = NOI – DS – CI

Similar to DCR, only includes effect of CI.

Projection of EBTCF < 0 any year of loan

➔ "Red Flag".

4) Multi-year Pro-Forma Projection:

In principle, lenders project income ratios for all years of loan life.

Variables and loan terms to negotiate:

- Loan Amount
- Loan Term (maturity)
- Contract Interest Rate
- Amortization rate
- Up-front fees and points
- Prepayment option and back-end penalties
- Recourse vs. Non-recourse debt
- Collateral (e.g., cross-collateralization)
- Lender participation in property equity
- Cramdown insurance
- Etc. . . .

Underwriting Example

The Problem:

- Buyer (borrower) & seller claim property worth $12,222,000;
- Buyer wants to borrow 75% ($9.167 Million, or $91.67/SF) from you (mortgage lender), for purchase-money 1st mortgage;
- Wants non-recourse, 10-yr interest-only loan, monthly pmts;
- Willing to accept “lock-out”.
- ***Should you do the deal?***

Underwriting Example (cont.)

Current Capital Market Information:

- In Bond Mkt: 10-yr US Govt Bonds yielding 6.00%.
- In Mortg Mkt: 10-yr balloon lock-out commercial mortgages require risk premium in contract total yield typically 200bp (CEY) spread over TBonds for good properties, non-recourse.
- ➔ Loan YTM = 6% + 2% = 8% CEY,
- ➔ *What EAY & MAY?*
- ➔ EAY = 8.16%, ➔ **7.87% MEY required YTM**.

Underwriting Example (cont.)

Underwriting Criteria (from capital provider):

1. **Max Initial LTV = 75%.**
2. **Max projected terminal LTV = 65%.**
3. **In computing LTV, normally: (i) Apply direct capitalization with going-in cap rate ≥ 9%, terminal cap rate ≥ 10%; (ii) Apply multi-yr DCF with Disc. Rate ≥ 10%; (iii) Use lower of (i) & (ii) to compute Initial LTV.**
4. **Min DCR = 120%.**
5. **Max BER = 85%, or 5% less than mkt vac (whichever is less).**
6. **Consider need for CI, and avoid EBTCF < 0.**

Loan must conform to these criteria, given capital market (yield requirement) and property markets (space & asset mkts ➔ value & income criteria).

Underwriting Example (cont.)

Property & R.E. Market Information (from broker):

- **100,000SF, fully occupied, single-tenant, off.bldg.**
- **10-yr lease signed 3 yrs ago.**
- **$11/SF net (suppose EOY ann. pmts).**
- **"Step-ups" of $0.50 in lease yr.5 & 8 (yrs 2 & 5).**
- **Current mkt rents on new 10-yr leases are $12/SF net.**
- **Expect mkt rents to grow @ 3%/yr. (same age).**

Solution, General Procedure . . .

Step 1: Construct 10-yr "Proforma":
1) Forecast Property Cash Flows
2) Calculate Loan Debt Service Cash Flows for Requested Loan

Step 2: Examine DCR, BER, EBTCF, @ Requested Loan:
Is there Compliance with Income Underwriting Criteria?...

Step 3: Estimate Property Value (Use Direct Capitalization &/or DCF):
Is there Compliance with Value Underwriting Criterion?...

Step 4: If Compliance Fails in either Step 2 or 3:
How can loan be modified to meet underwriting criteria?...
How much (and why) is lender willing to "bend" underwriting criteria to make loan?...
--> What "yield enhancements" (e.g., "origination fee") would temp lender?
--> What security enhancements (e.g., "recourse", "multi-collateral", “cramdown” insur) would assuage lender?

Underwriting Example (cont.)

Broker's pro-forma submitted with loan request. . .

Assumes: *75% renewal probability*
3 mo. Vacancy if non-renewal
No provision for CI (inclu leasing expenses).
Yr.10 cap rate = 9%.

So, you need to deal with the usual . . .

You make following modified assumptions:

- ***1% Market rental growth for <u>existing</u> bldg (3%-2%depr).***
- ***Yr.8 Leasing expenses: $2/SF if renew, $5/SF not renew.***
- ***Yr.8 TI: $10/SF if renew, $20/SF if not renew.***
- ***Yr.10 cap rate = 10%.***

Underwriting Example (cont.)

Your adjusted pro-forma (based on research):

Assumes: *1% Market rental growth for existing bldg (3%-2%depr).*
Yr.8 Leasing expenses: $2/SF if renew, $5/SF not renew.
Yr.8 TI: $10/SF if renew, $20/SF if not renew.
Yr.10 cap rate = 10%.

Year:	1	2	3	4	5	6	7	8	9	10	Year 11
Mkt Rent (net) /SF	$12.12	$12.24	$12.36	$12.49	$12.61	$12.74	$12.87	$12.99	$13.12	$13.26	$13.39
Property Rent(net)	$11.00	$11.50	$11.50	$11.50	$12.00	$12.00	$12.00	$12.99	$12.99	$12.99	$12.99
Vacancy Allow	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.81	$0.00	$0.00	$0.00
NOI/SF	$11.00	$11.50	$11.50	$11.50	$12.00	$12.00	$12.00	$12.18	$12.99	$12.99	$12.99
NOI	$1,100,000	$1,150,000	$1,150,000	$1,150,000	$1,200,000	$1,200,000	$1,200,000	$1,218,214	$1,299,428	$1,299,428	$1,299,428
Lease Comm	$0	$0	$0	$0	$0	$0	$0	-$275,000	$0	$0	
Ten.Imprv	$0	$0	$0	$0	$0	$0	$0	-$1,250,000	$0	$0	
Reversion@10%Cap										$12,994,280	
Less OLB										$9,167,000	
PBTCF	$1,100,000	$1,150,000	$1,150,000	$1,150,000	$1,200,000	$1,200,000	$1,200,000	-$306,786	$1,299,428	$14,293,709	
Debt Svc	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$9,888,443	
EBTCF	$378,557	$428,557	$428,557	$428,557	$478,557	$478,557	$478,557	($1,028,229)	$577,985	$4,405,266	
DCR	152%	159%	159%	159%	166%	166%	166%	169%	180%	180%	
BER @ Mkt	60%	59%	58%	58%	57%	57%	56%	56%	55%	54%	

Note income underwriting criteria for $9,167,000, 7.87% loan.
DCR & BER look good.
How were these computed?...

Underwriting Example (cont.)

Year:	1	2	3	4	5	6	7	8	9	10	Year 11
Mkt Rent (net) /SF	$12.12	$12.24	$12.36	$12.49	$12.61	$12.74	$12.87	$12.99	$13.12	$13.26	$13.39
Property Rent(net)	$11.00	$11.50	$11.50	$11.50	$12.00	$12.00	$12.00	$12.99	$12.99	$12.99	$12.99
Vacancy Allow	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.81	$0.00	$0.00	$0.00
NOI/SF	$11.00	$11.50	$11.50	$11.50	$12.00	$12.00	$12.00	$12.18	$12.99	$12.99	$12.99
NOI	$1,100,000	$1,150,000	$1,150,000	$1,150,000	$1,200,000	$1,200,000	$1,200,000	$1,218,214	$1,299,428	$1,299,428	$1,299,428
Lease Comm	$0	$0	$0	$0	$0	$0	$0	-$275,000	$0	$0	
Ten.Imprv	$0	$0	$0	$0	$0	$0	$0	-$1,250,000	$0	$0	
Reversion@10%Cap										$12,994,280	
Less OLB										$9,167,000	
PBTCF	$1,100,000	$1,150,000	$1,150,000	$1,150,000	$1,200,000	$1,200,000	$1,200,000	-$306,786	$1,299,428	$14,293,709	
Debt Svc	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$721,443	-$9,888,443	
EBTCF	$378,557	$428,557	$428,557	$428,557	$478,557	$478,557	$478,557	($1,028,229)	$577,985	$4,405,266	
DCR	152%	159%	159%	159%	166%	166%	166%	169%	180%	180%	
BER @ Mkt	60%	59%	58%	58%	57%	57%	56%	56%	55%	54%	

DCR (Yr.1) = NOI / DS = $1,100,000 / $721,443 = 1.52

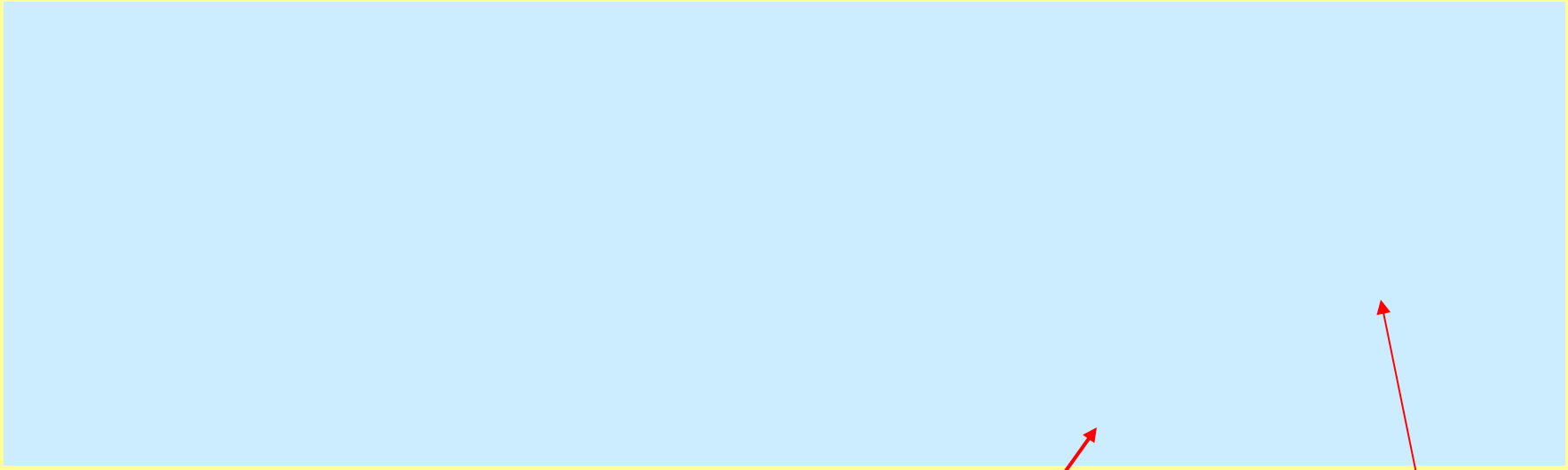
BER (Yr.1) = (OE + DS) / PGI = ($0 + $7.214) / $12.12 = 0.59

(Note use of current mkt rent in BER: Consistent with intent of that ratio.)

DS from: $9,167,000 X 7.87% = $721,443, in Interest-Only Loan.

Although standard income ratios look good, this loan does have some problems.

One problem is in the income criteria. Can you spot it in the proforma?...



Negative EBTCF in Yr. 8

Another problem is in the initial LTV:

- **Based on direct capitalization, loan passes OK:**
  - **$1,100,000 / 9% = $12.22 M, ➔ LTV = 9.167 / 12.22 = 75%.**
- **But the DCF @ 10% gives PV(PBTCF) = $11,557,000.**
  - **➔ 9.167 / 11.557 = 79%.**

A similar problem is in the Terminal LTV:

- **$9,167,000 / $12,994,280 = 67%, which is > the 65% limit.**

Underwriting Example (cont.)

Problems in the loan proposal:

Income: **Projected EBTCF (Yr.8) = -$1,028,229 < 0.**
Value: **Initial LTV Ratio = 79% > 75% (in DCF @ 10%, OK in dir.cap)**
Terminal LTV Ratio = 71% > 65% (@ 10% cap rate).

But EBTCF < 0 is:

- **Due mostly to cap impr (financing possible?).**
- **Far in future (when inflation will have improved default risk).**
- **After much previous positive cash flow.**
- **Not untypical in single-tenant bldg.**

And Value criteria are missed only slightly.

So loan is "close" to passing criteria.

How good a future potential "customer" is this borrower?

How much pressure is there in the loan market?

Try to negotiate a similar loan? . . .

Underwriting Example (cont.)

Consider a $8,700,000 loan with 40-yr Amort. 10-yr balloon (instead of $9,167,000, Interest-Only):

	$9,167,000 Int-Only	$8,700,000 40-yr Amort
PMT	$721,443	$715,740
Initial OLB	$9,167,000	$8,700,000
Initial LTV Ratio	79%	75%
Terminal OLB	$9,167,000	$8,230,047
Terminal LTV Ratio	71%	63%