

Fin5413 Chapter 20

THE SECONDARY MARKET: CMO'S AND DERIVATIVE SECURITIES

McGraw-Hill Irwin

Chapter Objectives

- Differentiate between MPTs and MPTBs
- Collateralized Mortgage Obligation (CMO)
 - designed to mitigate some prepayment risk
- CMO vs. REMIC

Mortgage Pay-Through Bonds

- Hybrid securities
- Issued against mortgage pools
- Cash flows are passed to security holders
- A bond
- A debt obligation of the issuer, who retains ownership - Unlike a MPT which represents a undivided equity ownership
- Over collateralized like MBBs

Real Estate Mortgage Investment Conduits (REMICS)

- The secondary mortgage industry wanted a way to mitigate the effect of the uncertain timing of mortgage payoffs of a pass through
- The solution was the creation of the CMO
- However, there was a potential tax problem
- A REMIC is a tax status for a pool of mortgages
- REMICs are only taxed at the CMO level and not at the entity (pool) level
- Must follow rules (as do mutual funds) to get this special tax status

Real Estate Mortgage Investment Conduits (REMICS)

- Limited life and self liquidating with minimal management
- No taxation at the entity level
- REMIC assets consist only of:
 - Qualified mortgages
 - Foreclosure property only
 - Short term, passive, or interest bearing assets used to reinvest funds not yet paid to out to investors
 - Qualified reserve fund (more important if assets are not backed by GNMA, FNMA, or FHMLC)

Idea behind CMO's

- A pool of mortgages can be seen as a set of cash flows, that can be spit into pieces and sold as pieces rather than as an undivided fraction of the pool
- Like the Seinfeld episode where the muffin tops were being sold separately from the less desirable muffin bottom

Collateralized Mortgage Obligation (CMOs)

- Mitigates some prepayment risk
- CMOs are debt instruments
- Pool of mortgages comprise the collateral
- Issuer retains ownership of the mortgages and issue various classes of bonds against the pool

Collateralized Mortgage Obligation (CMOs) Continued

- All payments flow through to the bond holders
- Security holder assumes prepayment risk
- Multiple classes of security (maturities) are issued
- Payment prioritization established by using *Tranches* of different maturity dates
 - Tranche is a French word meaning slice

CMO - example

- Mortgage Pool Consists of 102,000,000 of mortgages
- Tranche A is 20,000,000 of (short term) bonds which gets interest payments plus all of the principal payments until this class is paid off
- Tranche B is 30,000,000 of medium term bonds which receive interest only until Tranche A is fully paid off, and then receives all principal payments

CMO - example

- Tranche Z is 50,000,000 of zero coupon like bonds which get no payment (though they accrue interest) until the first 2 Tranches are paid off, at which time they get all the money paid into the pool until they are paid off
- If the average interest rate on the mortgages was 6%, Tranche A might earn 4.75%, Tranche B 5.25% and Tranche Z 5.75%
- The residual cash goes to the Equity, which began with \$2,000,000, and represents the over collateralization of the pool
- Recall that the servicer and guarantor also get a cut of the mortgage interest

Weighted Average Coupon (WAC)

- If the average interest rate on the mortgages was 6%, Tranche A might earn 4.75%, Tranche B 5.25% and Tranche Z 5.75%
- $WAC = 0.2 \cdot 4.75\% + 0.3 \cdot 5.25\% + 0.5 \cdot 5.75\% = 5.40\%$
- The rest of the coupon payment from the underlying mortgages would go to pay the servicing and guarantee fees and to pay the equity portion of the pool

CMO's

- Prepayment risk is now somewhat mitigated as Tranche A absorbs the earliest repayment, followed by Tranche B. Tranche Z keeps its money invested in the pool longer (Sequential Tranches)
- When putting together CMO's the sponsor attempts to match investors with the expected cash flow of the Tranche

CMO's

- As the CMO market grew, so did the number of Tranches
- It became increasingly common to sell investors the type of Tranche the investor desired
- When all the desirable Tranches were sold off, what was left were dubbed "kitchen sink" bonds because the originator had sold off everything but the kitchen sink

CMO's

- To reduce prepayment risk further, some Tranches were set up as PAC's (planned amortization classes, and TAC's, targeted amortization classes) for which the structure tried to keep the cash timing as close as possible to projections
- To take up the slack, companions were also issued which took the prepayments if they deviated from the expected pool prepayment

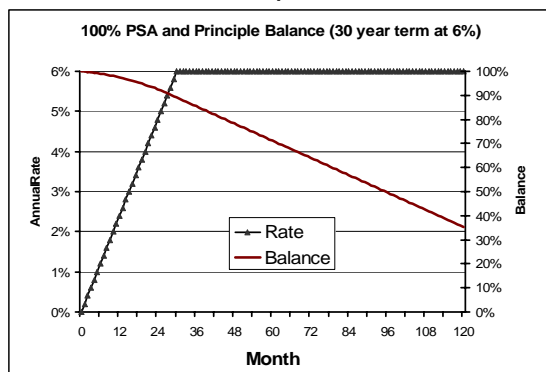
CMO's

- Another way to slice up the mortgage cash flows is to separate the principal and interest part of the cash flows
- IO is an interest only strip
- PO is a principal only strip

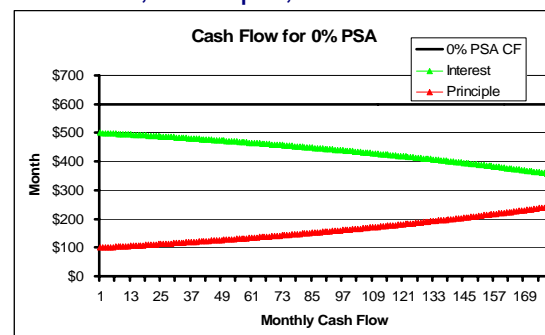
IO's and PO's

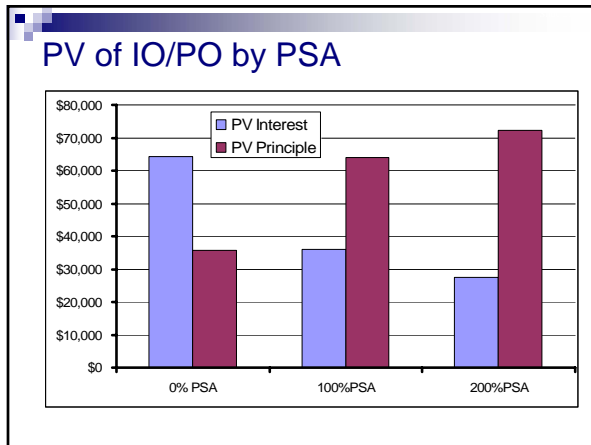
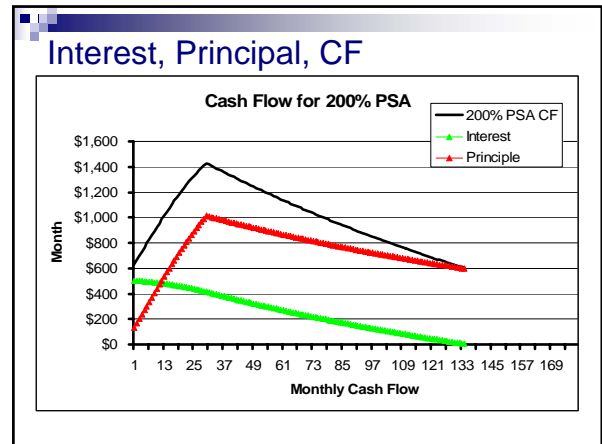
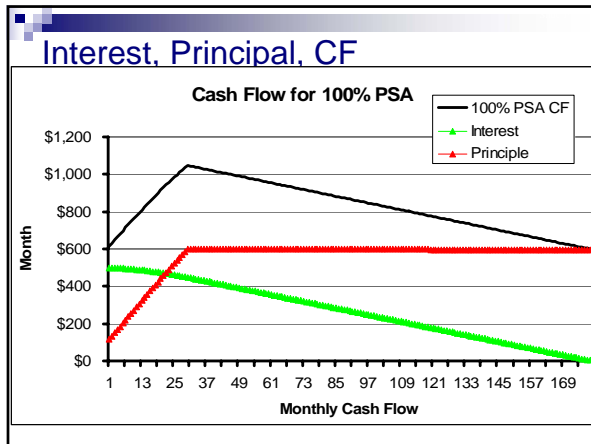
- An investor who buys a PO know for sure the amount she will receive in cash payments (the note amount). This investor does not know the timing of these cash flows
- An investor that buys an IO knows neither the amount nor the timing of the cash flows (it depends on the prepayment). IO's are thus very risky as if interest rates decline, refinancing will rise, cutting off the future interest payments.
- High prepayment is bad for IO holders and good for PO

The PSA Assumption



Interest, Principal, CF





- ### Floating Tranches
- Some Tranches have variable interest rates
 - May be from ARM mortgages
 - Fixed rate mortgages may also be used as a pool for creating floater
 - Inverse floaters are used to balance off floaters if fixed rates mortgages back up the pool
 - If interest rates increase, the payments to floaters increases, and the payments to inverse floaters decrease

- ### Derivative Security
- Derives its value from another security index, or financial claim
 - MPTs and CMOs are based on pools of mortgages
 - Derivatives may be purchased to protect the yield on another portfolio of mortgages or bonds

Investment Characteristics of Mortgage Related Securities

	MBB	MPT	MPTB	CMO
Type of security interest acquired	Debt	Equity	Debt	Debt
# of security classes	One	One	One	Multiple
Pass-through of principal	None	Direct	Direct	Prioritized
Party bearing prepayment risk	Issuer	Investor	Investor	Investor
Overcollateralization	No	Yes	No	Yes

Investment Characteristics of Mortgage Related Securities Continued				
	MBB	MPT	MPTB	CMO
Overcollateral marked to market	Yes	NA	No	No
Credit enhancements used?	Yes	No	Yes	No
Maturity period known?	Yes	No	No	No
Call provisions	Possibly	Cleanup	Possibly	Calamity and nuisance
Off- balance sheet financing possible?	No	Yes	No	yes

CMO data, WSJ, April 10, 2008				
		Price (Pts-32ds)	PSA (Prepay Spread)	Yield to Maturity*
FMAC GOLD	5.50%	101-03	273	5.28
FMAC GOLD	6.00%	102-24	691	4.93
FMAC GOLD	6.50%	103-28	642	4.81
FNMA	5.50%	101-02	273	5.25
FNMA	6.00%	102-20	664	4.95
FNMA	6.50%	103-25	707	4.64
GNMA **	5.50%	102-02	259	5.07
GNMA **	6.00%	103-09	555	4.78
GNMA **	6.50%	103-31	831	4.08

CMO data, WSJ, April 10, 2008		
Spreads in bp from Treasury with corresponding maturity		
Maturity	Spread	Spread
	SEQUENTIALS	PACs
2-year	185	160
5-year	183	156
7-year	170	156
10-year	168	156
20-year	132	120

- ### Commercial Mortgage-Backed Securities CMBS
- Take the form of MBB, MPT, or CMO
 - Default risk is greater
 - Secured by income properties
 - Non-recourse loans must look to security to satisfy loan
 - Shorter maturities
 - Senior and subordinated Tranches
 - In other words, in the case of defaults some Tranches absorb more of the defaults than others

- ### Commercial Mortgage-Backed Securities CMBSs Continued
- Prepayment risk mitigated by "lockouts" or other forms of prepayment penalties
 - Extension risk

CMBS General Bond Risk Conditions				
Rating	Subordination	DSCR	LTV	Price
AAA	30%	2.00	52.50%	102
AA	24%	1.84	57.00%	101
A	18%	1.71	61.50%	100
BBB	11%	1.57%	66.75%	98
BB	6%	1.49	70.50%	75
B	3%	1.44	72.75%	65
NR	0%	1.40	75.00%	35

CMBS- Enhancements

- Third party guarantees
- Surety bonds, LC's
- Advance payment guarantees
- Repurchase agreements
- Lease assignments
- Overcollateralization
- Cross default provisions

Different Risk and Return for Different Investors

