DEBT SECURITIES, SEMESTER 1, 2012 – TUTORIAL 10

CHAPTER 10: MORTGAGE-BACKED SECTOR OF THE BOND MARKET

Problem 2)

a. Suppose that the servicing fee for a mortgage loan is 0.5%. Complete the following schedule for the mortgage loan in the previous problem (Problem 1 involved calculating the mortgage schedule for a 30-year mortgage loan where the amount borrowed is $150,000. The mortgage rate is 7.25% for the loan and the monthly mortgage payment is $1,023.26). The column labelled "Servicing Fee" is the dollar amount of the servicing fee for the month. The column labelled "Net Interest" is the monthly interest after the servicing fee for the month.

Month	Beginning mortgage	Mortgage payment	Servicing fee	Net interest	Sch. Prin repayment	End of month balance
1						
2						
3						
4						
5						
6						

b. Determine for the first six months the cash flow for an investor who purchases this mortgage loan after the servicing fee is paid.

Problem 3)

Explain why you agree or disagree with the following statement: "Since mortgage passthrough securities issued by Ginnie Mae are guaranteed by the full faith and credit of the U.S. government, there is no uncertainty about the cash flow for the security."

Problem 4)

Consider the following mortgage pool:

Loan	Outstanding mortgage balance	Mortgage rate	Months remaining
1	$215,000	6.75%	200
2	$185,000	7.75%	185
3	$125,000	7.25%	192
4	$100,000	7.00%	210
5	$200,000	6.50%	180
Total	$825,000		

a. What is the weighted average coupon rate for this mortgage pool?
b. What is the weighted average maturity for this mortgage pool?

Problem 5)

Mr. Jamison is looking at the historical prepayment for a passthrough security. He finds the following:

mortgage balance in month 42	=	$260,000,000
scheduled principal payment in month 42	=	$1,000,000
prepayment in month 42	=	$2,450,000

a. What is the single monthly mortality rate (SMM) for month 42?
b. How should Mr. Jamison interpret the SMM computed?
c. What is the conditional prepayment rate (CPR) for month 42?
d. How should Mr. Jamison interpret the CPR computed?

Problem 8)

Suppose that in month 140 the mortgage balance for a mortgage pool underlying a passthrough security is $537 million and that the scheduled principal repayment for month 140 is $440,000. Assuming 175 PSA, what is the amount of the prepayment for month 140?

Problem 12)

What type of prepayment risk is an investor interested in a short-term security concerned with when purchasing a mortgage-backed security?

Problem 17)

How does a CMO alter the cash flow from mortgages so as to distribute the prepayment risk across various tranches in a deal?