WISCONSIN SCHOOL OF BUSINESS
UNIVERSITY OF WISCONSIN–MADISON
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RE 410: Real Estate Finance

Spring 2017

Homework 4 – Additional Mortgage Topics

Due Date: Feb. 14th, 2017

Problem 1

A borrower can get an 80% LTV fully amortizing CPM for 25 years at 8%. Alternatively, he could obtain a 90% LTV loan at 9% with the same loan term. The borrower projects to own the property for the entire term of the loan.

a. What is the incremental cost of borrowing the additional 10% of the property value? (Any property value works!)
b. How would your answer change if 2 discount points were charged on the 90% loan?
c. Would your answer to (b) change if the borrower plans to own the property only 5 years?

Problem 2

You got 5 years ago a fully amortizing $100,000 mortgage at 11% for 30 years. Mortgage rates have dropped since and you can now get a 25-year mortgage for 10%. The old mortgage has no prepayment penalty, but 2 discount points will be charged on the new mortgage. All payments are monthly.

a. Assuming that you have no alternative investment, should you refinance if you plan to own the property for the remaining loan term?
b. Would you answer change if you had to also pay $2,000 origination fees on the new mortgage?
c. Would your answer to (b) change if you planned to own the property for 5 years?

Problem 3

A mortgage investor is interested in paying a CPM mortgage from a local mortgage originator. The mortgage was originated 5 years ago for an original amount of $210,000 with a fixed annual interest rate of 10% for 30 years with monthly payments.

a. How much should the investor pay if the required rate of return is 11% and the mortgage is not expected to prepay?
b. What is the market value of the mortgage now assuming the same required rate of return if the mortgage is expected to be repaid 5 years from today?