

Fin 4713
 CHAPTER 6a
 – Additional Material

MORTGAGE FINANCIAL ANALYSIS

Objectives

- Calculate the incremental cost of borrowing
- Evaluate the effect of prepayment penalties, origination fees and other charges
- Calculate the market value of an outstanding mortgage loan
- Below market financing and effect on sales price

Ex 6a.1. Incremental Borrowing Cost

You are wondering how large of a down payment to make on the house you are purchasing. Two (25-yr) loans are available, Alt I for an 80% LTV has a rate of 12% and Alt II for a 90% LTV has a 13% rate. What is the incremental cost of borrowing the incremental 10%?

	Loan Amt	Payment
ALT.II @ 13%	\$ 90,000	\$ 1015.05
ALT. I @ 12%	80,000	842.58
Difference	\$ 10,000	\$ 172.47

$I/YR(PMT=172.47, PV=-10,000, N=300) = 20.57\%$

Ex 6a.2. Incremental Borrowing Cost

What if there are 2 points charged on the ALT II loan? The payment does not change, but less cash is disbursed making the incremental cost higher. What is the incremental cost of borrowing the incremental amount?

	Loan Proceeds	Payment
ALT.II @ 13%	\$ 88,200	\$ 1015.05
ALT. I @ 12%	80,000	842.58
Difference	\$ 8,200	\$ 172.47

$I/YR(PMT=172.47, PV=-8,200, N=300) = 25.19\%$

Ex 6a.3. Early Repayment (data from Ex 6a.1.)

	Loan Amount	Monthly Payment	Loan Balance- after five years
ALT.II @ 13%	\$ 90,000	\$ 1015.05	\$ 86,639.88
ALT.I @ 12%	80,000	842.58	76,522.56
Difference	\$ 10,000	\$ 172.47	\$ 10,117.32

Ex 6a.3: Calculator Solution

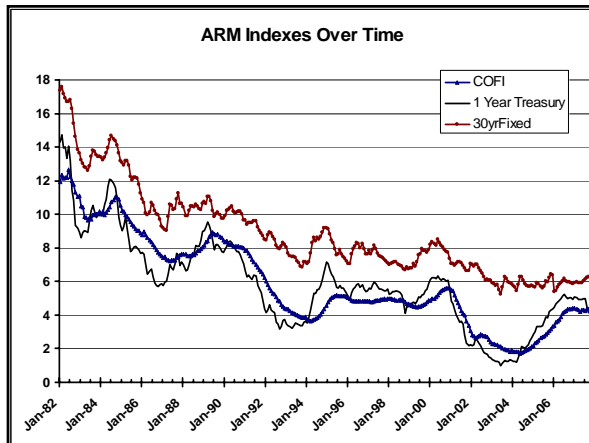
- $I/YR(PV=-10000, N=60, PMT=172.47, FV=10,117.32)$
- $I/YR = 20.83\%$

Refinancing an Existing Loan

- To withdraw equity from the house – possibly to pay off other debt
 - Such loans are seen as riskier than other refinances as it shows the borrower has other financial payments
- To improve the house
 - Add rooms, a swimming pool, redo kitchen, etc.
- To shorten the amortization period
- To lower the payments
 - May refinance to an option ARM or teased ARM

Refinancing an Existing Loan (cont.)

- In response to lower interest rates
 - The optimal time to refinance a mortgage in response to lower interest rates is a very complex financial decision (Why?)
 - Balance may increase if you borrow money for the fees
 - Term may lengthen (refinance to same term as your original term)
 - If there are no fees, refinance whenever interest rates fall
- Yield maintenance agreements and shorter terms creates fewer refinance opportunities for commercial mortgages



Example 6a.4. Refinancing a loan in response to lower interest rate

- You currently have an 8%, 30-year loan you took out 2 years ago. You can refinance this at 6.5% with 3 points in fees to a new 28 year loan. You expect to keep this new loan for 2 years. Your original note was for \$80,000 and you will take the closing costs from your savings account that is currently paying 5%. Is this a good choice?

Example 6a.5. Refinancing a loan in response to lower interest rate

- You currently have an 8%, 30-year loan you took out 2 years ago. You can refinance this at 6.5% with 3 points in fees to a new 30-year loan. You expect to keep this new loan for 2 years. Your original note was for \$80,000 and you will add the closing costs to your existing loan balance. Is this a good choice?

Predatory Lending/Equity stripping

- Part of root the subprime crisis of today is from “equity stripping”
 - Equity stripping occurs when a loan is refinanced to another loan (typically with lower payments) but there are a lot of fees with the new loan that are borrower so that the loan balance is significantly increased (equity stripping). The payment may be lower due to option ARM type characteristics or teasers. The fees for the new loan may include a prepayment penalty on the previous loan, and possibly a prepayment penalty on the new loan.

Why is the refinance decision so difficult?

- Biggest reason is that we cannot predict the future of interest rates, or how long we will keep a new loan
- Most “refinance calculators” do not understand this and are thus based on static assumptions that interest rates will remain constant at their current level and that you can predict how long you will keep the loan for.
- When interest rates fall, mortgage brokers will troll legal records to find prospects

Early Loan Repayment:

Lender Inducements

- Bonds are freely traded, so that when interest rates rise, bond values fall. If interest rates rise the difference between the statutory balance on the loan, and its market value will diverge. Occasionally lenders will offer borrowers an inducement to pay off their loan.
 - What are the risks of this strategy?

Market value of existing mortgage

- The market value of a loan is the present value of its expected payments
- Just as the market value of bond fluctuate as interest rates change, so will the value of a mortgage
- The expected payments is highly dependent on the prepayment assumption. When valuing bonds, one typically assumes they are held to maturity.

Ex 6a.6. Market Value of a Loan

- You took out a 9%, 30-year mortgage for \$160,000, four years ago. Current rates are 6.5%.
- What is the market value of this loan if:
 - You keep the loan until maturity
 - You payoff the loan 4 years from now
- Realistically, how does the market value this loan?
- What if the current rate is 10%?

Ex 6a.7. Value of Financing Incentive

- Condo's are selling very slowly in Taos, NM (and probably lots of other places). La Vida Feliz (possibly taking its clues from furniture stores) is offering no down payments, and no payments for a year. What is the value of this inducement to the buyer?
- Assumptions: \$250,000 unit when the 30-year note rate is 7%.
 - Why does the builder not just cut the price?

Ex 6a.8. Builder Buy down

- To move inventory a builder is offering either a mortgage at 6% when rates are 6.5%, or a 2/1 buy down (2% lower interest rate the first year followed by a 1% buy down the second year. What are the values of these alternative financing alternatives (160,000 note amount)?

Assuming an existing note

- Some notes are assumable, meaning that new borrower can take over an existing loans
- This is an attractive feature for sellers when interest rates are rising (a way to capitalize on the value of the loan)
- Appraisers have to be careful to incorporate the value of this or other special financing when placing a value on real property
- If the house has gone up in value, the buyer may need additional financing such as a second mortgage

Ex 6a.9. Assuming an existing note

- Five years ago you purchased a new home for 100,000 (with a 20% down payment). You now have an offer in hand from a buyer for \$150,00, subject to the buyer assuming your 5.5% loan. The buyer can get a 25-year second mortgage at 7.5% as long as he puts 20% equity into the deal. New 80%-LTV, 25-year mortgages are available at 6.5%. What is the apparent value of the note assumability (assume a 7 year horizon for the purchaser).

Wrap Around Loans

- Used to obtain additional financing while keeping an existing loan in place
- The new lender takes responsibility for paying the old note so and you make your entire payment to your new lender.
 - This protects the new lender by knowing that you are keeping your current loan current