Housing

Renting vs. owning a home

Mortgages

Building equity: fact or fiction?

Pros and cons of renting

- Advantages
  - Low move-in costs
  - You're mobile – you can move fairly quickly
    - Even if you break the lease and pay penalty
  - You can enjoy pool, laundry facilities
  - You have few responsibilities, little maintenance (no mowing grass or shoveling snow), no repairs
- Disadvantages
  - Your rent is not tax-deductible, no gains if value appreciates
  - You have less space, possibly obnoxious neighbors
  - Your rent rises with inflation

Pros and cons of ownership

- Advantages
  - You enjoy pride of ownership
  - Your mortgage payment is constant for years
    - Decreases in real terms with inflation (and your pay raises)
  - Your mortgage & property taxes are tax-deductible
  - You do build equity (especially with price appreciation)
  - You have more space
- Disadvantages
  - It's a big time commitment – raking, mowing, ***shoveling***, painting
  - There's a risk of potential decrease in value
  - Loss of freedom to move – costly to sell – not a liquid asset
  - You could be hit with repairs – "Money pit"
  - Your taxes will rise over time

Cost of renting vs. owning

Year	Mortgage payment	Ownership expenses	Total ownership expenses	Annual rent
1	19,959	4,900	24,859	21,600
2	19,959	5,047	25,006	22,248
…	…	…	…	…
7	19,959	5,851	25,810	25,792
8	19,959	6,026	25,985	26,565
…	…	…	…	…
15	19,959	7,412	27,371	32,672
…	…	…	…	…
25	19,959	9,961	29,920	43,908

Assumptions: Price of house $300,000; Loan amount $250,000; Monthly mortgage payment (30-year, 7%) $1,663; Monthly rent $1,800; Inflation 3%; Ownership expenses: Property insurance $600; Property taxes $2,300; Water, sewage, garbage $500, Maintenance $1,500

Example completely ignores any price appreciation of the house which would make owning even more attractive

More on renting vs. owning

- Conventional wisdom says home owners pay less in long-run
  - Appreciation and income-tax advantages outweigh initial higher mortgage payments
- But based on just cash-flow, renters win
  - Rent < mortgage + down payment lost + fees
- Big advantage of owning is capital gain on sale
  - But until you sell, it's only a paper gain
  - Real estate agent's fee reduces gain
    - **Agent's fee = 7% of selling price**

Wait to buy

- Purchasing a house is **arguably the best financial move** you could make after graduation
- **But don't rush into it**
- Normally way too much uncertainty after graduation to buy a house or condo
- But once things settle down and you like your job – then consider buying

The buying process

- Get your financial act together
  - You'll need a down payment of up to 20% of cost
  - Your mortgage is difference between price of house and your down payment
  - Call banks or go on-line for interest rate quotes (bankrate.com)

Calculate mortgage payment

- Assumptions
  - Price = \$200,000, down payment = 10% or \$20,000, borrow \$180,000 at 8%/yr for 15 yrs
- Calculations
  - PV_0 = PMT($PVIF_a$ – i% - n)
  - 180,000 = PMT($PVIF_a$ – 8/12% - 15x12)
  - 180,000 = PMT($PVIF_a$ - .67% - 180)
  - 180,000=>PV .67=>i 180=>n **PMT=1,720/mo**

"What if?" with Excel

- **Create a table for "what if" analysis**
  - At 8%, going with a 30 year mortgage instead of a 15 year mortgage, would save \$400 each month
- Excel has built-in PMT function
  - Plain or fancy

	n = 15 yrs	n = 30 yrs	ΔPay
i = 9%	1,826	1,448	378
i = 8%	1,720	1,320	400
i = 7%	1,618	1,198	420

=PMT(rate,periods,PV)

Price	$200,000		
Down payment	$20,000		
Down %	10%		
Mortgage	$180,000		
Term	15	30	
Interest Rate			
9.0%	=-PMT($A8/12,B$6*12,B4)	1,448.32	
8.0%	1,720.17	1,320.78	
7.0%	1,617.89	1,197.54	

Then add a fudge of 25 to 30% for property taxes, homeowner's insurance, upkeep, etc.

Finding a mortgage

- Shop around for lowest APR
  - Start with your financial institution where you have your checking and savings accounts
  - Get quotes over the phone or on-line
- Need to "pre qualify" for mortgage loan
  - Need to know max possible loan you can get before looking at houses
  - Lenders calculate this max amount based on common two rules-of-thumb

The rules

- Total annual mortgage payment (principal + interest + property taxes + insurance) ≤ 25 to 28% of gross income
  - If you earn $100,000, your max annual expend ≤ $28,000 or $2,333 per month
- Total monthly debt payments (mortgage + property taxes + insurance + car loans + **credit cards** ≤ 35% of gross income
  - 100,000/12 = $8,333 .35 x 8,333 = $2,900

Finding your house

- *Use a real estate agent* to help you find the house
  - ***No cost to you, the buyer***
  - All commissions are paid by the seller
    - Your agent gets half of the commission but it's all paid for by the seller
- Put a bid in on the house that is below the asking price
  - Usually price is inflated and more than seller expects

Make them an offer they can refuse

- Make your written offer and list conditions
  - Seller pays for termite and radon inspections
  - Certification of plumbing, heating and electrical systems
  - Living room curtains, certain appliances, etc.
- Provide earnest money – held in escrow
- Be prepared to counter seller's counteroffer
  - Who blinks first?
  - Could lose out to another higher bidder

Your bid is accepted - congrats

- Sign a sales contract
  - Specifies all conditions
  - More earnest money - all goes to down payment
- Apply for mortgage only after sales contract
  - Lender gives good faith estimates of APR and fees
  - Takes a few days for bank's committee to decide
- Meet with seller for closing at the lender's
  - Sign a zillion documents
  - **Be prepared for buyer's remorse (Oh, my God, what have we done!)**

Your mortgage

- ❑Lender keeps the title to your house
- ❑Lender has a lien on your property
  - Can foreclose if you don't make the payments
  - Courts sell your property to satisfy lender
- ❑Your mortgage payment stays constant
- ❑Monthly mortgage payment has two parts
  - Interest
  - (Return of) principal

Payment = interest + principal

- ❑**Interest** is lender's return for giving you the loan
- ❑Return of **principal** is the amount by which you are paying off or reducing the original loan each month
  - This is the equity you are building each month
- ❑In early years, monthly **payment** is nearly all **interest** and hardly any **principal**
- ❑In later years, it's the opposite

Amortize this please

- ❑ Assume a $100,000 mortgage at 9% a year for 30 years
  - 100,000 = PMT($PVIF_a$ – 9/12% - 30x12)
    - ❑ -100,000=>PV 9/12=>i 360=>n PMT = $804/mo
  - You'd pay $804 every month for 30 years
- ❑ Let's compare months 1, 180 and 360
  - Constructing an entire amortization schedule is beyond our scope
  - See how portion that is interest falls over time while portion that is return of principal or equity rises
  - Takes quite a few years to build equity through monthly payments

Month	Payment	Interest	Equity
1	804	750	54
180	804	597	207
360	804	12	792

How and why does this happen?

- In the early years, the loan is so big that almost all the payment is interest
- After some years the loan is being paid down and it's not so big so the interest is lower
  - First month's interest = (.09x100,000) / 12 = $750
  - Payment = $804 (fixed) and principal = 804–750 = 54
  - Loan is now down to 100,000 – 54 = 99,946
  - Second month's interest = (.09x99,946)/12=749.60
  - Second month's principal pay=804-749.60=54.40
  - Repeat for 360 months using Excel

Bad news and good news

- At roughly $54 per month, you will "build equity" of about $650 the first year
  - Kinda puny on a $120,000 house
  - That's why it's a myth that you build equity with your monthly mortgage payments -- takes a few years
- But equity = down payment + principal payments + **price appreciation**
- **Any increase in value of your house goes 100% to you!**
  - Zip goes to the bank that lent you the money!

Lower that monthly payment

- Your monthly payment is dependent on
  - The amount you borrowed
  - The interest rate you are paying
  - The length of your mortgage in years

How to lower your payment #1

- **Put more down - borrow less**
- loan = PMT(PVIF$_a$ – APR/12% - yrsx12)
- Input loan value of $1,000
  - **PMT is then monthly payment per $1,000**
  - For example, APR = 8% and 30 years
  - 1000=PMT(PVIFa–8/12%-30x12) **PMT=7.34**
    - Borrow $200,000: payment = 200x7.34=$1,468
    - Borrow $150,000: payment = 150x7.34=$1,101
    - Borrow $125,000: payment = 125x7.34= $918

How to lower your payment #2

- **Borrow at a lower rate**
- The lower the interest rate, the lower the monthly payment, *ceteris paribus*
- What happens if previous example was at 6% instead of 8%?

Loan	8%	6%
$200,000	$1,468	$1,199
$150,000	$1,101	$899
$125,000	$918	$749

How do you get a lower rate?

- Shop around
  - Call banks and go on-line for quotes
- Put more down – may get a lower rate
  - Less risk for lender
- **Refinance the loan**

Refinancing

- If rates go down later, you can refinance
- Take out new mortgage (same or different lender) at lower rate and pay off old loan
- Only works if two conditions are satisfied:
  - Rates drop enough to make it worthwhile
    - 7¾ down to 7½ is not enough
  - You plan to stay in house for a few years
- You need to overcome certain costs associated with refinancing

Refinancing costs

- Often original lender charges a prepayment penalty for early termination, say $1,000
- New lender charges “points” for the privilege of taking out a new loan
  - A point is 1% of the amount borrowed
    - 3 points would be $4,500 on a $150,000 mortgage
- If rate drops 8% to 6%, payment drops $202 (from $1,101 to $899, previous example)
  - At $202 a month, takes time to recover $5,500 ($1,000 + $4,500) in costs

How to lower your payment #3

- **Go with a longer term mortgage**
- Top table is for 15-yr mortgages
- Bottom table is for the former 30-yr example
- 15-yr has higher payments but **builds equity much faster**
  - **Pay less interest**

Loan	8%	6%
$200,000	$1,911	$1,688
$150,000	$1,433	$1,266
$125,000	$1,195	$1,054

Loan	8%	6%
$200,000	$1,468	$1,199
$150,000	$1,101	$899
$125,000	$918	$749

How much less interest?

- For an 8% mortgage of $150,000
  - 15-year payment is $1,433
    - Total payments = 180 x 1,433 = $257,940
  - 30-year payment is $1,101
    - Total payments = 360 x 1,101 = $396,360
- **Difference is $138,420 in interest**
- Mortgages don’t have penalties for paying more than required so you can “double up”
  - I prefer the 15-year and no discretion method

Two basic types of mortgages

- Conventional (fixed-rate) mortgage
  - Usually 20% down is required
- Adjustable rate mortgage (ARM)
  - Interest rate fluctuates year to year based on some index of interest rates
  - Often “teaser” rate for first year to attract you
  - Usually cap of 2% max increase per year
  - Usually cap of 5% max increase over life of loan
  - Relative attractiveness depends on level of rates
  - Go with conventional if rates are on low side

Costs of buying your house

- Mortgage payment = principal + interest
- Taxes and insurance
  - Real estate taxes of 1 to 4% of value of house
    - Typical to pay 1/12 of taxes each month to lender
      - Good for budgeting – avoids shock of $7,500 bill
  - Lender requires fire insurance
    - At closing, prepay one year’s insurance
    - Thereafter, 1/12 of annual premium per month for following year

More costs

- PMI – private mortgage insurance
  - Rip-off but one most of you will have to pay
  - Lenders require PMI if you cannot put 20% down
  - Paid monthly with mortgage payment
- Points – fee for taking out a mortgage
  - Each point is 1% of the size of the loan
  - Usually ½ to 3 points depending on the lender
  - Lender charges points to raise effective lending rate
    - Borrow $200,000 but pay $6,000 in points so really have only $194,000 to use for buying house – pay interest on $200,000
  - Points are paid at closing and are tax-deductible

Still more costs

- Title insurance to make sure you have a clear title
- Inspections
- Attorneys
- Deed recording
- Have $2,000 to $3,000 extra cash handy

It's a personal thing

- Many factors to consider when deciding to rent or buy, not just financial
- You should definitely rent until you're sure you're ready to buy
  - Save for down payment if buying is likely
- Don't spend more than you can afford
- Probably will end up spending more than you expect, so have something in reserve