

## Lecture 15(i) Announcements

- Q&A Sessions **this Wednesday**
  - 4-5:30 pm **Anderson 310**
  - 6:30-8:00pm **Anderson 210**
- Room locations at Final OneStop Page at bottom of Canvas (**Rooms same as for Midterm 2**)
- Deadline for registering for make-up is 4:00pm today (Monday)
- Office hours: 4-135 Hanson
  - Wed 1:30-4:00
- Vote on Platform policies at week 15 Canvas (and get 2 extra bonus points on HW11.)

## Lecture

Finish Discrimination **See Lec14(iii)**  
for notes

### Asymmetric Information

- Moral Hazard
- Adverse Selection
- Screening
- Signalling

Moral Hazard and the Banking Crisis  
(Introduce the material. To be continued in Lec 15(ii))

Asymmetric Information

“Frontiers of Microeconomics”

Review: we started with

First Welfare theorem:

Assumed no externalities

no monopoly

Then free market efficient

Then we discussed what happens with:

externalities

(role for government)

market power

(potential role for government)

All the while we

All the while we ignored the issue of asymmetric information.

Market may not be efficient

But government might not have an answer either. (Government probably doesn't have any more information than private sector).

Its complicated!!

So that is why this topic is still called “Frontiers in Microeconomics” even though asymmetric information was being talked about when I took this class over 30 years ago!

So information is hidden....  
.....but what is the info about?

1. Hidden Action  
Moral Hazard
2. Hidden Characteristics  
Adverse Selection

Illustrate with Insurance Industry:

Hidden Action:

People who are covered by an insurance policy can take actions to reduce the probability of an accident happening.

Extreme example:

Business has \$1,000,000 in coverage for a building worth \$500,000 (**overinsured**)

Might just accidentally leave gasoline around and light a lot of candles....

Overinsurance can lead to a hazard for a person's morals!

so the name, **moral hazard**

Other examples in insurance....

Examples in employer/employee relationship

What is the connection between moral hazard and externalities?

In an employee relationship, compare incentives when people are paid a flat salary versus commission?

If paid on a commission, worker bears more risk and has stronger incentives. (But this can cause other problems, workers have uneven pay, may not work well together as a team....)

## Hidden Characteristic

Suppose buying home insurance and deciding whether to get coverage for water damage.

Homeowner may know more about likelihood of having the problem, than the insurance company (inside information).

The **selection** of people who purchase the water damage coverage will be **adverse** from the perspective of the insurance company.

↑ If government passes a law that insurance companies cannot base price on a given characteristic, then it has the same impact as though hidden.

If new law makes it illegal to base insurance rates on pre-existing conditions, then we get **adverse selection**.

people with cancer: very interested in buying insurance.

healthy people: much less interested

In fact, there is such a law:

Affordable Health Care Act  
(AKA Obamacare)

Combines:

Ban on basing rates on pre-existing conditions

With

Individual Mandate

Because can't have one without the other.

Some definitions tested in  
Problem Set 11 on Aplia

Big idea: when have  
**adverse selection**  
or **hidden characteristics**  
there will be incentives to separate  
the good from the bad

(In insurance, there is an incentive to  
separate the good risks from the bad  
risks).

One side of the market: informed  
Other side: uninformed

**Screening**: when uninformed does  
something to try to separate out the  
good.

(An insurer can offer a policy with a  
very high deductible and make it very  
cheap. Good risks will tend to buy  
it.)

**Signalling:** when informed does something to **signal** he or she is a one of the good ones.

Example: real estate agent could be successful or not.

- Potential client may not be able to tell.
- Successful real estate agent gets Lexus or BMW



- Unsuccessful agent drives



- Potential client figures out who must be good.

**Fancy car: a signal of success.**

## Moral Hazard in Banking and the Global Financial Crisis

We will discuss the role of moral hazard in

- Subprime mortgages in the United States
- Lending to countries in the Eurozone

You may remember, in September 2008, the financial sector was falling off a cliff. To say something about this, we need to take a look at a balance sheet of a bank.



Balance Sheet  
First Bank of EconLand

<b>Assets</b>	
Loans (mortgages)	200

<b>Liabilities&amp;Equity</b>	
Liabilities (deposits, short-term credit...)	170
Equity	30
<b>Total Liabilities &amp;Equity</b>	<b>200</b>

Let's say the bank makes a mortgage loan of 200. Put that down as an asset of the bank. On the other side of the ledger, this money is coming from:

- Liabilities of the bank
- Equity in the bank (or capital)

Suppose

- Housing prices stable
- Borrower puts 20% down (50k down payment, ~~out of a 250k house~~)
- Borrower has good job and can pay mortgage payments.

Bank is in good shape. The borrower should be able to pay.

- If the borrower has bad luck loses his or her job, and can't make the mortgage payment, the borrower can sell the 250k house and should clear at least 225k (after paying real estate agents 6% and other costs) to pay off the 200k mortgage.
- If borrower just walks away, the bank can foreclose on the home and recover the bank's investment.

That's not the reality of the housing market before the crisis.

Housing bubble: prices kept going up a lot faster than overall inflation and people acted as though this was going to happen forever.

Subprime Loan:

- Give a loan to someone for 200k with no down payment. (That is, to buy a 200k house).
- And maybe even no income.

Why do something crazy like that? If next year the borrower can't pay, no problem. House will be worth 250k. Bank can sell it and make a profit.

That logic broke down when the housing bubble burst. Instead of going up, home prices started going down.

Suppose house price goes down to 170k. Homeowner is “**under water.**” Better for homeowner to walk and let bank have the house.



Suppose for a moment that the bank can actually sell the house for 170k. How is that going to change the balance sheet of the bank?

We will work through this in Lec 14(iii)

<del>Assets</del>	<del>200</del> 170
Loans (mortgages)	<del>200</del>
<b>Liabilities&amp;Equity</b>	
Liabilities (deposits, short-term credit...)	170
Equity	<del>30</del> 0
Total Liabilities &Equity	<del>200</del> 170

Have to write down equity to zero

What can we say now about the equity position of the bank?



Now, more realistically, take into account that the bank won't net \$170k from the repossessed home. Let say \$150k is all they can get. What can we say about the equity position of the bank now?

What happens next?

collapse!

We haven't said anything about moral hazard yet.

In Lec 15(ii), we discuss how government policy helped create a moral hazard problem that contributed to the crisis.

Then turn to discuss the Euro-zone, and how having a monetary union, but not a fiscal union creates moral hazard.