Finish chapter 4 and work through some of chapter 5 for the exam.

General equilibrium stuff talking about the whole economy is ignorable for the exam. Looking at more than one market will be on the exam. This is not general equilibrium because it doesn't look at ALL markets.

Note that distortions in the secondary market must also be accounted for when talking about changes in the primary market.

Most of what we've been doing is building up a set of tools, so you wouldn't be able to answer the later things without knowing the earlier stuff; in that sense the exam is cumulative. However, skip the philosophy stuff from the earlier part of the term. Expect problem-solving rather than discussion on the exam.

<u>Back to last time and uncertainty:</u>
Looking at the certainty equivalent: what sum of certain money would be adequate to make you indifferent between taking the gamble and taking the lump sum? He leaves this for you to do.

<u>Valuing things without markets</u>
Life: What is the loss of life worth? Seems an impossible question. Can't meaningfully measure this in terms of willingness to pay, unless you're going to lose it fairly soon afterward. Suppose you're going to lose your life unless you pay off; how much would you be willing to pay? Everything that you have and then some if you could get credit, I presume.

Some say we shouldn't put numbers to this, but the probability of loss of life occurs in many policy proposals. Have to choose. If life is infinitely valuable, then we could never complete a building project because someone might die and the costs would be by definition too great.

When we decide to drive our cars, we're implicitly weighing the benefits of the trip against the risk of loss and deciding that the trip is worth it.

Problems with valuing lives on a willingness-to-pay measure: rich people's lives are implicitly worth more because they have more to spend on themselves.

We're not going to try to value the certain loss of a life, but we'll place a value on increments in risk of loss of life. 2 methods:

Discounted future earnings: The lawyer's solution, common in wrongful death cases: look at wages at death, look at prospects for earnings had they not died, discount it all back to the present, and you have a number for the value of someone's life.

Problems with this measure:

- measures only the part of their lives where they were working;
- incorporates effects of discrimination on wages into the value of life, which implicitly devalues minorities, women, the young who haven't started careers, and the old who are about to retire;
- measures the employer's value for that person, not that person's valuation;
- doesn't take into account the family's valuation of that person's presence
- doesn't capture the value created by people who volunteer or who take lower-paying jobs that serve the community or who stay home to take care of a disabled relative or child;

Required compensation: one form of an allied market method (which is what we'll be doing for all of these kinds of non-market measures); measures the wage differential a person demands to take on an increment of risk.

Suppose that we knew that working in a subway exposed you to a 1/1000 higher risk of death per hour; you take $8 for the subway job, but $7 for a surface job. Thus the additional risk per hour is worth an additional dollar per hour to you.
divide the dollar by the risk: $1/(1/1000) = $1000 is the value that you place on your life. (Obviously this is very low).

You can also use the information from observed risk valuations and apply it to analogous situations. (Subway data applied to highrise construction with analogous risk).

The range of estimates on the value of a life is between $2.5 million and $5 million. Note that the DFE method returns only something between $1 and $1.5 million.

Using the RC approach can be used in two different ways: using the actual market and using an allied market.

Back to the subway example: If you've already figured out the wage rate that will get people to work on the project, you don't have to additionally compensate them because presumably they've taken into account the risk when they take the job at that wage. (This requires some major assumptions; see problems below).

Problems with the RC method:

- Lower-educated people with fewer prospects might be forced into taking higher-risk jobs.
- Employers have an incentive to lie about the actual risks and hide them to keep their wage rates down. Good information, known by the workers and accepted as applicable to them, is a requirement for RC to work.
- Problem in applying low-probability risk wage differentials to higher-probability situations: as risk increases, the differentials should get higher. Need to apply allied market numbers to similiarly-risky situations.
- Assumes perfect mobility of workers; that they can easily and immediately get another equivalent job.
- Assumes equal bargaining power between employer and employee.
- Assumes that risks are quantifiable: cutting-edge ventures may have unknown risks or at least unmeasurable risks.
- wage differentials may not take into consideration impact on family members.
- If using the approach indirectly, different people have different attitudes toward risk. The amount paid to a construction worker to work on a 45th story project probably shouldn't be applied to a professor; risktakers are likely to end up in riskier jobs and applying their differential to a less-risktaking person is an understatement of the risk-averse person's valuation.

Capital Values: The capital market is usable as an allied market to value noise, pollution, and other things that don't have markets.

Method: measure the difference in the value of assets located in areas affected by the noxious thing versus not in those areas; this incorporates all of the effects forever: no discounting is needed because it's the FULLY DISCOUNTED STREAM OF VALUE CHANGE.

How it's done: If you can measure the size of the externalities you're trying to place a value to, you can econometrically estimate the effect of each problem (and added benefit) on the value of a piece of property.

See the textbook for the airport example. first you collect data; then you run a multivariate regression on it to estimate coefficients; then you multiply the coefficients by the size of each pollutant; then take partial derivatives.

Time: applicable to problems like benefits from reduced highway congestion