Introduction of Labor Economics

- Labor economics analyzes how labor markets work → need to know the framework of labor supply and labor demand

- Labor economics can give us very useful insight over the many aspects of social issues → need to analyze the real data which reflects our current lives in the society

- Labor economics basically are interested in the employment of people and wages of workers → also are interested in the factors which determine employment and wages of people

- For example, the recent favorite topics that labor economics studies include the role of human capital (accumulation of education) and health issues (early childhood physical development).

- The accumulation of education is one of the major components for determining wage of workers in their lifetimes → think about the reason why you enter into colleges.

- Think about the fundamental factors which affect your accumulation of education → nutrition conditions and family background in your childhood are very important factors.

- Whether your mother smoke in her pregnancy is a key factor affecting your early childhood development → eventually determines your elementary school performance and it persists your whole career path during your lifetime.

- Another interesting example, it relates to the timing of elementary school → there can be maximum 11 months difference for the same grade of elementary kids.

- The observed age difference (measured by months) is proven to be important factor determining school performance (such as grades) → again it can persist for your lifetime.

Modern labor economics also examines many interesting policy issues

● Why is labor force participation of Korean women quite lower than men's rate? → The gender gap seems to be very severe among many OECD countries.

● How much does the gender earnings gap exist and what can explain the wage difference between the gender groups?

● How much does the earnings gap exist between regular and irregular workers and what can explain the wage difference between the worker groups?

- What is the economic impact of unions both on their members and on the rest of the economy?

- Do minimum wages decreases the employment of less-skilled workers?

- Do wage and tax subsidies encourage firms to increase their employment?

- Do job-training programs supported by government increase the possibility of being re-employed?

Main objective of this course

- Survey the field of labor economics with an emphasis on *both* theory and facts.

- In theory, individual make decision in order to maximize their own utilities (based on microeconomic theory).

- For example, they will decide whether or not to work and how much do they work.

- People will rationally respond to the any changes of environment which will happen in the labor market → so called "comparative static"

- Through the simple labor model, we can predict the direction of peoples' responses.

- The next question we are interested in is to estimate "how much of the response".

- For example, how much the adoption of new childcare programs would stimulate the labor force participate rate of Korean moms? → We want to know the exact numbers even though they will be estimated.

- This is the fact parts where we need empirical methodology → Labor economics heavily uses statistical analysis, mostly regression analysis (will cover later on).
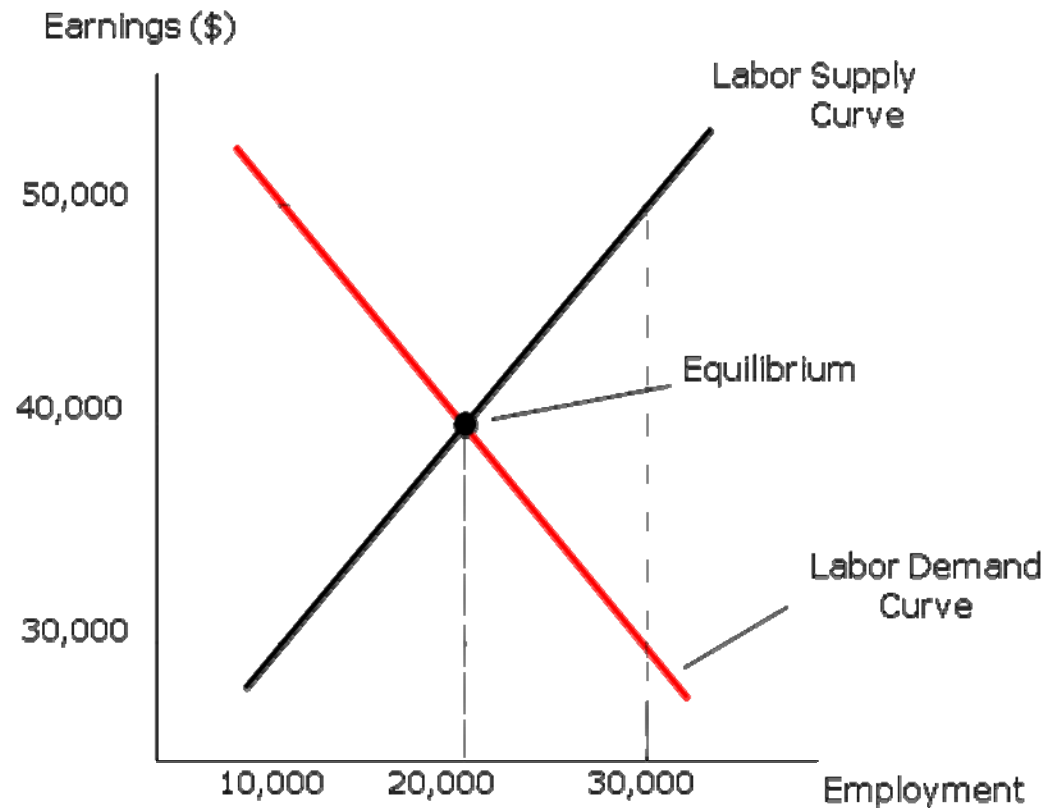
Framework of labor market

Labor supply

- Labor supply comes from the utility maximization problem faced by individuals

- It represents the relationship between the wage (price in the labor market context) and the number of employment (in the case of aggregate labor supply in the market).

- Persons tend to supply more their time as the wages increase → upward sloping (we admit this for now and studies more later on).

Labor demand

- Labor demand comes from the firm's profit maximization problem.

- Firms will want to hire many workers when labor is cheap.

- The relationship between the price of labor and how many workers firms are willing to hire. It can be shown by the downward-sloping.

Supply and demand in the labor market

Earnings ($)

Labor Supply Curve

50,000

Equilibrium

40,000

Labor Demand Curve

30,000

10,000   20,000   30,000   Employment

- Labor market equilibrium occurs where supply equals demand.

- Equilibrium wage is $40,000 and employment is 20,000

- In the wage of $50,000, there will be more people who are willing to supply than firms want to hire. (S>D)

- In the wage of $30,000, there will be more people who firms want to hire than the labor supply. (D>S)

- Price adjustment is required to reach at the equilibrium.

The role of government

- For example, the government affects decision of labor supply and demand in several ways.

- For example, consider the case of lowering income tax for workers in the labor market and we want to analyze the change of behaviors of workers → one of the comparative static examples.

- In theory, there will be two offsetting effects so called substitution and income effect → we don't the direction of changes in working hours.

An introduction to regression analysis

- Therefore, we need to *empirically* test both the direction and size of changes in working hours due to change in taxes.

- Empirical analysis requires extensive use of *econometrics*, the application of statistical techniques to study relationships in economic data.

- Basically, we want study (estimate) the relationship between economically meaningful variables.

● For example, we will be addressing such questions as:

1) How much does income increase as you invest one more in the schooling?

2) Does union increase the wage of union members? If so, how much would it be?

3) Does gender discrimination in the labor market?

When we consider all above questions, the entire factor affecting the outcome variables must be carefully controlled → multiple regression analysis.

The regression line between level of wages and schooling

- The regression line gives the relationship between the average log wage rate and the average years of schooling of workers, given other factors affecting wages are constant.

- The slope of regression line can be interpreted the size of wage change due to one-year change in schooling.

- The intercept shows the level of wages when one has no schooling.

Specific example of wage equation

- First of all, think about of all factors affecting workers' wages → education, labor market experience, tenure, occupation, industry, location, union members, gender, etc.

- Write down simple linear equation relating the average *log* wage and several explanatory variable → use of log wage introduces the "rate" interpretation of estimated coefficient of explanatory variables.

- Log w = a + b*education + c*tenure +d*gender + e

- We estimate of b, c and d by regression analysis → use Excel

- For example, if "b" is estimated as 0.12 then how do we interpret?

  Ans → given tenure and gender are constant, one-more year of schooling increase about 12% of average wages of workers.

- What about other coefficients?

- The next step is to test of statistical significance → use t-statistic or p-value which will be reported from Excel

The regression line