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January 2002

Advanced Labor Economics
Chapter 1 and Appendix

INTRODUCTION

- Economic Theory provides insights into individual and social behavior
- Helps in formulating and evaluating social policy
- Labor Economics analyzes the behavior and relationship between employers and employees
- Employment relationship is one of the fundamentals interactions in our lives and society
- Labor market is a special market: non-pecuniary aspects are important, legislation and institutions are also of great relevance.

- It is still a market though:
 1. Several institutions are in place to facilitate contact between employees and employers
 2. Information about quantities and prices is exchanged
 3. Contracts are the means to close transactions (formal or informal)
- Workers are allocated to firms, industries, occupations and regions, and get paid for their work. Usually by the hour, week or month. This comes to emphasize the importance of the selection process and the motivation on the job.
- Labor Economics is primarily concern with the behavior of employers and employees in response to incentives: wages, prices, profits, and non-pecuniary aspects such as working conditions.

POSITIVE ECONOMICS

- Positive economics: analyzes “what is.” Identifying, understanding and measuring labor market relationships.
- People respond to benefits (pecuniary and non-pecuniary), and costs (foregone opportunities and actual costs).
- Two important assumptions:
 1. Scarcity: resources are limited, there is a cost to every transaction.
 2. Rationality: agents are objective maximizers. Importance of consistency and adaptability.
- Models and Predictions: judge the models by their predictions not for their assumptions. Models have to simplify reality and still capture the main issues.

- Example: low and high wages and the quit rate. *Other things equal* people would like to go to higher paying firms. Employers might want to do the same in some sense. Can we then associate low wages with high turnover and vice-versa? Maybe
- The predictions emerge from:
 1. Scarcity and Rationality
 2. Holding other things equal
 3. Assumptions are micro, prediction is aggregate.

NORMATIVE ECONOMICS

- Normative economics is focused on “what should be.”
- There are two types of transactions:
 1. Voluntary and mutually beneficial. Labor market can help and can lead to Pareto Efficiency.
 2. Someone might lose. Need for redistribution and mandatory transactions.
- If the transactions are Pareto improving they can be supported unambiguously: because either everyone wins, some gain some stay the same, or some gain some lose but losers lose less than gainers gain, and somehow they will compensate the formers.

- Sometimes the market fails, and the government can play a role, why does it fail?
 1. Ignorance
 2. Transaction barriers: laws, regulations.
Lack of funds to finance moves or training
 3. Taxation
 4. Non-existence of markets
- Normative Economics and Government Policy:
 1. Laws and regulations can be repelled.
 2. Public Goods provided
 3. Capital Market imperfections overcome:
job training and moving funds.
 4. Market substitutes
- The government always has to assess what is won and what is lost
- Efficiency vs. Equity

APPENDIX: An introduction to OLS Regression Analysis

- Simple Introduction to Statistical and Econometric Analysis
- Why do we need these tools? Testing Hypothesis using data on the relevant variables. For example, we want to test the hypothesis that the higher the wage the lower the voluntary turnover.
- First we need data. We can then make the hypothesis more precise: Holding all else constant, a firm's quit rate is inversely related to the wage it pays.
- We can define the quit rates to be the dependent variable, and the wage rates as the independent variable. Univariate Regression Analysis.

- We can plot the data. It is a cross-section of firms.

$$Y = a + bX \quad (1)$$

where a is the intercept of the line, meaning the value of Y when $X = 0$, and b is the slope, that is, the vertical distance the line travels for a unit change in the value of the variable in the horizontal axis. The slope will be positive or negative depending on whether the line is upward or downward sloping.

- We want to summarize the relationship.
- One way of doing it is by using Ordinary Least Squares regression analysis.
 1. This procedure plots the best line through the various data points.

$$Q_i = \alpha_0 + \alpha_1 W_i + \varepsilon_i \quad (2)$$

where Q_i is the dependent variable, W_i is the independent and ε_i are random errors uncorrelated with wages that can follow a given distribution.

2. The parameters describing this line are estimated, not exactly but with some error.
3. The criterion used is to minimize the sum of the square of the distances between the actual and estimated values.
4. Given a distributional assumption about the errors we can construct standard errors and confidence intervals to know how accurate are our estimates and test the

hypothesis at hand.

5. With the data in the example we estimate that

$$Q_i = 45 - 2.5W_i \quad (3)$$

with standard errors of 5.3 for the intercept and .625 for the slope. The ratio of the value of the parameter to the standard error gives us a sense of the accuracy of the estimate. We want that value to be more than 2.

- Multivariate Regression allows us to take more than wages into account in the relationship described.
- Many other things can influence quit behavior:
 1. employee benefits
 2. working conditions
 3. firm size
 4. age and level of training of employee
- If any of these varies systematically with wage rates across firms we would be estimating the relationship incorrectly.
- Assume for a moment that the only other relevant variable is the age of the workforce on a given firm.
- Older workers are less likely to quit their jobs because of ties to co-workers become stronger, and the psychological costs of changing costs become larger (moving).

- We would be estimating the following relationship:

$$Q_i = \alpha'_0 + \alpha'_1 W_i + \alpha'_2 A_i + \varepsilon_i \quad (4)$$

where A_i is a dichotomous variable with value 1 if the average age of the employees in the firm is larger than 40.

- The theory would predict $\alpha'_2 < 0$
- We can estimate these parameters using multiple regression analysis
- Problem of omitted variables: If the real relationship is $Q_i = 50 - 2.5W_i - 10A_i$, but we estimate $Q_i = a_0 + a_1 W_i + \varepsilon_i$, then the parameter of interest would be estimated as -4 when we said the true value is -2.5
- The bias comes from the positive correlation between age and wages.