Econ 522, 01/25/2018

Measuring the Macroeconomy, Part 2
Classical Model

Unemployment

- Official U.S. unemployment statistics are calculated by the BLS using precise definitions.

- Reference Population: adult civilian non-institutionalized population. In classifying individuals as employed, unemployed, or not in the labor force only people in the reference population are considered.

- Employed: people who have worked in the last week, or who have a job but were temporarily absent

- Unemployed: people who are not employed, and who are available for and actively seeking employment

- Labor Force: people who are employed + people who are unemployed

- Not in the Labor Force: reference population - labor force

- Unemployment rate
- Labor force participation rate

Sources of Employment Related Data

- Household surveys
- Establishment surveys
- Administrative records

Chapter 3

The Classical Model

Extended Circular Flow Diagram

- Describes the structure of the economy. This structure underlies the economic models we will cover throughout the semester.

- 3 Groups (economic actors): households, firms, governments

- 3 Markets: factors market, financial market, goods and services market

Classical Model Set Up

- Circular flow structure
- Closed-economy
- Market clearing model

- Focus on “real” variables
- Long-run

Production and Output

- *What determines how much the economy produces?*

- (1) Availability of factors of production (inputs into the production process)

    - To simplify, here we will assume there are two factors of production: labor (L) and capital (K)

- (2) Available technology (ability to turn inputs into outputs)

    - Represent firm's production technology using a production function

- *Production Function*: indicates how many units of output can be produced by combining different amounts of inputs

- *Capital*: the set of tools, machines, and structures used by workers in production; the letter *K* is used to denote the number of units of capital

- *Labor*: the physical and mental efforts of workers, the time people spend working; the letter *L* is used to denote the amount of labor (typically the number of workers, or the number of hours worked)

Production Technology & the Production Function

- General notation: $Y = F(K, L)$

- Indicates how many units of output (Y) can be produced using K units of capital and employing L units of labor

- The $F( )$ describes some general relationship

- Example: *Cobb Douglas Production Function*

$$Y = \mathrm{F}(K, L) = AK^{1/3}L^{2/3}$$

- **<u>Returns to Scale</u>** Property of Production Functions
    - What happens to output when <u>all</u> inputs are increased by a certain amount
- *Constant Returns to Scale*: doubling all inputs will cause the amount of output produced to double
- *Increasing Returns to Scale*: doubling all inputs will cause the amount of output to more than double
- *Decreasing Returns to Scale*: doubling all inputs will cause output to increase, but by less than double

- Assume: the production function exhibits constant returns to scale. This implies when each factor of production is increased by a fixed percent, output will increase by the same percent.

- Checking returns to scale for a particular function…

Factors of Production

- *Factor Prices*: the prices per unit that a firm pays for the factors of production
    - *Wage* (*W*): the price per unit of labor
    - *Rental rate* (*R*): the price per unit of capital
- In real terms …

Firms

- Assume:
    - Economy is made up of perfectly competitive firms (price takers)
    - Can describe as one representative firm
    - Technology, supply of capital, and supply of labor are all fixed
    - Full resource utilization

Firm Decisions

- (1) How much output should firms produce?
- (2) How much factors of production should firms hire?
- Criteria used by firms to answer both questions: *maximize profit*.
- Profit equation …