Discussion Handout 3: Ch. 12 - Production & Growth and Ch. 13 - Saving, Investment, and the Financial System

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Ch. 12 - Production and Growth

Productivity:

- The quantity of goods and services produced from each unit of labor input
- Textbook's key determinant of the standard of living
- Can be approximated by Real GDP/Hours Worked

Question: How does productivity relate to our standard of living? What might productivity miss as a measure of comparing standards of living?

Determinants of Productivity:

- Physical Capital: Stock of equipment and structures used to produce goods. Capital usually funded by higher savings that is used to invest in capital.
- Human Capital: Knowledge that workers acquire through education, training, and experience
- Natural Resources: Inputs to production provided by nature
- Technological knowledge: Understanding of the best way to produce goods and services
- Other possible factors: population growth, property rights and political stability, free trade

Other Definitions:

- Diminishing Returns: As the stock of capital rises, the extra output produced from an additional unit of capital falls
- Catch-up effect: Countries with lower starting incomes tend to see higher growth

Ch. 13 - Savings, Investment, and the Financial System

Big Question: What is the role of the financial system? Why is it important? Why might the financial system fall short of its goals?

Financial System: - institutions that match savings and investment. Made-up of two main components 1. Financial Markets and 2. Financial Intermediaries

1. **Financial Markets:** Made-up of the 1. Bond Market and 2. Stock Market

A. **Bond Market**

Bond = a certificate of indebtedness (IOU). Usually from a company or the government.

Important Characteristics of Bonds:

- Term - how long until the bond matures (the time when the borrower pays back the principle (amount of the loan)). A perpetuity is a bond that never matures.
- Credit Risk - probability that the borrower will fail to pay back the principle
- Tax Treatment - you have to pay taxes on the income from most bonds, but municipal (city or state) bonds are usually tax free.

B. **Stock Market**

Stock = ownership in a firm, claim to a firm's profits. Firms often give their own employees stock options to incentivize them to worker harder to increase profits.

2. **Financial Intermediaries**: Financial institutions through which savers can indirectly provide funds to borrowers. Examples are Banks (take deposits and make loans) and Mutual Funds (sell shares to people of a portfolio of stocks, bonds or both).

Important Distinction: In econ speak, investment is the purchase of new capital by firms. When you as an individual "invest" in the stock market, economists call that savings.

National Income Accounts

National income accounts help add up expenses and income at the national level. This sections assumes a closed economy (no interaction with other countries, so no imports or exports) for simplicity although we live in open economies.

Recall: Our definition of GDP was:

Income (Y) = Consumption (C) + Investment (I) + Government (G) + Net Exports (NX)

We can rewrite this in a closed economy with no imports and exports as:

$$Y = C + I + G$$

If we subtract household and government spending from total income this leaves us with how much money in the economy was saved (by definition) and this equals the investment by firms (by the identity). We can think of the equals sign (=) as the financial intermediaries that connect household savings to firms for investment:

$$Y - C - G = I$$

$$Y - C - G = \text{Savings (S)} = \text{Investment (I)}$$

We can also add taxes to this identity, which are subtracted from households and act as the governments income, then:

$$S = (Y - T - C) + (T - G)$$

$$\text{National Savings} = \text{Private Savings} + \text{Public Savings}$$

We can think of private savings as the amount households have after taxes and public savings as the amount the government has after spending on programs. When public savings in above zero we say the government has a *budget surplus* if it is the opposite then it has a *budget deficit*.

Market for Loanable Funds: a model (simplistic way) of thinking about all the income people have chosen to lend.

In the model, Supply is equal to people's savings and Demand is how much firms want to borrow for investment. The price in the market is the interest rate.

Example: Budget Deficit & Crowding out