Intermediate Macroeconomic Theory

Topic 1: Introduction (Mankiw chapter 1)  
(updated 9/23/09)

Learning objectives
This chapter introduces you to
- the issues macroeconomists study
- the tools macroeconomists use
- some important concepts in macroeconomic analysis

Three main variables we will study:
1. Gross domestic product, output (GDP)
2. Inflation in the cost of living (CPI)
3. Unemployment rate

We will begin by looking at trends in the data for these, and make initial observations.
GDP: Observations
1. Long-term upward trend. Income more than doubled over last 30 years.
2. Short-run disruptions in the trend: recessions.

Unemployment: Observations
1. Unemployment always positive.
2. Fluctuations related to GDP: unemployment higher during recessions.
Inflation: Observations

1. Inflation can be negative.
2. Often high when GDP high, but not always (see 1970s).

Example of a model:
The supply & demand for new cars
- explains the factors that determine the price of cars and the quantity sold.
- assumes the market is competitive: each buyer and seller is too small to affect the market price
- Variables:
  - \( Q^d \) = quantity of cars that buyers demand
  - \( Q^s \) = quantity that producers supply
  - \( P \) = price of new cars
  - \( Y \) = aggregate income

How we learn Economics: Models
...are simplified versions of a more complex reality
- irrelevant details are stripped away

Used to
- show the relationships between economic variables
- explain the economy’s behavior
- devise policies to improve economic performance

The demand for cars
demand equation: \( Q^d = D(P,Y) \)

shows that the quantity of cars consumers demand is related to the price of cars and aggregate income.
Digression: Functional notation

- **General functional notation** shows only that the variables are related:
  \[ Q^d = D(P, Y) \]

  A list of the variables that affect \( Q^d \)

- **Specific functional form** shows the precise quantitative relationship:
  
  Examples:
  
  1) \[ Q^d = D(P, Y) = 60 - 10P + 2Y \]
  2) \[ Q^d = D(P, Y) = \frac{0.3Y}{P} \]

The market for cars: **demand**

- **Demand equation**: \( Q^d = D(P, Y) \)

  The demand curve shows the relationship between quantity demanded and price, other things equal.

The market for cars: **supply**

- **Supply equation**: \( Q^s = S(P) \)

  The supply curve shows the relationship between quantity supplied and price, other things equal.
The market for cars: equilibrium

The effects of an increase in income:

Endogenous vs. exogenous variables:

A Multitude of Models

No one model can address all the issues we care about. For example,

- If we want to know how a fall in aggregate income affects new car prices, we can use the S/D model for new cars.
- But if we want to know why aggregate income falls, we need a different model.
A Multitude of Models
• So we will learn different models for studying different issues (unemployment, inflation, growth).

• For each new model, you should keep track of
  – its assumptions,
  – which variables are endogenous and exogenous,
  – which questions it can help us understand,

Prices: Flexible Versus Sticky
• The economy’s behavior depends partly on whether prices are sticky or flexible:
  • If prices are sticky, then demand won’t always equal supply. This helps explain
    – unemployment (excess supply of labor)
    – the occasional inability of firms to sell what they produce
  • Long run: prices flexible, markets clear, economy behaves very differently.

Prices: Flexible Versus Sticky
• Market clearing: an assumption that prices are flexible and adjust to equate supply and demand.
• In the short run, many prices are sticky—they adjust only sluggishly in response to supply/demand imbalances.
  For example,
  – labor contracts that fix the nominal wage for a year or longer
  – magazine prices that publishers change only once every 3-4 years

Outline of the class:
• Classical and Growth Theory (ch. 2-8)
  How the economy works in the long run, when prices are flexible and markets work well.

• Business Cycle Theory (ch. 9-15)
  How the economy works in the short run, when prices are sticky. What can policy makers do when things go wrong.

• Microeconomic Foundations (Chaps. 16-17)
  Incorporate features from microeconomics on the behavior of consumers. (if time permits)