Chapter 11

Money growth and inflation
(will be covered rapidly)

The classical theory of inflation

- Applies in the long run only
- Thus far we have thought of price as the money value of a basket of goods, and have compared it over points in time
- Now turn this conception around and think of the value of money in terms of how many goods and services it can buy
  - 'Value of money' as opposed to 'money value' of items

- This means that the value of money is inversely related to the composite price level, meaning that as inflation occurs, the value of money diminishes, and as deflation occurs, the opposite applies
  - $ 1 = 1 / P
  - In this context, we are not talking about interest rates at all

- In the long run, the composite price level, and thus the rate of inflation, adjusts to the level where the demand for money = the supply of money
  - This framework for the supply and demand for money is quite different from the framework presented in chapter 8, which consisted of the S and D for loanable funds

Quantity theory of money

- The basic idea is that what matters for inflation in the long run is the growth in the quantity of money circulating relative to the availability of real goods and services on which it is to be spent

- It is the phenomenon of "too many $ chasing too few goods" that causes the price inflation
- The opposite is possible as well: "too few $ chasing too many goods" that causes price deflation

The classical dichotomy

- It is the real and the money sectors of economy that are dichotomous, which means separate and isolated from each other
  - What occurs is one has no effect in the other
- An implication of this dichotomy is that money is neutral

- Diversion to some reminders
  - Recall distinction between real and nominal variables
  - Nominal variables are measured in monetary units
  - Real variables reflect volumes, and are measured in either physical units or constant dollars
  - Prices as we normally consider them are nominal variables
  - Relative prices, or prices compared to each other, are the real variables

  - The real economy consists of the real variables
  - The money economy consists only of nominal variables
- Back to the neutrality of money
  - A change in the money supply, a totally NOMINAL variable, will affect the price level (another nominal variable), but it will not affect any REAL variable.

- Example: If there is price inflation caused by growth in the money supply, wages will adjust along with prices so that the real wage will remain unchanged, and there will be no changes in the real labour market
  - No changes in employment, unemployment, etc.

The quantity equation

- Definition: the velocity of money is the number of times per year that a $ circulates
- V = (P * Y) / M (identity)
  - P is the composite price level
  - Y is real GDP
  - P * Y is nominal GDP
  - M is the money supply

- M * V = P * Y
- What is the significance of this?
  - If M increases by a lot, either…
    - P must rise
    - Or Y must rise
    - Or V must fall
  - V is thought to be pretty stable over time
  - In the long run, Y (real GDP) increases, but only due to increasing factor endowments or productivity
  - So P is forced to rise, which means inflation

- **The inflation tax**
  - Is an application of the quantity equation
  - If a government faces a big budget deficit, it can do 3 things
    - Raise taxes
    - Borrow the shortfall by issuing bonds (and potentially cause crowding out)
    - Print money to pay its creditors. That is the inflation tax
  - If the government adopts the last option to any degree, major price inflation will emerge, which is a tax on savers and anyone who holds onto money balances
  - See figure 11.4

- **The Fisher effect**
  - Long run only
  - The nominal interest rate adjusts such that the real interest rate is relatively constant
  - If the inflation rate increases (decreases), the nominal interest rate will increase (decrease) in tandem
  - Recall that the real interest rate is a real variable, so that the neutrality of money applies
  - See figure 11.5

Summary of this chapter so far

- ONE factor that contributes to inflation or deflation is the rate of growth of the money supply
  - Especially for large increases or decreases
  - There are other factors
- The quantity theory of money is the classical view of the macroeconomy, and is closely tied to the neutrality of money
  - The quantity equation is the key element of it

- If there is rapid growth (shrinkage) in the money supply without a commensurate increase (decrease) in REAL output, then there will be high inflation (deflation), as there are too many (few) $ chasing too little (much) output
  - That is principle # 9 in the textbook, page 14

- The growth rate in the money supply should not greatly exceed the growth rate in real production, as the production of additional consumable goods and services are required in order to soak up the newly circulating $
  - That is not controversial

- Hyperinflation can also be caused by a normal growth rate in the money supply coupled with a collapse in real output
  - Political turmoil and civil war will cause this

The costs of non hyper-inflation

- Often incomes are indexed to inflation, which means that wages and pensions often adjust to price inflation
- Does this mean that inflation is not dangerous from an economics perspective? NO!
  - It does have important short-run effects in the real economy

- Inflation DOES have an impact on the real economy. How? Textbook gives 6 ways, of which I review 4.
  - Shoe leather costs
  - Relative price variability and mis-allocation of resources
  - Tax distortions
  - Unexpected inflation causes arbitrary redistributions of income and wealth

- Shoe leather costs occur when economic actors try to outrun inflation by unloading their money balances before they lose a lot of their value
  - Inflation is so high that money no longer functions as a store of value
  - Either spend the balance immediately or convert it into something that holds value better than money

- Relative price variability and mis-allocation of resources
  - We have experienced this in Canada
  - Again the idea is running a race against inflation
  - It can distort investment decisions in particular when it becomes more profitable to invest in speculative activities (inflation hedges) rather than in capital goods and structures, which are productive activities

  - Case in point is the high inflation during the mid 2000s in the US housing market, which was the epicenter for the economic crisis that the fully developed world now faces

- Tax distortions are compounded by inflation
  - If income taxes are applied to nominal interest earnings rather than real interest earnings, savers are irrational
    - See table 11.1
  - If income taxes are applied to nominal wage increases rather than real wage increases, governments gain and workers lose

- **Unexpected inflation causes arbitrary redistributions of income and wealth**
  - **Unanticipated inflation is more harmful**
  - **When inflation is higher (lower) than expected, creditors lose (win) and debtors win (lose) as the debts are paid back in deflated (inflated) $**
    - **Unless the loan contract can be renegotiated**
- **Read the case study at the end of the chapter**