Discussion Handout 6: Chapter 17 Money Growth and Inflation

March 13, 2020

I. Classical Theory of Inflation

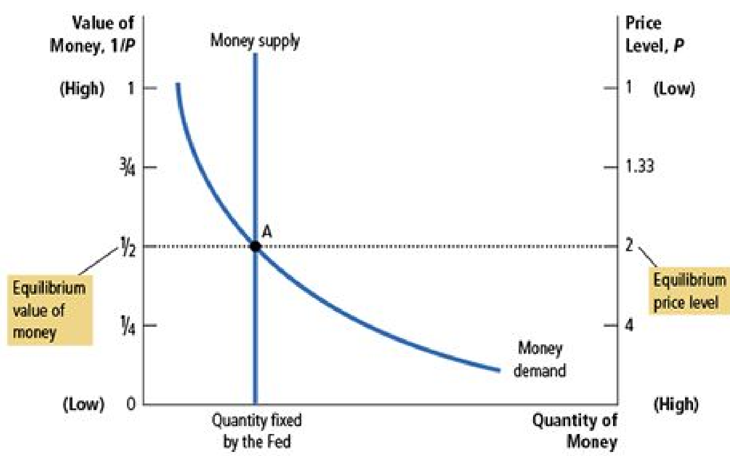
Big Questions: What determines inflation? Why can inflation be a problem? Why would we be worried about deflation?

Quantity Theory of Money - the theory that the quantity of money available in an economy determines the value, and growth in the quantity of money is the primary cause of inflation.

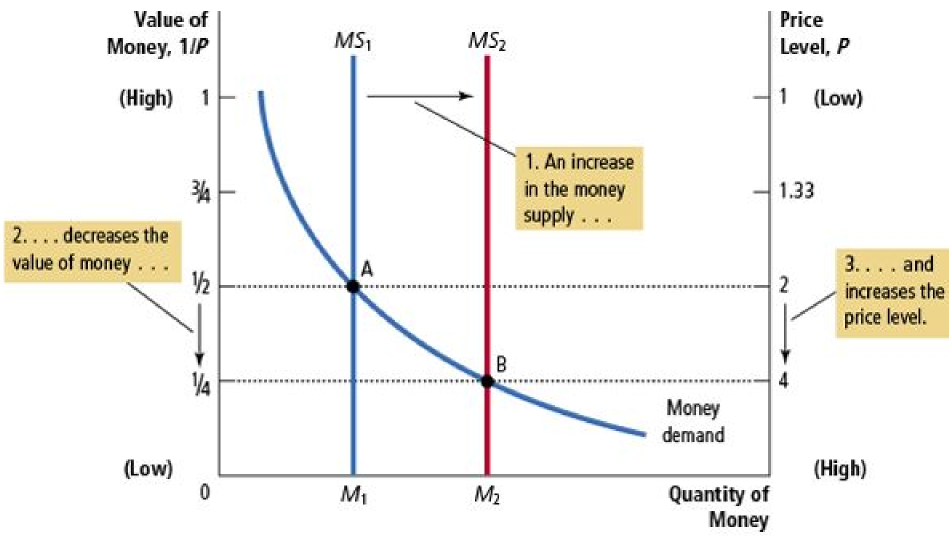
Key idea 1: When the overall price level rises (often measured by CPI) the value of money falls.

Key idea 2: The value of this money is determined by the supply and demand for money.

Key idea 3: In the long run, money supply and money demand are brought into equilibrium by the overall level of prices.



The Effects of a Monetary Injection: If the Fed increases the money supply, the Money Supply Curve (MS1) shifts to the right (MS2). In the new equilibrium, the value of money decreases, and the price level increases.



How this works: After a monetary injection, people have more money than they need, which they will usually spend on goods and services. The economy's ability to produce goods and services has not changed, so the price of goods and services increases due to the greater demand to clear the market. Since the price level has increased, demand for money increases so people can cover the new higher prices until it reaches the new equilibrium.

II. Misc Concepts

Concept 1: Classical Dichotomy & Monetary Neutrality. - Nominal variables are measured in current prices (monetary units). Real variables are compared with the same prices (physical units). The theoretical division of these variables into two groups is called "Classical Dichotomy". This dichotomy can be helpful to think about what variables inflation effects (nominal) and ones it doesn't (real). The irrelevance of changes in money for real variables is called "monetary neutrality." However, think that in the short-run, monetary policy is not neutral and can have real effects (in a future chapter).

Concept 2: Velocity of Money - tells us how fast money circulates through the economy from person to person.

$$Velocity = \frac{(Price\ Level * Quantity\ of\ Output)}{Quantity\ of\ Money\ Supply}$$

Rearranging we get the Quantity equation - relates the quantity of money to the nominal value of output. If the money supply rises (from Monetary Policy), either the price level rises, output rises, or the velocity falls.

$$Quantity\ of\ Money\ Supply * Velocity = Price\ Level * Quantity\ of\ Output$$

In reality, velocity is relatively constant, and output is not determined by the money supply, so a rise in the money supply leads to an increase in the price level (inflation). This is consistent with the quantity theory of money.

Concept 3: Inflation tax - why do countries end up having out of control inflation (hyperinflation)? They print money to cover their spending instead of using tax dollars. When it does this, it is said to be levying an inflation tax - when they print more money, the money supply increases, the price level rises, and the currency in people's wallets becomes less valuable.

Concept 4: The Fischer Effect - We also are interested in how the money supply effects interest rates because they link the present and the future economy through savings and investment. Recall:

$$Nominal\ Interest\ Rate = Real\ Interest\ Rate + Inflation\ Rate$$

When the money supply increases, inflation increases, and thus nominal interest rates increase although the real rate is unchanged. This is called the Fischer Effect.

III. Costs of Inflation

Costs:

1. Shoe Leather Costs
2. Menu Cost
3. Relative-Price Variability & Misallocation of Resources
4. Inflation-induced tax distortions
5. Confusion & inconvenience
6. Arbitrary redistribution of wealth

Deflation - when the price level declines. Some deflation might be positive - nominal interest rates would decline and some of the costs of inflation might be avoided like shoe leather costs. However, some of these costs such as menu costs and variable relative prices still apply. However, deflation usually redistributes wealth from borrowers to debtors, which can particularly hurt poorer individuals. It also usually occurs due to other issues in the economy such as lower demand for goods and services, high unemployment, or lower incomes.