

LECTURE 24: INFLATION II

- I. Why inflation really matters
- a. When inflation is anticipated, we can adjust a rate (such as inflation or growth rate) to compensate. We thus have the *real* rate, or the interest rate adjusted for inflation:

$$\text{real rate} = \text{nominal rate} - \text{inflation rate}$$

- i. Note this is a simple way to adjust for inflation; there is a more complex, but more accurate way, to adjust.¹
- ii. Okay since other people keep track of inflation and can adjust for it, so it doesn't really matter. Right?
- b. Wrong. Yes, at some level the market makes inflation immaterial; if you double all prices and you double all wages, there should be no change. So what if inflation's high? It typically doesn't matter much if the inflation's foreseen but unanticipated inflation can cause real problems for...
 - i. Fixed-income receivers. Sometimes their income is adjusted for inflation, but it takes time to calculate. If inflation's unexpectedly high, it can create a real problem.
 - ii. Savers. If unanticipated, the interest you receive will be less than the inflation. Even if you're gaining more money in nominal terms, you'll losing it in real terms.
 - iii. Creditors. Unanticipated inflation harms those who lend money out for similar reasons as it harms savers.
- c. "Unanticipated" means whatever's different from the anticipated inflation rate.
 - i. If inflation is expected to be 4% but it's really 5%, then savers, etc. are worse off because their real interest rate is lower than it should be ("should" determined by the market rate).
 - ii. If inflation is expected to be 4% but it's really 3%, then savers, etc. are better off because their real interest rate is higher than it should be ("should" determined by the market rate).
- d. Lots of unanticipated inflation deters saving, which creates problems for long-term economic growth. It does, however, encourage spending

¹ The actual equation is: $(1 + \text{nominal rate}) / (1 + \text{inflation rate}) - 1 = \text{real rate}$.

(since you can either invest/save your money or spend it) which is good for short-term economic growth.

- e. What's bad for savers is good for borrowers. If you have a lot of student loans, pray for unexpected inflation because it will be easier to earn more and thus easier to pay back your bank.
 - f. All these problems become disastrous under *hyperinflation*—when the price level grows really fast. So fast, what prices should be become difficult to determine.
 - i. In Germany after WWI, prices would rise so fast, customers sometimes had to pay twice as much when they paid the bill compared to when they ordered their food.
 - ii. In 2008, Zimbabwe's inflation was about 14.9 *billion* percent.
- II. What causes inflation?
- a. An inflation game
 - b. The most common cause is an increase in the money supply. We call this *demand-pull* inflation: when too much money chases too few goods. Consider the following equation:

$$Mv = p_L Y_R$$

- i. Where M is the money supply;
 - ii. And v is the velocity of money (how often money changes hands);
 - iii. And p_L is the price level;
 - iv. And Y_R is real GDP.
- c. If you increase the money supply, either you have to be buying and selling more things (Y_R) or you have more inflation. This is also known as the quantity theory of money.
 - i. This theory also illustrates why deflation is particularly nasty.
 - ii. If people expect prices to fall, they won't buy anything (because they want to wait until later, when prices are lower).
 - iii. In addition, people are getting paid less (because prices are lower), which is a reduction in GDP.
 - iv. Both effects put downward pressure on velocity, which puts *more* downward pressure on the price level.
 - v. Because deflation is so nasty, countries prefer to have a little inflation (about 2%). Deflation is very hard to get out of.
 - d. *Cost-push* inflation comes from when a fundamental good, one that is an input with many other goods, increases in price. That price

translates into higher costs for many other goods which push their prices up as well. It is a rarer form of inflation.

- i. In 1973, OPEC cut production to beef up gas prices, quadrupling the price of oil. Since oil is so important to the economy, this price hike led to inflation.
- ii. This scenario is unlikely to happen in the foreseeable future because (a) no single organization has this sort of influence on the price of oil anymore and (b) alternative energy is more common now so oil's role in the economy is diminished.
- iii. Cost-push inflation is controversial. Some economists argue instances such as the 1970s inflation was actually caused by a corresponding increase in the money supply. If money spent on one area goes up and the money supply isn't increasing, then money spent on other areas should go down.