



Notes – Topic 6

Topic 6 - Inflation

- I. Introduction
 - a. Distinction between “real” figures and “nominal” figures in economics.
 - i. Real figures are adjusted for inflation
 - ii. Nominal figures measured purely in terms of current currency.
 - b. Most important nominal figure is *price level*.
 - i. Weighted average of dollar prices of all market goods and services in an economy at a given point in time.
 - ii. Add price of *everything* divided by number of units produced.
 - iii. Useful when comparing from one year to next; expressed as ratio of average prices in different years.
 - iv. Expressed as ratio of average prices in two different years.
 - v. Example
 1. Simple Economy: 50 widgets and 50 gizmos produced in each of two years.
 2. Year 1
 - a. Widget = \$5/ea, Gizmo = \$10/ea.
 - b. $((\$5 * 50) + (\$10 * 50)) / 100 = \$7.50$
 3. Year 2
 - a. Widget = \$7.5/ea, Gizmo = \$15/ea
 - b. $((\$7.50 * 50) + (\$15 * 50)) / 100 = \$11.25$
 4. Numbers alone aren't very interesting, but compared with each other prices can be seen to rise 50% from Year 1 to Year1
 - vi. Pick one year (arbitrarily) to be base year and set price level to be 1. Then change the ratio for the other year.
 - vii. Sustained increase is what's called inflation. Equates to sustained fall in the value of currency.
 - c. General rise in prices or general fall in value of currency
 - d. Prices that are rising outweigh the prices that are falling (id est, some individual prices may be lower, but the average weighted price is higher).
 - e. Deflation = Opposite. Sustained FALL in price level. NOT the same as disinflation (*rate* of inflation decreasing).
 - f. Prior to WWII, U.S. had alternating periods of inflation and deflation that essentially balanced out.
 - g. Since early 1950s, U.S. has had NO sustained deflation AT ALL. Only changes in the rate of inflation from about 2% to 10%.
 - h. Price level now much higher than prior to WWII – most people have come to feel it's normal.
- II. Measures of Inflation
 - a. Several indices used to gauge inflation. Most common are GDP Deflator and Consumer Price Index.
 - b. The GDP Deflator
 - i. Tool to net out effects of inflation from changes in GDP
 - ii. Survey producers to see how much their prices changed in the past year.
 - iii. Example 1

	1999	2000	Details
Nominal GDP	\$8.0 tr	\$8.8 tr	
GDP Deflator	1	1.1	Arbitrarily pick a year as base year; set GDP deflator to 1.
Real GDP	\$8.0 tr	\$8.0 tr	Translate GDP from other years to “Constant Dollars” benchmarked to the base year.

iv. Example 2

	1999	2000
Nominal GDP	\$8.0 tr	\$8.8 tr
GDP Deflator	1	1.05
Real GDP	\$8.0 tr	\$8.4 tr

v. Example 3

	1999	2000
Nominal GDP	\$8.0 tr	\$8.8 tr
GDP Deflator	1	.95
Real GDP	\$8.0 tr	~ \$9.3 tr

- vi. GDP Deflator > 1 means prices are higher. GDP Deflator < 1 means prices are lower.
 - vii. In principle accounts for *all* goods and services produced in the given economy, and only the prices of goods and services produced *in* the nation.
 - viii. Main problem with GDP Deflator is that it's not necessarily a good measure of the cost of living.
 - ix. Some goods not consumed by ordinary people are included – nuclear missiles, satellites, police services, etc.
 - x. Leaves out changes in imported items that may be commonly consumed – Japanese electronics, Chinese toys, Swiss watches, etc.
 - xi. Not particularly good measure of cost of living.
- c. Consumer Price Index.
- i. Probably most cited measure.
 - ii. Calculated by Bureau of Economic Statistics
 - iii. Designed to calculate cost of living.
 - iv. Measures prices of fixed basket of goods meant to represent “average” consumption of goods.
 - v. In principle, better measure than GDP deflator of cost of living.
 - vi. Includes imported goods widely consumed.
 - vii. Still has some flaws.
 - 1. Since includes only specific items, someone must determine what to include and what not.
 - a. If about 15% of income is used to buy food (meaning 15% weighting in CPI) *what* food items are included? Cookies? Beef?
 - b. Then, must include the *same* goods from year to year (brand, size, location, etc)
 - c. Doesn't account for changes in consumption over time.
 - i. Cell phones not included until ~1998
 - ii. Typewriters included long after they became obsolete.
 - 2. Doesn't differentiate between inflation-based change and quality-based change.
 - a. Quality shouldn't be counted toward inflation – better products are actually worth more.
 - b. Price of typical car up 1000% since 1960, but much safer, cleaner, more comfortable.
 - c. So how much of increase in price is due to inflation and how much for quality improvement?
 - d. Does *try* to account for this. Computers, for example, measured based on one unit of computing power.
 - e. Most quality adjustments aren't easy to quantify.
 - viii. Net effect of flaws is that CPI may overstate inflation by perhaps 1% or maybe more. Over a period of many years that becomes a very big difference!

1. An increase of 2% or less may represent stability.
 2. Big concern when dealing with Social Security, which adjusts payments based on inflation. Is the government throwing away money because of overestimated CPI figures?
 3. Either taxes will have to be raised, or benefits will have to be cut – neither very popular. Otherwise, money will run out around 2030 as the Baby Boom generation retires.
- d. Other measures exist (though many are variations on the CPI). CPI and GDP Deflator are the two most commonly cited.
- e. Underlying Trend CPI → CPI without goods prone to price wings: mainly oil and food.
- III. Causes of Inflation?
- a. Demand-Pull
 - i. Arises when people want to buy more stuff than the economy can produce.
 - ii. If demand goes up when it's not feasible to produce more with existing technology, prices rise.
 - b. Supply-Push or Cost Push
 - i. Input price increases or something raises the cost of production.
 - ii. Higher production cost across a range of firms means the cost will be passed to consumers.
 - iii. Oil shocks in 1970s (quadrupling of oil prices due to OPEC protesting US policy toward Israel) affected most industries – transporting goods, etc.
 - c. "Printing Money"
 - i. *Not* always just physically printing money!
 - ii. Why issue too much money?
 1. Government might want to stimulate sluggish economy.
 2. Most common reason is to pay for government expenditures in excess of tax revenues. Only a few ways to do that:
 - a. Pillage and Loot neighboring countries (formerly very popular). Axis powers in WWI funded the war this way.
 - b. Borrow difference by issuing bonds. The respectable way in modern society.
 - c. Just print money and use that to finance deficits.
 - iii. A unit of currency will buy a smaller basket of goods than before the increase.
 1. If society produces 1000 widgets with \$500 circulating in the economy, \$1 can purchase 2 widgets. If another \$500 is added to circulation, \$1 can purchase only one widget.
 - iv. Seigniorage → Privilege of sovereign government to finance expenditures by increasing the money supply.
 - v. Called "Inflation Tax." Takes purchasing power away from public, gives it to the government. Since the public holds the vast majority of the money, vast majority of cost is absorbed by the public.
 - vi. In nations experiencing hyperinflation, seigniorage is usually the cause.
- IV. Hyperinflation
- a. Extremely severe rates of inflation. No official threshold (100%? 1000%? Higher?)
 - b. Extreme example: Weimar Germany (between WWI and WWII), price of newspaper rose from .3 marks to 70 million marks between 1921 and late 1923.
 - c. Defining feature of hyperinflation is not a number, but the psychological effect. People begin devoting huge amounts of time to managing currency's loss in value.
 - i. Nobody wants to hold currency anymore – rush to convert as quickly as possible to goods with more durable values (including foreign currencies).
 - ii. Extracts huge toll on investment, innovation, etc, since efforts are all in bookkeeping.
 - iii. People with wheelbarrows of money to buy groceries.
 - iv. Children using bricks of currency as blocks, since the currency was worth less than the cost of the wood to make "real" blocks.

- v. People entering a bar and buying all their beer at once, so they wouldn't have to pay the higher price for the beer when they left.
 - vi. Shops begin to accept only foreign currencies.
 - d. Can only start with an increase in the money supply.
 - e. Devastating effect on the economy. No time left for long-term planning. Extraordinarily damaging.
- V. Social Costs of Modest Inflation
 - a. Not hyperinflation, but 3% or 4%
 - b. Probably not much cost!
 - c. Myth: Inflation gradually reduces real incomes. False! Incomes and prices tend to change in synch.
 - d. Some people will have a problem with modest inflation, for example workers retired on pensions set in terms of nominal dollars. Not a problem for most people though.
 - e. Steady, modest inflation has very few serious costs.
 - f. Some inconveniences (see Mankiw book) but not problems threatening economic life.
 - g. Interest Rate Definitions
 - i. Nominal interest rate → Percentage returned on loaned funds.
 - ii. Real interest rate → Percentage increase in real purchasing power.
 - iii. Real interest rate = Nominal Interest Rate – Inflation Rate.
 - h. Erratic or unexpected inflation (even at modest levels) *can* be a problem.
 - i. Unpredictability (common at rates above 10%) is bad.
 - ii. Arbitrarily redistributes wealth among individuals, making long-term plans difficult.
 - iii. In presence of erratic inflation, saving becomes riskier
 - iv. If funds loaned at 5% nominal interest with 0% inflation and then inflation jumps to 5%, there's no return on loaned funds.
 - v. Distorts credit markets, redistributes wealth arbitrarily.
 - vi. If inflation is steady and predictable, interest rates can simply adjust to it. Not possible if inflation can't be predicted.
 - i. Why not index loan contracts to inflation?
 - i. Sometimes we do. Especially in countries with a history of inflation problems.
 - ii. Variable rate loans in US, for example.
 - iii. Indexed contracts have their own problems.
 1. Which measure of inflation to use?
 2. What happens if inflation swings out of the expected range?
 3. How often should the inflation rate be measured and the interest rate adjusted?
 4. Transition to indexed system would be very difficult.
 5. Moral Hazards. Gives an incentive to not worry about inflation (wouldn't care about 6% if already indexed to 3%). Rate could creep up to potentially hyperinflation.
 - j. Creates uncertainty. Capitalist markets don't like risk and uncertainty.