

1. What are the four macroeconomic agents? What are the three markets in which the agents interact?

- 1. Households
 - 2. Firms
 - 3. Government
 - 4. The rest of the world
- 3 markets : 1) Labor market
 - 2) Good & service market
 - 3) Money market

2. What is sticky price? Explain why price may be sticky.

- Sticky price : The price that adjusts slowly to the equilibrium.
 : Price of goods & services don't change rapidly.
- The price maybe sticky or not depends on minimum wage policy, employment contract and labor union

3. Explain the four main categories of unemployment.

1. Frictional unemployment - unemployment as a result of short-run job skill matching problems.
 - included people who just enter the labor force and looking for job.
 e.g. college student who just graduated
2. Structural unemployment - People that lose job from the result of changes in the structure of the economy in significant industries.
 - Advanced technology : the industry use the robot or machinery instead of worker.
 - Change job location
3. Cyclical unemployment - People that lose job from fluctuations in business cycles or recession.
 - Not enough demand for goods & services
4. Seasonal unemployment - Unemployment due to changing seasons
 - There are low season & high season, people might lose their job in low season.

4. Classify the following events into the categories of unemployment.

- Some friends just graduated from college and have been looking for jobs.
 Frictional unemployment
- Christine lost her job as a biologist at a biotech-company when the whole industry went into recession. Cyclical unemployment
- Gerhard, who used to be a taxi driver, stopped looking for a job three months after he lost his job.
 not in labor force
- Dirk used to work as a wooden-doll maker. Now all kids want plastic dolls, so he is out of work.
 structural unemployment
- The hotel part-timers were laid off during low season.
 seasonal unemployment
- Aditi, a high-tech engineer, just decided to quit her job; she is being interviewed for a better-paid job in a multinational company.
 Frictional unemployment
- A man lost his job as a public reader as literacy has increased in his village.
 structural unemployment

5. Suppose there are 100 people in labor force and 60 people currently in employment. Find the unemployment rate. Can we find labor force participation rate? If not, what information do we need?

$$\begin{aligned} \text{unemployment rate} &= \frac{\text{Unemployed}}{\text{Employed} + \text{Unemployed}} \\ &= \frac{U}{FF} = \frac{40}{100} = 0.4 = 40\% \end{aligned}$$

\therefore unemployment rate is 40

- We cannot find labor force participation rate because we need to know the amount of population 16 years old or older.

6. What is the discouraged-worker effect? How can it affect the unemployment rate?

- Discouraged-worker effect \Rightarrow Unemployed people who want work but cannot find jobs become give up to find a job.
 \Rightarrow Not including in the calculation of unemployment rate because they're not in labor force.
- It affects the unemployment rate because unemployment rate is calculate by using amount of unemployed people and amount of labor force, if there are any discouraged worker effect the amount of labor force will decrease and the unemployment-rate will change.

7. On average, nations in Europe pay higher unemployment benefits for longer periods of time than the US. How would this affect the unemployment rates in these nations? Explain which type of unemployment is most directly affected.

- Europe have more unemployment the the US, because unemployment get more benefit for a long period.
- It'll lead to frictional because people don't have a job but they still get money.

8. What is inflation? It is often said that inflation reduces one's purchasing power, and hence inflation is bad. How can inflation reduce one's purchasing power? Is there a case where inflation may not be bad?

- Inflation \Rightarrow An increase overall price level of goods & services over some period of time.
 \Rightarrow When people get higher income, the goods & services will become more expensive.
- Inflation reduce's one purchasing power is bad depend that has fixed wage condition.
- Inflation may not be bad if there's not fixed wage.

9. Who - lender or borrower - is better off, given unanticipated deflation? Explain with examples.

- lender is better off
- example \Rightarrow 2020 : A borrow \$10 from B, A can buy 5 pens (rate 3%)
 2021 : A give \$10 back to B, B can buy 10 pens (rate -2%)

10. When inflation is anticipated, what will the central bank do with the interest rate?

(Hint: Fisher Equation)

- The central bank will set higher nominal interest rate to the borrower.
- The central bank (lenders) can use the Fisher Equation to decide what interest rate they should charged

$$\text{Fisher Equation} : i = r + \pi$$

$\underbrace{\quad}_{\text{nominal interest rate}} = \underbrace{\quad}_{\text{real interest rate}} + \underbrace{\quad}_{\text{inflation rate}}$

11. The CPI is 120 in year 1 and 150 in year 2. All inflation is anticipated. If the bank charges an interest rate of 30%, what is the bank's real interest rate?

$$i = r + \pi$$

$$30 = r + 25$$

$$r = 5$$

$$\pi = \frac{\text{new-old}}{\text{old}} = \frac{150-120}{120} = 25$$

$\pi = \text{inflation rate}$
 $i = 30$
 $r = ?$

∴ The bank's real interest rate is 5

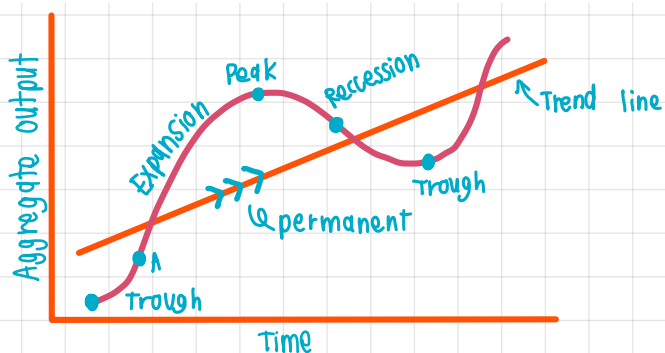
12. Explain why inflation is necessary to a growing economy with reference to the money supply.

- Inflation will increase value of money, make people want to do an investment. When people have money and they want to spend money, the seller also wants to sell; Demand will increase and make the economy grow up.

13. What are the two administrative costs of inflation? Explain.

- 1) Menu cost - cost from changing menus/price lists frequently.
- 2) Shoes leather cost - When the interest rates are high, the opportunity cost of holding cash outside the bank is high.

14. Draw a diagram of business cycles and the trend line. Label the four phases of business cycles. Answer the following questions.



1. Which phase do you expect to see inflation?
- Expansion, Peak

2. Which phase do you expect to see high unemployment?
- Recession, Trough

3. Which phase should the government use expansionary policy? Give example.
- Recession, Trough - This 2 phases going down too much, govt. should bring them up nearly the trend line.

4. Which phase should the government use contractionary policy? Give example.
- Expansion, Peak - This 2 phases also going up too much, govt should make them come down for less fluctuation.

5. What factor determine the trend line?
- quality and quantity of factors of productions.

FoP: 1) Land

2) Labor

3) Capital

4) Entrepreneurship

} if FoP is good
the trend line
will go up ↑

15. An article states that capital stock and labor force are both increasing at an annual rate of 7%. The same article also states that real output is growing by 11%. Explain why this is possible.

- It is possible because the machinery or worker have more productivity by developed technology so they will get more output.