

Exercise 1

Introduction to Macroeconomics

1. What are the four macroeconomic agents? What are the three markets in which the agents interact?
2. What is sticky price? Explain why price may be sticky.
3. Explain the four main categories of unemployment.
4. Classify the following events into the categories of unemployment.
 - Some friends just graduated from college and have been looking for jobs.
 - Christine lost her job as a biologist at a biotech-company when the whole industry went into recession.
 - Gerhard, who used to be a taxi driver, stopped looking for a job three months after he lost his job.
 - Dirk used to work as a wooden-doll maker. Now all kids want plastic dolls, so he is out of work.
 - The hotel part-timers were laid off during low season.
 - Aditi, a high-tech engineer, just decided to quit her job; she is being interviewed for a better-paid job in a multinational company.
 - A man lost his job as a public reader as literacy has increased in his village.
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?
6. What is the discouraged-worker effect? How can it affect the unemployment rate?
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.

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?
9. Who – lender or borrower – is better off, given unanticipated deflation? Explain with examples.
10. When inflation is anticipated, what will the central bank do with the interest rate? (Hint: Fisher Equation)
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?
12. Explain why inflation is necessary to a growing economy with reference to the money supply.
13. What are the two administrative costs of inflation? Explain.
14. Draw a diagram of business cycles and the trend line. Label the four phases of business cycles. Answer the following questions.
 - Which phase do you expect to see inflation?
 - Which phase do you expect to see high unemployment?
 - Which phase should the government use expansionary policy? Give example.
 - Which phase should the government use contractionary policy? Give example.
 - What factors determine the trend line?
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.

1. household, firms, government and the rest of the world
 - goods and services market, labor market, money market
- 2 price adjusts slowly to the equilibrium, due to minimum wage policy, employment contract and labor union
- 3 frictional unemployment - Job skill matching problems
 - Just enter labor forcestructural unemployment - more people seeking jobs
 - cyclical unemployment - unemployment arises from the downturns of business cycleseasonal unemployment - changing in season
- 4 Frictional, cyclical, structural, structural, seasonal, frictional, structural
- 5 40%, can't find labor force participation because don't have the whole number of population

6 Sometimes, people who want to work but cannot find jobs become discouraged and stop looking for work.

- Unemployment rate increase (actual)

7 Unemployment rate Europe > US

- Voluntary unemployment

8 - An increase in the overall price level

- Income of people stay the same but the price level of goods and service increase, which make it become less affordable

- The actual value become more expensive to buy

- Change to full-filled capacity

9 lender will get better off because lender received back has more pp. more than they expected it to be when they loan it out due to decrease in overall price level

2019 : lender \rightarrow \$10 \rightarrow borrower can buy 5 apples ($r=3\%$)

2020 : lender \rightarrow \$10 \rightarrow can buy 10 apples ($r = -2\%$)

10 When inflation rate is high, banks will set higher nominal interest rate. otherwise, real interest rate will become negative, and we one will deposit money in the bank.

11 find $\pi = \frac{150-120}{120} = \frac{1}{4} = 25$

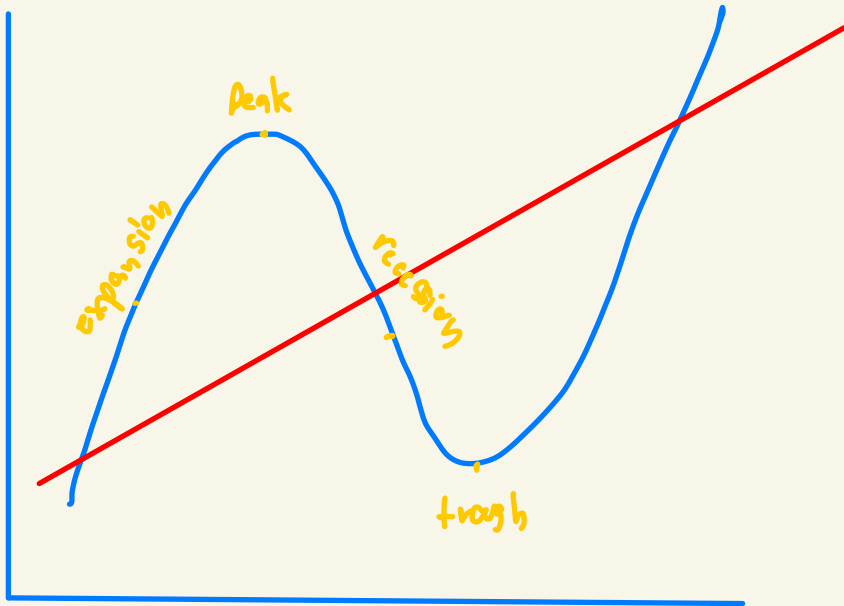
$30 = r + 25$, $r = 5$

12 Growing economy \rightarrow more transaction \rightarrow demand for \uparrow currency
print money \uparrow Inflation \uparrow

13 Menu cost - firms are forced to change prices more often than they would if the aggregate price level was more or less stable

Shoe - leather cost - the increase cost of transaction caused by inflation

14



- peak & recession
- trough & recession
- recession & trough
- expansion & peak
- quality + quantity of labor and capital

15 possible because the result of increased output per worker due to higher productivity