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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 (employed+unemployed) and 60 people currently in $\boxed{\text{employment}}$. Find the unemployment rate. Can we find labor force participation rate? If not, what information do we need?

   $\frac{\text{unemployed}}{\text{labor force}} = \frac{40}{100} = 0.4 = 40\%$

   ↳ $\frac{\text{labor force}}{\text{population}}$; we cannot find bc we need to know the population first
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?

unexpected.

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.

real GDP(?)

1) 4 Macro agents
- Household
- Firms
- Government
- The rest of the world

3 markets that these agents interact
- The Goods & Services market
- The labor Market
- The Money Market (financial)

2) Sticky price
- Price adjusts slowly to the equilibrium due to the minimum wage policy, unemployment rate, labor union

3) Frictional unemployment
- short term
- unemployment when people are looking or switching for jobs.

Structural unemployment
- causing by the change in structure, change in demand for labor skills.

Cyclical unemployment
- causing by the fluctuations in business cycle.
- unemployment during covid, recession

Seasonal unemployment
- due to the change in seasons.

4) - frictional unemployment
- cyclical unemployment
- NOT in a labor force → discouraged-worker effects
- Structural unemployment
- Seasonal unemployment
- frictional unemployment
- Structural unemployment

5) - Unemployment rate

$$\rightarrow \frac{\text{unemployment}}{\text{labor force}} = \frac{40}{100} = 0.4 = 40\%$$

- we cannot find labor force participation rate because we don't have population

6) Discouraged-worker effect happens when workers stop looking for a job. They exit the labor force. It can affect the unemployment rate because these workers won't be classified as 'unemployed' so the unemployment rate falls.

7) - In Europe, unemployment rate will get higher than US because of the higher money they get from goverment make people's willing to find job decreased.

- affect frictional unemployment.

8) - Inflation is an increased in overall price level.

- It can decrease the purchasing power of money if the cost of goods and services is higher but our wages are still fixed. It means you are now able to buy less with your money.

- Inflation can be good. It can boost up the economy. More money in the economy can increase the spending and aggregated demand. People have more money to spend.

9) Being lender during an unanticipated deflation is better off because the lender will have more purchasing power. The money getting back from the borrower can buy more because during deflation the price of goods and services decreased.

now : 100 ฿ ~ 4 apples ⇒ 25 ฿ / each
deflation: 100 ฿ ~ 5 apples ⇒ 20 ฿ / each

10) The bank will charge higher interest rate during anticipate inflation

Fisher Equation : $i = r + \pi$ if $i \uparrow$, $\pi \uparrow$

$i \downarrow$, $\pi \downarrow$ → inflation rate

→ rate that bank uses

11) CPI $Year_1 = 120$, $Year_2 = 150$

→ CPI = $\frac{new - old}{old} = \frac{150 - 120}{120} = \frac{30}{120} = 0.25 = 25\%$

→ inflation

real interest

→ $r = I - \pi$

rate that bank uses → inflation rate

$r = 30\% - 25\% = 5\%$

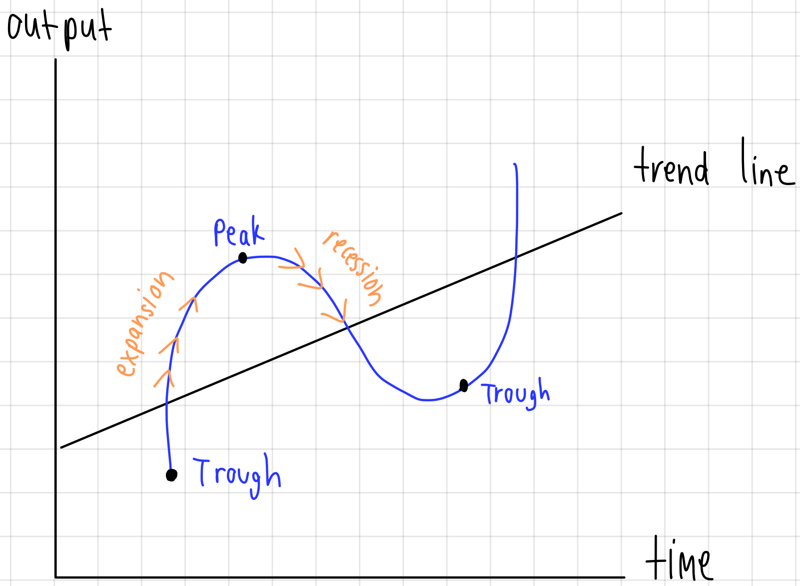
∴ bank's real interest rate = 5%

12) Inflation is necessary to a growing economy because the central bank will print more money so the money supplies increased. People want to spend more and the firm's willing to produce will also increased.

13) 'menu cost' is a cost from changing prices incurred by firms

'shoe leather cost' is a cost of time and effort that people expend because they don't want to hold cash outside the bank.

14)



14.1) During the 'Peak', Inflation might occurs.
14.2) During the 'Trough', There will be a high unemployment.
14.3) Goverment should use the 'expansionary fiscal policy' during the recession and trough to boost the economy.
e.g. tax cuts, increased goverment spending
14.4) Goverment should use the 'contraction fiscal policy' during the expansion and peak to slow down the economy because growing to fast can caused inflation.
e.g. raising tax, reduce goverment spending
14.5) Trend line depends on the quality and quantity of FOP.

15) When the capital stock and labor force increasing at the annual rate, the real output growth will also increase because the productivity is increased.