CB2402 - Exercises

Assignment 1

1. You expect a share of EconNews.Com to sell for $65 a year from now. If you are willing to pay $65.74 for one share of the stock today, and you require a return of 8 percent, what dividend payment must you expect to receive from the stock?

$$65.74 \times 1.08 = 65 + D \Rightarrow D = 5.9992$$

Answer: $6.00

2. Suppose that the total expenditures for a typical household in 2018 equaled $2,500 per month, while the cost of purchasing exactly the same items in 2020 was $3,000. If 2018 is the base year, the CPI for 2018 equals [] and the CPI for 2020 equals [].

Answer: 100, 120

3. Pat earns $1,000 per week and spends $850 per week on living expenses, puts $50 in a savings account, and buys $100 worth of shares in a stock mutual fund. Pat's savings are [], and Pat's saving rate is [].

Saving = Income - Current Consumption = $1,000 - $850 = $150

Saving Rate = Saving / Income = $150 / $1,000 = 15%

Answer: $150, 15%

4. An increase in the price of the output produced by labor will

Answer: increase the demand for labor

5. The extra costs incurred to avoid holding cash when there is inflation are called the

Shoe leather costs is the cost of time and effort involved in frequent trips to the bank to deposit cash, to minimze the inflation tax that they pay on cash holdings.

Answer: shoe leather costs

6. If the principal amount of a bond is $10,000,000, the coupon rate is 7 percent, and the inflation rate is 4 percent, then the annual coupon payment made to the holder of the bond is

$$10,000,000 \times 0.07 = \$700,000$$

Inflation does not affect the coupon payment; it only affects the buying power of the coupon payment.

Answer: $700,000

7. Firms will invest in new equipment whenever

- the expected cost of the equipment is less than the expected benefit.
- the expected cost of the equipment is greater than the value of the marginal product of the equipment.
- public saving is greater than private saving.
- the expected cost of the equipment exceeds the expected benefit.

Answer: the expected cost of the equipment is less than the expected benefit.

8. Assume an economy produces only hamburgers and hot dogs and the base year is 2020.

	Q 2019	Q 2020	P 2019	P 2020
Hamburgers	2,000	3,000	$2	$3
Hot dogs	3,000	4,000	$1	$1.50

Nominal GDP in 2020: $3,000 \times \$3 + 4,000 \times \$1.50 = \$15,000$

Since the base year is 2020, the real GDP in 2020 is the same as the nominal GDP.

Answer: $15,000

9. Two groups of workers not counted as unemployed in the official unemployment statistics are [] workers. (Choose 2)

- chornically unemployed
- discouraged
- involuntary part-time
- short-term unemployed

Note involuntary part-time workers are counted as employed; discourage workers are not included in the labor force.

Answer: discouraged, involuntary part-time

10. The price of a gallon of gasoline at the pump increased by 5 percent at the same time that the inflation rate was 10 percent. The nominal price of gasoline [], and the real price of gasoline [].

Answer: increased; decreased

11. Holding other factors constant, if a tax increase moves the government budget from deficit to surplus, then the real interest rate will [] and the equilibrium quantity of national saving and investment will [].

Budget surplus means that the government is saving more than it is spending, which increases the supply of loanable funds, which decreases the real interest rate and increases the equilibrium quantity of national saving and investment.

12. A drawback of using market values to aggregate the quantities of goods and services produced in an economy is that

- not all economically valuable goods and services are bought and sold in markets.
- GDP increases when not all goods are produced in greater quantities.
- higher-priced items count more.
- market prices generally reflect the economic benefit consumers expect to receive from an item.

Answer: not all economically valuable goods and services are bought and sold in markets.

13. If real GDP per person were equal to $2,000 in 1900 and grew at a 1 percent annual rate, what would be the value of real GDP per person 100 years later?

$2,000 \times 1.01^{100} = \$5,409.63$

Answer: $5,410

14. A labor union negotiates a 3-year contract with the following terms: The starting wage is $25 per hour in 2024, with annual wage adjustments based on 80% of the CPI increase. If the CPI increases by 5% in 2024 and 4% in 2025, what will be the hourly wage in 2026?

2025: $25 \times (1 + 0.05 \times 0.8) = 25 \times 1.04 = 26$

2026: $26 \times (1 + 0.04 \times 0.8) = 26 \times 1.032 = 26.832$

Answer: $26.83

15. Which of the following is an example of cyclical unemployment?

- George is an unskilled worker who mows lawns in the summer but is unemployed the rest of the year.
- Dora lost her job when the textile factory closed. She does not have skills to work in another industry and has been unemployed for over a year.
- Malia had a job as an engineer but quit when her spouse was transferred to another state. She looked for a month before finding a new job that she liked.
- Hector was laid off from his job with the airline because the recession reduced demand for airline travel. He expects to get his job back when the economy picks up.

A is the seasonal employment due to the nature of the job being only available during the summer. B is the structural unemployment due to the lack of skills to work in another industry. C is the frictional unemployment due individuals are temporarily unemployed during the transition between jobs. D is the cyclical unemployment due to the business cycle.

Answer: D

16. Suppose the following information describes a closed economy:

- GDP = 2,000
- C = 1,500
- G = 300
- T = 400

Private saving equals []; public saving equals []; national saving equals [].

$Y = C + I + G + NX$, GDP = Current Consumption + Investment + Government Spending + Net Exports

$S = Y - C - G$, National Saving = GDP - Current Consumption - Government Spending

$S_s = Y - C - T$, Private Saving = GDP - Current Consumption - Taxes

$S_p = T - G$, Public Saving = Taxes - Government Spending

Answer: 100, 100, 200

17. Based on the accompanying table and assuming that returns to capital are positive but diminishing, then total packages wrapped when a fourth machine is installed must be [] packages.

Machines	Total Packages Wrapped
1	100
2	130
3	140

Answer: less than 150

18. Real GDP per person equals average labor productivity times

$\frac{Y}{POP} = \frac{Y}{N} \times \frac{N}{POP}$

where Y = Real GDP, POP = Population, N = Number of workers

$\frac{Y}{N}$ = Average labor productivity, $\frac{N}{POP}$ = the share of population employed

Answer: the share of population employed

Note that $\text{Labor force participation rate} = \text{Labor force} \div \text{Working-age population}$

$\text{Employment Rate} = \text{Employed} \div \text{Labor force}$

Do not confuse with $\text{Population employed\%} = \text{Employed} \div \text{Population}$

19. Given the following data for the economy, compute the value of GDP.

First classify each into one of the GDP categories: C, I, G, X, IM or none.

- Government purchases = 10 (G)
- Consumption expenditures = 120 (C)
- Exports = 5 (X)
- Imports = 12 (IM)
- Change in inventories = -7 (I)
- Construction of new homes = 15 (I)
- Sales of existing homes = 22 (none)
- Government payments to retirees = 17 (none)
- Business fixed investment = 9 (I)
- Households purchases of durable goods = 20 (C)

Y = C + I + G + NX

- C = 120 + 20 = 140
- I = -7 + 15 + 9 = 17
- G = 10
- NX = X - IM = 5 - 12 = -7
- Y = 140 + 17 + 10 - 7 = 160

Answer: 160

Remarks: housholds purchases of new homes are not included in GDP. The value coming from construction of new homes is included in GDP as Investment.

20. Saving for protection against unexpected setbacks—such as the loss of a job or a medical emergency—is called [] saving.

Answer: precautionary

21. A consumer expenditure survey reports the following information on consumer protein spending:

	P 2019	Q 2019	P 2020	Q 2020
Fish	$5	5	$7	7
Chicken	$3	10	$4	12
Beef	$6	7	$5	10

Using 2019 as the base year, by how much does a "cost of protein" index increase between 2019 and 2020?

When computing CPI, base quantity is used.

For 2019: $\sum P_{2019}Q_{2019} = 5 \times 5 + 3 \times 10 + 6 \times 7 = 25 + 30 + 42 = 97$

For 2020: $\sum P_{2020}Q_{2019} = 7 \times 5 + 4 \times 10 + 5 \times 7 = 35 + 40 + 35 = 110$

Percentage change in cost of protein index = $\frac{110-97}{97} \times 100 = 13.4\%$

22. The country of Northland produced $1,000 billion of output in one year. The population of Northland was 50 million, of whom 30 million did not have jobs. What was average labor productivity and GDP per capita in Northland?

Average labor productivity $\frac{Y}{N} = \frac{1{,}000b}{20m} = 50,000$

GDP per capita $\frac{Y}{POP} = \frac{1{,}000b}{50m} = 20,000$

Answer: 50,000, 20,000

23. If a borrower and lender agree to an interest rate on a loan when inflation is expected to be 7 percent and inflation turns out to be 10 percent over the life of the loan, then the borrower [] and the lender [].

Answer: gains; loses

24. A trade deficit occurs when

- government spending exceeds government revenue.
- exports are less than imports.
- exports exceed imports.
- government revenue exceeds government spending.

Net trade = Net exports (NX) = Exports - Imports

Answer: exports are less than imports.

25. If the minimum wage is increased, holding other factors constant, then the number unemployed [] and the number employed [].

~~Answer: strictly increases; strictly decreases~~

Answer: weakly increases; weakly decreases

26. The accompanying table provides information about production at the XYZ-TV Company.

No of workers	Value of Marginal Product
1	$35,000
2	$33,000
3	$31,000
4	$29,000
5	$27,000

How many workers will XYZ-TV Company hire if the going wage for TV production workers is $36,000?

Answer: 0

27. If a pizza maker pays $2 for tomatoes, $3 for cheese, $3 for dough, and sells the pizza made with these ingredients for $12, what is the value added of each pizza?

Value added = Revenue - Cost of intermediate goods

Answer: $4

28. In analyzing the slow economic growth of low-income countries, which combination of factors most directly impacts the accumulation of physical capital and the development of entrepreneurship?

- Poor healthcare and political instability
- Low investment and public health issues
- Wars and poor public education
- Low rates of saving and weak rule of law

Low rates of saving implies high current consumption, which reduces the amount of saving available for investment. Weak rule of law implies that property rights are not well protected, which discourages entrepreneurship.

Answer: Low rates of saving and weak rule of law

29. The marginal product of labor is the additional

Answer: output produced by one more worker

30. The substitution bias in the CPI refers to the failure of statisticians to

- take into account improvements in goods and services.
- allow for the possibility that consumers switch from products whose prices are rising.
- take into account new products purchased by consumers.
- allow for the possibility that consumers switch stores at which they shop.

Answer: allow for the possibility that consumers switch from products whose prices are rising.

Midterm Selected Questions

1. What causes the labor supply curve to shift to the right?

- Increase in working-age population
- Increase in unemployment benefits
- Decrease in wages
- Decrease in job opportunities

Since labor supply curve is upward sloping, a shift to the right means Q_s increases at each wage level, i.e. more workers are willing to work at each wage level.

This can happen if the overall working-age population increases; the unemployment benefits decrease, which urges more people to work; the wages decrease, which makes working less attractive; or the job opportunities increase, which means more people can be hired.

Answer: Increase in working-age population

2. What is a significant factor contributing to increased wage inequality in the US?

- Globalization resulting in competition from low-wage countries
- Equal demand for all skill levels in the labor market
- Increased job security for low-skilled workers
- Government policies promoting wage equality

(1) Increased competition from low-wage countries means US low-skilled workers must be paid less to compete with foreign workers. (2) A higher demand for high-skilled workers increases their wages.

(1) and (2) combined lead to increased wage inequality.

Answer: Globalization resulting in competition from low-wage countries

3. In 2018, Crown Motors, an automobile dealership, spent $10,000 on new tools for its repair shop, $20,000 on new computers for its sales division, and $100,000 on government bonds. Unsold cars and trucks were valued at $100,000 on January 1, 2018 and unsold cars and trucks were valued at $200,000 on December 31, 2018. What is Crown Motors' contribution to the investment component of GDP 2018?

- fixed investment: $10,000+$20,000 = $30,000
- inventory investment: $200,000-$100,000 = $100,000

Answer: $130,000

Note that the purchase of government bonds does not contribute to GDP, as financial assets are NOT considered final goods and services.

However, if the government later uses the money on public goods and services, then it will contribute to GDP in the G component.

4. A government policy that allows retirement savings to accumulate tax-free is an example of a policy to promote economic growth by

- increasing human capital.
- increasing physical capital.

- improving technology.
- increasing the availability of natural resources.

Physical capital refers to the tools, machines, and structures used in production. Tax-free retirement savings allow individuals to save more money, which can be used to invest in physical capital.

Answer: increasing physical capital.

5. Suppose the legal working age is 16. In a small town of 100 people, there are 10 children under 16, 10 retired people, 60 people with full-time jobs, 3 people with part-time jobs, 3 full-time students over 16, and 4 full-time homemakers. The remaining people did not have jobs but wanted jobs. What is the unemployment rate in this town?

- Working-age population = 100 - 10 - 10 = 80
- Not-in-labor-force = 3 (FT students) + 4 (FT homemakers) = 7
- Labor force = 80 - 7 = 73
- Employed = 60 (FT jobs) + 3 (PT jobs) = 63
- Unemployed = 73 - 63 = 10
- Unemployment rate = $\frac{10}{73} \times 100 = 13.7\%$

Answer: 13.7%

6. If there is a floor on wages created by a minimum wage, union contracts, or other factors, then a decline in the marginal productivity of low-skilled workers will [] the demand for low-skilled workers and [] the number of unemployed workers.

- Minimum wage increases and is higher than the equilibrium wage.
- Labor demand at minimum wage is reduced, compared to at equilibrium wage.
- More workers are unemployed.

Answer: decrease; increase

7. A war destroys much of the capital stock in the country of Omega. As a result, holding other factors constant, the real wage in Omega will [] and employment in Omega will [].

- The destruction of capital stock reduces the productivity of labor, which decreases the real wage.
- With lower productivity, firms will hire fewer workers, which increases unemployment.

Answer: decrease; decrease

8. Talyor has the following assets and liabilities:

- House: $400,000
- Mortgage: $300,000
- Two cars: $15,000
- Cash: $1,000
- Car loans: $5,000
- Checking account balance: $3,000
- Credit card balance: $3,000

Suppose that Taylor receives a $10,000 bonus from work. If Taylor uses the bonus to pay off the mortgage, then Taylor's net worth will be []; if she puts the bonus in a savings account, then Taylor's net worth will be [].

- Net worth = Assets - Liabilities
- Assets = House $400,000 + Two cars $15,000 + Cash $1,000 + Checking account balance $3,000 = $419,000
- Liabilities = Mortgage $300,000 + Car loans $5,000 + Credit card balance $3,000 = $308,000
- Net worth = $419,000 - $308,000 = $111,000

Answer: $121,000; $121,000

By receiving a $10,000 bonus, her net worth increases by a total of $10,000. Increasing assets and decreasing liabilities have the same effect on wealth.

9. Crowding out is the tendency for increased government deficits to

- reduce investment spending.
- increase infrastructure spending.
- reduce government spending.
- increase consumption spending.

When the government runs a deficit, it borrows money from the public, which increases the demand for loanable funds. This increases the interest rate, which reduces investment spending (Because firms borrow money to invest in new capital, which uses a loan rate = interest rate. Since the interest rate increases, the cost of borrowing increases, which discourages investment).

Answer: reduce investment spending.

10. The opportunity cost of capital investment is the

- value of the marginal product of capital.
- value of the marginal product of labor.
- real interest rate.
- price of new capital goods.

When a firm makes capital investment, it forgoes the opportunity to invest in other projects or to lend the money to someone else. The opportunity cost of capital investment is the real interest rate, which is the return that the firm could have earned by lending the money to someone else.

Answer: real interest rate.

11. The loanable funds market is in equilibrium as shown in the figure below. A technological change that increases the profitability of new investment could result in which of the following combinations of the real interest rate and quantity of loanable funds at a new equilibrium?

Base equilibrium: $r_0 = 4\%, Q_0 = 120$

When the profitability of new investment increases, the demand for loanable funds increases, shifting the demand curve to the right. The new equilibrium will have a higher real interest rate and a higher quantity of loanable funds.

Answer: $r_1 > 4\%, Q_1 > 120$

12. Major macroeconomic questions include all of the following except

- What causes economic growth?
- What causes differences in wages between men and women?
- Why does inflation vary over time and across countries?
- What are the causes of unemployment?

Answer: What causes differences in wages between men and women

Assignment 2

1. Higher nominal interest rates __ the amount of money demanded and higher real income __ the amount of money demanded.

Answer: decrease; increases

- Higher i = higher incentive to invest = higher opportunity cost of holding money = lower demand for money
- Higher Y = more transactions = higher demand for money

2. In the long run, output gaps are eliminated by

- increasing potential output.
- increased efficiency in labor markets.
- price changes.
- reducing potential output.

Answer: price changes.

When $Y < Y^*$, there is a recessionary gap. Low demand leads to downward pressure on wages and prices, reducing costs and shifting SRAS to the right, increasing output.

When $Y > Y^*$, there is an inflationary gap. High demand drives up wages and prices, increasing costs and shifting SRAS to the left, reducing output.

3. A higher real interest rate __ saving and __ consumption spending.

Answer: increases; decreases

When the real interest rate increases, the opportunity cost of current consumption increases, leading to an increase in saving and a decrease in consumption spending.

Additionally, higher interest rates also increase the cost of borrowing, which further discourages consumption spending.

4. If geopolitical tensions cause a sudden spike in global oil prices while, simultaneously, a stock market crash significantly reduces household wealth and consumer spending, which of the following describes the shifts in aggregate demand and aggregate supply?

- AD curve shifts left, SRAS curve shifts downward; leading to lower output and lower price level
- AD curve shifts right, SRAS curve shifts upward; higher price level with indeterminate output
- AD curve shifts left, SRAS curve shifts upward; recession with rising inflation
- AD curve shifts left, SRAS curve shifts upward; resulting in lower output and indeterminate price level

Answer: AD curve shifts left, SRAS curve shifts upward; recession with rising inflation

Global oil prices increase = higher production costs = SRAS shifts upward = lower output

Stock market crash = lower consumer wealth = lower consumption = AD shifts left = lower output

lower output + rising prices = recession with rising inflation

5. The direct trade of goods and services for other goods and services is called

Answer: barter

6. There is $5,000,000 of currency in Econland, which are all held by banks as reserves. The public does not hold any currency. If the banks' desired reserve/deposit ratio is 0.25, then the money supply equals

Answer: $20,000,000

Money supply = Public cash + Bank deposits / RDR

= $5,000,000 / 0.25 = $20,000,000

7. According to Okun's law, each extra percentage point of __ unemployment is associated with a __ widening of a negative output gap, measured in relation to potential output.

Answer: cyclical; 2 percent

$\frac{Y-Y^*}{Y^*} \approx -2 \cdot (u - u^*)$

where Y = actual output, Y^* = potential output, u = actual unemployment rate, u^* = natural unemployment rate.

8. This economy has a short-term equilibrium at point A. In response to gradually falling inflation, this economy will eventually move from its short-run equilibrium to its long-run equilibrium. Graphically, this would be seen as

- aggregate demand shifting rightward.
- aggregate demand shifting leftward.
- long-run aggregate supply shifting leftward.
- short-run aggregate supply shifting downward.

Answer: short-run aggregate supply shifting downward.

SRAS curve is a horizontal line at $\pi = \pi_0$. When inflation falls, the SRAS curve shifts downward to $\pi = \pi_1 < \pi_0$.

9. Any target value of the nominal interest rate chosen by the Federal Reserve implies a specific value for

- the money supply.
- government purchases.
- potential output.
- the budget deficit.

Answer: the money supply.

The $M - i$ curve shows the relationship between the money supply and the nominal interest rate. It is downward sloping because a higher nominal interest rate reduces the quantity of money demanded.

10. Starting from potential output, if firms become more optimistic about the future and decide to increase their investment in new capital, then this will generate a(n) _ gap and inflation will _.

Answer: expansionary; increase

When firms invest in new capital, they increase their production capacity, which increases potential output. This leads to an expansionary gap, where actual output exceeds potential output. As a result, inflation will increase due to higher demand for goods and services.

11. The Federal Reserve sets the nominal interest rate (i) using a forward-looking rule: $i = r* + \pi^e + \theta(\pi^e - \pi*)$,

where:

r* = equilibrium real interest rate (1.5%),
π^e = public's expected inflation over the next year (5%),
π* = Fed's inflation target (2%),
θ = policy response coefficient (0.5).
If actual inflation (π) turns out to be 7%, calculate the ex-post real interest rate.

Answer: 1%

$$i = 0.015 + 0.05 + 0.5(0.05 - 0.02) = 0.08$$

ex-post real interest rate = $i - \pi = 0.08 - 0.07 = 0.01$

12. In the short-run Keynesian model, to close an expansionary gap of $10 billion government purchases must be

Answer: decreased by less than $10 billion.

Recall that $PAE = C + I + G + NX$

An expansionary gap means that $PAE > Y$, which means that the economy is producing more than its potential output. To close this gap, the government must decrease its purchases, which will decrease PAE and bring it back to equilibrium.

Non-Consumption Expenditure has a multiplier effect on PAE: $\frac{1}{1-MPC}$

So a less-than-$10 billion decrease in government purchases will result in a $10 billion decrease in PAE.

13. If households and firms widely expect inflation to rise significantly in the near future, which of the following is most likely to occur in the economy?

- The central bank lowers interest rates to stimulate economic growth.
- Aggregate demand decreases due to delayed consumption and investment.
- Workers demand higher wages, leading to cost-push inflation.
- The velocity of money declines as people reduce spending.

Answer: Workers demand higher wages, leading to cost-push inflation.

When inflation is expected to rise, workers demand higher wages to keep up with the rising cost of living. This leads to cost-push inflation, where the increase in wages raises production costs for firms, which in turn raises prices for consumers.

- According to Fisher effect, the nominal interest rate increases with inflation.

- Households and firms tend to spend more now to avoid higher prices in the future. So AD will increase in short run, and the velocity of money will increase.

14. The interest rate that commercial banks charge each other for very short-term loans is called the

Answer: federal funds rate.

15. In Macroland, autonomous consumption equals 100, the marginal propensity to consume equals 0.75, net taxes are fixed at 40, planned investment is fixed at 50, government purchases are fixed at 150, and net exports are fixed at 20. Short-run equilibrium output in this economy equals

Answer: 1,160

$$Y = C + I + G + NX$$

$$C = \bar{C} + MPC \cdot (Y - T) = 100 + 0.75 \cdot (Y - 40)$$

$$Y = 100 + 0.75 \cdot (Y - 40) + 50 + 150 + 20$$

$$Y = 290 + 0.75Y$$

$$Y = 290/0.25 = 1,160$$

16. If consumption increases by $9 when disposable income increases by $10, the marginal propensity to consume (mpc) equals

Answer: 0.9

17. The accompanying table shows Francesca's estimated annual benefits of holding different amounts of money.

Average money holdings	Total benefit
$700	$50
$800	$59
$900	$66
$1,000	$71
$1,100	$74

Answer: $800

$$\text{Opportunity cost} = \text{Amount hold} \times \text{interest rate}$$

Average money holdings	Total benefit	Opportunity cost	Net benefit
$700	$50	$56	-$6
$800	$59	$64	-$5
$900	$66	$72	-$6
$1,000	$71	$80	-$9
$1,100	$74	$88	-$14

So the optimal amount of money to hold is $800, where the net benefit is maximized.

18. In Macroland, autonomous consumption equals 100, the marginal propensity to consume equals 0.75, net taxes are fixed at 40, planned investment is fixed at 50, government purchases are fixed at 150, and net exports are fixed at 20. Induced expenditure equals

Answer: 0.75Y

Recall that induced expenditure is the part of consumption that depends on income, and the autonomous consumption is the part that does not depend on income.

In $Y = 290 + 0.75Y$, the induced expenditure is $0.75Y$, and the autonomous consumption is 290.

19. In the short run, with predetermined prices, when output is less than planned aggregate expenditure

- potential output is less than short run equilibrium output.
- planned investment is greater than actual investment.
- potential output is greater than short run equilibrium output.
- planned investment is less than actual investment.

Answer: planned investment is greater than actual investment.

When output is less than planned aggregate expenditure, it means that firms are not producing enough to meet the demand. This leads to an increase in planned investment as firms try to catch up with the demand.

20. When the Fed sells government securities, the banks'

- reserves will decrease and lending will contract, causing a decrease in the money supply.
- reserves/deposit ratio will increase and lending will expand, causing an increase in the money supply.
- reserve requirements will increase and lending will contract, causing a decrease in the money supply.
- reserves will increase and lending will expand, causing an increase in the money supply.

Answer: reserves will decrease and lending will contract, causing a decrease in the money supply.

When the Fed sells government securities, it takes money out of the banking system, which decreases the reserves of banks. This leads to a decrease in lending and a decrease in the money supply.

21. The three functions of money are

Answer: medium of exchange, unit of account, and store of value.

22. $PAE = 1000 + 0.75Y, Y^* = 5000.$

Short-run equilibrium output is __, long-run equilibrium output is __.

Answer: 4,000; 5,000

When $Y = PAE$, we have $Y = 1000 + 0.75Y$. The solution is $Y = 4000$. At this point, the economy is in short-run equilibrium.

When $Y = Y^*$, the economy is in long-run equilibrium.

23. In the long run, countries with higher rates of money growth usually have

- higher rates of inflation.
- faster growth rates of real output.
- smaller budget deficits.
- lower rates of inflation.

Answer: higher rates of inflation.

In the long run, the amount of money in circulation is directly related to the price level. If the money supply increases, prices will also increase, leading to inflation.

24. Starting from long-run equilibrium, a decrease in autonomous investment results in _ output in the short run and _ output in the long run.

Answer: lower; potential

A decrease in autonomus investment is an exogenous shock that shifts the AD curve to the left. This leads to a decrease in output in the short run, as firms reduce production in response to lower demand.

In the long run, the economy will return to its potential output, which is merely determined by the economy's productive capacity.

25. Based on the following information, the value of the M1 measure of the money supply is __ and the value of the M2 measure of the money supply is __.

Assets	**Billions of Dollars**
Currency	30
Demand deposits	300
Savings deposits	0
Other checkable deposits	200
Small denomination time deposits	1,100

Answer: $530 billion; $1,630 billion

M1 includes:

- Currency
- Demand Deposits
- Traveler's Checks
- Other Checkable Deposits

M2 includes:

- All of M1
- Savings Deposits
- Money Market Mutual Funds
- Small Denomination Time Deposits

M1 = Currency + Demand Deposits + Other Checkable Deposits = 30 + 300 + 200 = $530 billion

M2 = M1 + Savings Deposits + Small Denomination Time Deposits = 530 + 0 + 1,100 = $1,630 billion

26. If planned aggregate expenditure (PAE) in an economy equals 2,000 + 0.8Y and potential output (Y*) equals 11,000, then this economy has:

Answer: recessionary gap

$Y = 2000 + 0.8Y \implies Y = 10,000$

So SR equilibrium output is 10,000, which is less than potential output of 11,000.

This means that the economy is in a recessionary gap.

27. The money demand curve will shift to the right if

- the nominal interest rate increases.
- the price level decreases.
- ATM machines are introduced.
- real income increases.

Answer: real income increases

"The many demand curve shift to the right" implies that the quantity of money demanded increases at each interest rate.

- "The nominal interest rate increases" is movement along the curve, not a shift.
- "The price level decreases" = decrease in the quantity of money demanded
- "ATM machines are introduced" = decrease in the quantity of money demanded
- "Real income increases" = increase in the quantity of money demanded

28. If firms sell less than is expected, actual investment increases because _, which is counted as investment.

- the government buys the unsold goods
- households buy the unsold goods at bargain prices
- the unsold goods are distributed to poor households
- the unsold goods are added to inventory

Answer: the unsold goods are added to inventory

29. The income-expenditure multiplier leads to greater than one-for-one changes in output when autonomous spending changes because

- autonomous spending supports more output than induced spending.
- multiple deposits are generated when new reserves are produced through fractional reserve banking.
- the direct changes in spending change the income of producers, which leads to additional changes in spending.
- planned changes in inventories signal producers to adjust the level of output.

Answer: the direct changes in spending change the income of producers, which leads to additional changes in spending.

30. Which combination of indicators would most strongly suggest stagflation?

- Low inflation, low unemployment, high growth
- Low inflation, high unemployment, low growth
- High inflation, low unemployment, high growth
- High inflation, high unemployment, low growth

Answer: High inflation, high unemployment, low growth

Stagflation = economic stagnation + inflation = low growth + high unemployment + high inflation

Final Exam Practice Questions

1. Which of the following transactions represents the purchase of a final good?

- Starbucks purchases coffee beans.
- You buy a new Honda Accord car.
- Subway purchases lettuce for its sandwiches.
- Apple computer buys computer processors from Intel.

Answer: You buy a new Honda Accord car.

2. Suppose that a simple economy produces only four goods and services: shoes, DVDs, tomatoes, and ketchup. Assume half of the tomatoes are used in making the ketchup. Using the information in the above table, nominal GDP for this simple economy equals

Product	**Quantity**	**Price**
Shoes	40	$60
DVDs	100	$18
Tomatoes	2,000	$1
Ketchup	300	$4

Answer: $6,400

$$40 \times 60 + 100 \times 18 + 0.5 \times 2000 \times 1 + 300 \times 4 = 2400 + 1800 + 1000 + 1200 = \$6,400$$

3. If the number employed is 190 million, the working-age population is 250 million, and the number unemployed is 10 million, then the unemployment rate is

Answer: 5.0%

$$\text{Unemployment rate} = \frac{\text{Unemployed}}{\text{Labor force}} = \frac{10}{190+10} = 0.05$$

4. If cyclical unemployment is eliminated in the economy, then

- the economy is considered to be at full employment.
- the unemployment rate is below the natural rate of unemployment.
- the unemployment rate is above the natural rate of unemployment.
- the economy has no unemployment.

Answer: the economy is considered to be at full employment.

$\text{Cyclical unemployment} = \text{Actual unemployment} - \text{Natural unemployment}$

Recall 3 types of unemployment:

- Frictional unemployment: short-term unemployment that occurs when people are between jobs or entering the labor force.
- Structural unemployment: long-term unemployment that occurs when there is a mismatch between the skills of workers and the skills needed for available jobs.
- Cyclical unemployment: unemployment that occurs during economic downturns or recessions.

5. A consumer price index of 140 in 2005 with a base year of 1999 means that in 2005

- the inflation rate equaled 140%.
- the inflation rate equaled 40%.
- the price level rose 140% from the base year.
- the price level rose 40% from the base year

Answer: the price level rose 40% from the base year.

Inflation rate is annual.

6. If the real GDP in China doubles between 2005 and 2015, what is the average annual growth rate of the real GDP in China?

Answer: 7.18%

$(1+g)^{10} = 2$

$g \simeq 0.0718$

7. An increase in the government budget deficit will shift the ____ curve for loanable funds to the ____ and the equilibrium real interest rate will ____.

Answer: supply; left; rise

Increase in government budget deficit = decrease in national saving = decrease in supply of loanable funds = shift to the left. Equilibrium investment decreases, real interest rate increases. $S' < S^*, r' > r^*$

Recall that

- Supply of saving curve (X = real interest rate r, Y = quantity of loanable funds S) is upward sloping.
- Demand for investment curve (X = real interest rate r, Y = quantity of investment borrowed I) is downward sloping.
- When r increases, S increases and I decreases.
- If $r > r^*$, then $S > I$ and there is a surplus of savings.

8. Suppose consumption is $6 million, planned investment is $8 million, government purchases are $10 million, and net export is $2 million. There is an unplanned increase in inventories that equals $2 million. What is the value of real GDP?

Answer: $28 million

$Y = C + I + G + (X - IM) = 6 + (8 + 2) + 10 + 2 = 28$

9. If disposable income falls by $50 billion and consumption falls by $40 billion, then the slope of the consumption function is

Answer: 0.8

Recall that $Y = C + I + G + NX = C_0 + YMC(Y - T) + \cdots$

where C_0 = autonomous consumption, YMC = marginal propensity to consume. $YMC\dot{Y}$ is called induced spending, the remaining part is autonomous spending.

10. An increase in the price level will

- shift the aggregate demand curve to the left.
- shift the aggregate demand curve to the right.
- move the economy up along a stationary aggregate demand curve.
- move the economy down along a stationary aggregate demand curve.

Answer: move the economy up along a stationary aggregate demand curve.

Recall that the AD curve (X = real GDP Y, Y = inflation rate π) is downward sloping. When the price level increases, π increases and Y decreases, moving the economy up and to the left along the AD curve.

11. Suppose the economy is at a short-run equilibrium GDP that lies below potential GDP. Which of the following will occur because of the automatic mechanism adjusting the economy back to potential GDP?

- Short-run aggregate supply will shift to the left.
- Short-run aggregate supply will shift to the right.
- Short-run aggregate demand will shift to the left.
- Short-run aggregate demand will shift to the right.

Answer: Short-run aggregate supply will shift to the right.

Recall that SRAS curve is a horizontal line at $\pi = \pi_0$, and LRAS curve is a vertical line at $Y = Y^*$.

When the economy is below potential GDP, the short-run equilibrium is to the top and left of the AD curve, $Y < Y^*$ and $\pi > \pi_0$. Since "automatic mechanism" means that the economy will adjust itself, the AD curve will be fixed, and the SRAS curve will shift to the down and right.

(In other Macroeconomics textbooks, the AD-AS model use price level P instead of inflation rate π as Y axis. In this case, the SRAS curve is upward sloping. So SRAS moving down = moving to the right = reducing price level = increasing output.)

12. If a person withdraws $1,000 from his/her checking account deposit and puts it in his/her savings account, then M1 will ____ and M2 will ____.

Answer: decrease; remain unchanged

Recall that

- M1 = currency + demand deposits (checking account, can be withdrawn at any time) + traveler's checks + other checkable deposits
- M2 = M1 + savings deposits + money market mutual funds + small denomination time deposits + near money

13. Suppose you withdraw $500 from your checking account deposit and bury it in a jar in your back yard. If the required reserve ratio is 10 percent, checking account deposits in the banking system as a whole could drop up to a maximum of

Answer: $5,000

14. An increase in the price level causes

- the money demand curve to shift to the left.
- the money demand curve to shift to the right.
- a movement up along the money demand curve.
- a movement down along the money demand curve.

Answer: the money demand curve to shift to the right.

Recall that the money demand curve (X = quantity of money demanded M_d, Y = nominal interest rate i) is downward sloping. Real income Y and price level P are extraneous variables that shift the money demand curve.

15. When conducting an expansionary monetary policy, the Fed can ____ the federal funds rate by ____ Treasury bills, which increases bank reserves.

Answer: decrease; buying

Expansionary monetary policy = increase money supply = decrease interest rate = increase investment = increase output.

Treasury bills are government bonds that are sold to the public. When the Fed buys Treasury bills, it injects money into the banking system, which increases bank reserves and decreases the federal funds rate.

16. If the Federal Reserve uses contractionary monetary policy to keep real GDP at its potential level, which of the following will be lower than if the Fed had taken no action?

- real GDP and the unemployment rate
- real GDP and the inflation rate
- real GDP and potential GDP
- the unemployment rate and the inflation rate

Contractionary monetary policy = decrease money supply = increase interest rate = decrease output = increase unemployment rate.

So if no action is taken, real GDP Y will be higher, the unemployment rate u will be lower, and the inflation rate π will be higher.

Potential GDP is solely determined by the economy's productive capacity.

17. The increase in government spending on unemployment insurance payments to workers who lose their jobs during a recession and the decrease in government spending on unemployment insurance payments to workers during an expansion is an example of

- automatic stabilizers.
- discretionary fiscal policy.
- discretionary monetary policy.
- automatic monetary policy.

Answer: automatic stabilizers.

Automatic stabilizers are government policies that automatically adjust to changes in the economy without the need for new legislation.

18. Expansionary fiscal policy involves

- increasing government purchases or decreasing taxes.
- increasing taxes or decreasing government purchases.
- increasing the money supply and decreasing interest rates.
- decreasing the money supply and increasing interest rates

Answer: increasing government purchases or decreasing taxes.

Recall that fiscal policy is the use of government spending and taxation to influence the economy, and expansionary policy increases output.

$$Y = C + I + G + NX = C_0 + YMC(Y - T) + \cdots$$

To increase output, the government can increase G or decrease T.

19. From an initial long-run equilibrium, if aggregate demand grows more slowly than long-run and short-run aggregate supply, then _ would most likely keep real GDP at its potential level.

- increasing the required reserve ratio
- increasing interest rates
- decreasing government spending
- decreasing taxes

Answer: decreasing taxes

If AD grows more slowly than LRAS and SRAS, effectively AD curve shifts to the left. This means that the economy is producing less than its potential output, which leads to a recessionary gap.

Therefore a expansionary policy is needed to increase output.

- Increasing the required reserve ratio = decrease money supply = increase interest rates = decrease output, contractionary policy
- Increasing interest rates = decrease output, contractionary policy
- Decreasing government spending = decrease output, contractionary policy
- Decreasing taxes = increase output, expansionary policy

20. If expected inflation falls, the long-run Phillips curve will

- shift to the right.
- not be affected.
- shift to the left.
- become negatively sloped.

Answer: not be affected.

Recall that Phillips curve (X = unemployment rate u, Y = inflation rate π) is downward sloping.

The long-run Phillips curve is vertical at the natural rate of unemployment u^*, which is not affected by inflation. (but long-run Phillips curve can shift left or right due to changes in structural unemployment)

21. An increase in expected inflation will

- increase real wages.
- decrease the natural rate of unemployment.
- shift the long-run Phillips curve to the right.
- None of the above is correct.

Answer: None of the above is correct.

22. If the price level in the United States is 110, the price level is 120 in Mexico, and the nominal exchange rate is 140 pesos per dollar, what is the real exchange rate from the U.S. perspective?

Answer: 128.33

$$\frac{RER}{=} \frac{\text{Price of US goods in USD}}{\text{Price of Mexican goods in pesos}} = \frac{P_{US} \cdot E}{P_{MX}} = \frac{110 \cdot 140}{120} = 128.33$$

23. According to the saving and investment equation, if net foreign investment falls by $35 million,

- national saving in excess of domestic investment will rise by $35 million.
- national saving in excess of domestic investment will decrease by $35 million.
- national savings will rise by $35 million.
- domestic investment will fall by $35 million.

Answer: national saving in excess of domestic investment will increase by $35 million.

Saving and investment equation: $S + KI = I$, or $S - I = -KI$

Since KI decreases by $35 million, $S - I$ increases by $35 million. In other word, while S is unaffected, I decreases by $35 million.

24. The Danish currency, the krone, is pegged to the euro at a rate of 7.43 kroner (kroner is the plural of krone) to the euro. At the pegged exchange rate, how many euros would be exchanged for one krone?

Answer: 0.135

25. In order to support an undervalued euro, the European Central Bank must ____ dollars. Over time, this action will cause the rate of inflation in the EU to ____.

Answer: buy; increase

When the euro is undervalued, the European Central Bank must buy dollars to support the euro. This increases the money supply in the EU, which leads to inflation.

Why buying USD? To increase the value of euro, the goal is to increase the demand or reduce the supply of euro. Buying USD increases the demand for USD and reduces the supply of euro, which increases the value of euro.

26. Which of the following is a true statement about real and nominal GDP?

- If nominal GDP increases from one year to the next, we know that production of goods and services has risen.

- Increases in average prices do not affect the calculation of nominal GDP.
- If real GDP increases from one year to the next, we know that production of goods and services has risen.
- Nominal GDP is a better measure than real GDP in comparing changes in the production of goods and service year after year.

Answer: If real GDP increases from one year to the next, we know that production of goods and services has risen.

27. Labor unions cause unemployment because the union contract wage is set

- below the market wage, causing a surplus of labor.
- above the market wage, causing a shortage of labor.
- below the market wage, causing a shortage of labor.
- above the market wage, causing a surplus of labor.

Answer: above the market wage, causing a surplus of labor.

28. The Soviet Union consistently increased the amount of capital available to its workers, but found that increases in capital resulted in progressively smaller and smaller increases in GDP per worker. This phenomenon is referred to as

- a shift of the per-worker production function.
- new growth theory.
- diminishing returns to capital.
- a rising standard of living.

Answer: diminishing returns to capital.

29. Policies to promote growth by increasing saving and investment work through

- increasing the supply of loanable funds, increasing the interest rate, raising the level of investment in physical capital.
- decreasing the supply of loanable funds, lowering the interest rate, raising the level of investment in physical capital.
- increasing the supply of loanable funds, lowering the interest rate, lowering the level of investment in physical capital.
- increasing the supply of loanable funds, lowering the interest rate, raising the level of investment in physical capital.

Answer: increasing the supply of loanable funds, lowering the interest rate, raising the level of investment in physical capital.

Expansionary monetary policy = increase money supply = decrease interest rate = increase investment = increase output.

"Loanable funds" = money available for borrowing. "Investment in physical capital" = investment in new capital goods, such as machinery and equipment.

30. At point J in the figure above, which of the following is true? ($PAE > Y, Y < Y^*$)

- GDP will be decreasing.
- Aggregate expenditure is less than GDP.

- Actual inventories are less than planned inventories.
- The economy has achieved macroeconomic equilibrium.

Answer: Actual inventories are less than planned inventories.

The economy is in a recessionary gap, where actual output is less than potential output. This means that firms are not producing enough to meet the demand, so acual inventories are less than planned inventories.

31. If the economy is at point J in the figure above, what will happen?

- Inventories have fallen below their desired level, and firms increase production.
- Inventories have risen above their desired level, and firms decrease production.
- Inventories have fallen below their desired level, and firms decrease production.
- Inventories have risen above their desired level, and firms increase production.

Answer: Inventories have fallen below their desired level, and firms increase production.

32. Use the aggregate demand and aggregate supply framework to analyze the effect of a fall in oil prices. When the price of oil falls unexpectedly, the equilibrium price level ____ and the unemployment rate ____ in the short run.

Answer: falls; falls

Decrease in oil prices = decrease in production costs = increase in short-run aggregate supply (SRAS) = increase in output = decrease in price level = decrease in unemployment rate.

33. Stagflation occurs when inflation ____ and GDP ____.

Answer: rises; falls

34. Suppose a transaction changes a bank's balance sheet as indicated in the following T-account, and the required reserve ratio is 10 percent.

- Assets: Reserves +$3,000
- Liabilities: Deposits +$3,000

As a result of the transaction, the bank can make a maximum loan of

Answer: $2,700

35. If the central bank buys government bonds, then this

- decreases reserves, causes banks to reduce their loans, and decreases the money supply.
- increases reserves, encourages banks to make more loans, and increases the money supply.
- increases reserves, causes banks to reduce their loans, and decreases the money supply.
- decreases reserves, causes banks to reduce their loans, and increases the money supply.

Answer: increases reserves, encourages banks to make more loans, and increases the money supply.

Quantitative easing (QE): Fed buys long-term bonds to increase the money supply and lower long-term interest rates. This is a form of expansionary monetary policy.

36. According to the quantity theory of money, inflation is caused by

- GDP growing faster than the money supply.
- GDP growing at the same rate as the money supply.
- the money supply growing faster than real GDP.
- the money supply growing slower than real GDP.

Answer: the money supply growing faster than real GDP.

Money velocity equation: $MV = PY$

Where M = money supply, V = velocity of money, P = price level, Y = real GDP.

$P = \frac{MV}{Y}$. So if M grows faster than Y, inflation will occur.

37. In which of the following situations would the central bank conduct contractionary monetary policy?

- The central bank is worried that deflation will become a problem.
- The central bank is concerned that aggregate demand would continue to exceed the growth in potential GDP.
- The central bank believes that aggregate demand was growing too slowly to keep up with potential GDP.
- The central bank fears that unemployment is climbing above the natural rate.

Answer: The central bank is concerned that aggregate demand would continue to exceed the growth in potential GDP.

38. Consider the hypothetical information in the table above for potential real GDP, real GDP and the price level in 2014 and in 2015 in the U.S. if the Federal Reserve does not use monetary policy. If the Fed wants to keep real GDP at its potential level in 2015, it should

- increase income taxes.
- sell Treasury securities.
- increase the required reserve ratio.
- buy Treasury securities.

Yr	Y^*	Y	P
2014	14.0	14.0	150
2015	14.5	14.2	152

Answer: buy Treasury securities.

Since $Y < Y^*$, the Fed should conduct expansionary monetary policy to increase output.

- Increase income taxes = decrease output, contractionary policy
- Sell Treasury securities = decrease money supply = increase interest rate = decrease output, contractionary policy
- Increase the required reserve ratio = decrease money supply = decrease output, contractionary policy
- Buy Treasury securities = increase output, expansionary policy

39. Using the Taylor rule, if the current inflation rate rises above target inflation rate and real GDP rises above potential GDP while all else remains constant, then the federal funds target rate will

Answer: increase.

Taylor rule: $i = r^* + \pi^e + \theta(\pi^e - \pi^*) + \theta(\frac{Y-Y^*}{Y^*}), \theta = 0.5$

Where i = federal funds target rate, r^* = equilibrium real interest rate, π^e = expected inflation, $\frac{Y-Y^*}{Y^*}$ = output gap.

Since $\pi^e > \pi^*$ and $Y > Y^*$, the Taylor rule will increase the federal funds target rate as a form of contractionary monetary policy.

40. If policy makers are concerned that the economy is in danger of rising inflation because aggregate demand is increasing faster than aggregate supply, the appropriate fiscal policy response is to

- increase taxes.
- use expansionary fiscal policy.
- increase interest rates.
- increase government spending.

Answer: increase taxes.

41. If the government purchases multiplier equals 2, and real GDP is $14 trillion with potential real GDP$15 trillion, then government purchases would need to increase by ____ to restore the economy to potential real GDP. Assume a constant price level and no crowding out effect.

Answer: $0.5 trillion

Government purchases multiplier = $\frac{\Delta Y}{\Delta G}$, actually a type of non-consumption expenditure multiplier.

42. If policy makers implement an expansionary fiscal policy to achieve the potential level of GDP but do not take into account the possibility of crowding out, the new equilibrium level of GDP is likely to

Answer: be below potential GDP.

An expansionary fiscal policy increases output by increasing G or decreasing T. Consequently, government spending increases = government borrowing increases = demand for loanable funds increases = interest rate increases = cost of borrowing increases = investment decreases = crowding out effect.

43. If strong aggregate demand is pushing the economy beyond potential real GDP, which of the following must be true?

- The economy is at an equilibrium that is on the long-run Phillips curve.
- The economy is at an equilibrium that is on the long-run aggregate supply curve.
- The economy is at an equilibrium that is not on the long-run Phillips curve.
- Expansionary monetary policies will push the economy back to the long-run Phillips curve.

Answer: The economy is at an equilibrium that is not on the long-run Phillips curve.

Long-run Phillips curve is vertical at the natural rate of unemployment u^*. If the economy is in a expansionary gap, the unemployment rate is below the natural rate of unemployment, which means that the economy is not on the long-run Phillips curve.

44. What impact does expansionary monetary policy have on the short-run Phillips curve if consumers and firms expect the expansionary monetary policy to increase inflation?

- The short-run Phillips curve becomes the long-run Phillips curve.
- The short-run Phillips curve is not affected by expansionary monetary policy.
- The short-run Phillips curve shifts down.
- The short-run Phillips curve shifts up.

Answer: The short-run Phillips curve shifts up.

45. Currency speculators believe that the value of the euro will decrease relative to the dollar following ECB quantitative easing. Supply of U.S. dollar would __ and demand for U.S. dollar would __, causing the EUR/USD exchange rate to __.

Answer: decrease; increase; decrease

When the value of euro decreases, investors will sell euros and buy dollars. This increases the demand for dollars and decreases the supply of dollars, which makes the euro depreciate against the dollar.

46. The level of saving in the United States has historically been low relative to the level of domestic investment. Based on this information, we would expect that

- U.S. net foreign investment has been relatively high.
- U.S. private saving is less than its public saving.
- U.S. capital inflows are negative.
- U.S. net exports have been relatively low.

Answer: U.S. net exports have been relatively low.

$S + KI = I$, or $I - S = KI$. Since saving is less than investment, KI is positively high.

$KI + NX = 0$. So if KI is positive, then NX is negative. This means that the U.S. has a trade deficit, which means that U.S. net exports are relatively low.

47. Which of the following would you expect to decrease both interest rates and exchange rates? (Assume exchange rates are stated in terms of foreign currency per domestic currency.)

- contractionary monetary policy
- contractionary fiscal policy
- expansionary monetary policy
- Both B and C will decrease both interest rates and exchange rates.

Answer: Both B and C will decrease both interest rates and exchange rates.

Expansionary monetary policy = increase money supply = decrease interest rate = discourage foreign investment = decrease exchange rate.

Expansionary fiscal policy = increase government spending or decrease taxes = increase output = increase demand for loanable funds = increase interest rate = encourage foreign investment = increase exchange rate.

	Contractionary	Expansionary
Monetary	$r\uparrow$	$r\downarrow$
Fiscal	$r\downarrow$	$r\uparrow$

48. The "Big Mac Theory of Exchange Rates" tests the accuracy of purchasing power parity theory. In July 2011, The Economist reported that the average price of a Big Mac in the United States was $4.07. In Japan, the average price of a Big Mac at that time was 320 yen. What is the "implied exchange rate" between the yen and the dollar?

Answer: 78.6 yen per dollar

49. Using a fixed exchange rate system can be advantageous in all of the following situations except

- if a country wishes to conduct independent monetary policy.
- if imports are a significant fraction of the goods the country's consumers buy.
- if investors believe the dollar to be more stable than the domestic country's currency.
- if the country has extensive U.S. dollar denominated trading.

Answer: if a country wishes to conduct independent monetary policy.

The Impossible Trinity theorem states that a country can only have two of the following three things: Fixed exchange rate, independent monetary policy, and free capital mobility.

- If fixed exchange rate is used, monetary policy must be adjusted according to external factors.
- If imports are a significant fraction of the goods the country's consumers buy, a fixed exchange rate can help stabilize prices and reduce uncertainty.
- If investors believe the dollar to be more stable than the domestic country's currency, a fixed exchange rate pegging domestic currency to the dollar can help increase confidence in the domestic currency.
- If the country has extensive U.S. dollar denominated trading, a fixed exchange rate can help simplify transactions and reduce exchange rate risk.

50. China began pegging its currency, the yuan, to the dollar in 1994 in order to support China’s export sector. Because the yuan was ____ at the pegged exchange rate, the Chinese government increased its reserves of ____ as the government purchased more ____ to maintain the pegged exchange rate.

Answer: undervalued; dollars; dollars

When CNY is undervalued, the Chinese government must buy USD to support CNY. This increases the demand for USD and reduces the supply of CNY, which increases the value of CNY.

Essay Questions:

1. Consider the money market and investment in a closed economy in the short run. Suppose that the initial equilibrium interest rate is zero and the initial equilibrium investment is finite. The price level is rigid in the short run. Investigate what would happen to the equilibrium interest rate and the investment if the monetary authority performs an expansionary monetary policy.

Draw money demand and supply model to illustrate your answer (X = quantity of money M, Y = nominal interest rate i).

Expansionary monetary policy = Fed buys Treasury bills = increase money supply = shift money supply curve to the right = new equilibrium at point $B(M_1, i_1)$ where $M_1 > M^*$ and $i_1 < i^*$ = reduce interest rate = reduce cost of borrowing = increase investment.

2. Consider an economy without economic growth (real GDP is constant). The economy is initially in a long-run macroeconomic equilibrium. Suppose that oil prices increase substantially and the production costs that many firms incur increase. Investigate what would happen to the economy in the short run and in the long run.

Draw AD-AS model to illustrate your answer (X = real GDP Y, Y = inflation rate π).

Assume original equilibrium is at point $A(Y^*, \pi^*)$. SRAS: $\pi = \pi^*$. LRAS: $Y = Y^*$.

In the short run, the inflation rate increases to π_1 = SRAS curve shifts up = new equilibrium at point $B(Y_1, \pi_1)$ where $Y_1 < Y^*$ and $\pi_1 > \pi^*$.

In the long run without policy intervention, the economy will adjust itself back to the long-run equilibrium at point $A(Y^*, \pi^*)$.

In the long run with policy intervention, the government can conduct expansionary monetary policy to increase output. The AD curve shifts to the right, and the new equilibrium is at point $C(Y^*, \pi_1)$ where $\pi_1 > \pi^*$.