

# AP Macroeconomics

## Study Guide – Version 1.00

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### I. Basic Economic Concepts

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Economic Goals	<ol style="list-style-type: none"><li>1. Economic growth – produce more and better goods and services</li><li>2. Full employment – suitable jobs for all citizens who are willing and able to work</li><li>3. Economic efficiency – achieve the maximum production using available resources</li><li>4. Price-level stability – avoid large fluctuations in the price level (inflation + deflation)</li><li>5. Economic freedom – businesses, workers, consumers have a high degree of freedom in economic activities</li><li>6. Equitable distribution of income – try to minimize gap between rich and poor</li><li>7. Economic security – provide for those who are not able to earn sufficient income</li><li>8. Balance of trade – try to seek a trade balance with the rest of the world</li></ol>
Basic Economic Problem	<ol style="list-style-type: none"><li>1. Society’s material wants, that is, the material wants of its citizens and institutions, are virtually unlimited and insatiable.</li><li>2. Economic resources—the means of producing goods and services—are limited or scarce.</li></ol>
Types of resources	<p>Land – all natural resources usable in the production process</p> <p>Capital – all manufactured aids to production (tools, machinery, equipment, and factory, storage, transportation, and distribution facilities used in producing goods and services</p> <p>Labor – physical and mental talents of individuals available and usable in producing goods and services</p> <p>Entrepreneurial ability – the entrepreneur 1) takes the initiative in combining the other resources to produce a good or service, 2) makes basic business-policy decisions, 3) is an innovator, and 4) is a risk bearer.</p>
Factors of production	<p>Several objectives must be satisfied to reach full production:</p> <ol style="list-style-type: none"><li>1) Full employment – use all available resources</li><li>2) Full production – use resources efficiently (productive efficiency – production in least costly way, allocative efficiency – production of goods and services most wanted by society)</li></ol>
Production Possibilities Curve	<p>The production possibilities curve represents the combinations of maximum output that can be reached in the economy. It is a <i>frontier</i> because it shows the limit of output. Anything under the curve is attainable, but involves inefficient use of resources. Anything outside the curve is unattainable with current resources.</p> <p>Usually, the curve is some type of consumer goods versus some type of capital goods. Each point on the curve represents a maximum output of the two goods. Different points on the curve mean different production combinations of the two goods.</p> <p>The curve bows outwards because of the Law of Increasing Opportunity Cost, which states that the amount of a good which has to be sacrificed for each additional unit of another good is more than was sacrificed for the previous unit. The rationale for this law is that some economic resources are not completely adaptable to alternative uses, so the resources will yield less of one product.</p> <p>Shifts in this curve can be caused by increases in resource supplies or advances in technology. Also, if an economy favors “future goods” (technology, etc), the curve will shift faster because of more economic growth.</p>
Determinants for Production	<p>One must compare marginal benefits and marginal costs to determine the best or optimal output mix on the Production Possibilities Curve.</p>

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## II. Basic Economic Measurements

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### Gross Domestic Product

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Gross Domestic Product (Expenditures Approach)	Expenditures approach: $GDP = C + I_g + G + X_n$ C = personal consumption expenditures (durable consumer goods, nondurable consumer goods, consumer expenditures for services) $I_g$ = gross private domestic investment (all final purchases of capital by businesses, all construction, changes in inventories) G = government purchases (government spending on products and resources) $X_n$ = net exports (exports – imports) Some types of transactions do not involve purchasing of a final good or service, so they should not be counted in GDP. These include public transfer payments (social security, welfare, etc), private transfer payments (monetary gifts, etc), security transactions (stocks and bonds), and secondhand sales (they don't reflect current production).
Gross Domestic Product (Income Approach)	$GDP =$ Compensation of employees + Rents + Interest + Proprietors' income + Corporate profits (Corporate income taxes + dividends + undistributed corporate profits) + indirect business taxes + depreciation (consumption of fixed capital) + net foreign factor income
GDP growth	The GDP growth rate is calculated with the formula $\text{Growth Rate} = \frac{GDP_{\text{new}} - GDP_{\text{old}}}{GDP_{\text{old}}} \cdot 100$ If the growth rate is between 2-4%, it is considered "acceptable".
Nominal vs. Real GDP	Nominal GDP is sometimes inaccurate because if there is a lot of inflation, the actual GDP growth isn't as high as the figures seem to say. Therefore, we have a measure of GDP that is adjusted for inflation: real GDP. This is calculated by the formula $\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Price index (in hundredths)}}$
Difference between approaches	The expenditures approach tells us GDP by telling us how much the final user pays for each thing, giving us the value of the final product. The income approach adds all the wage, rent, interest, and profit incomes created in producing the product. They both add up to the same amount because money spent on a product is received as income by those who helped to make it.
Multiple counting/Value added	If we were to count the prices of intermediate goods instead of final goods in the expenditures approach, since the value of final goods already includes the value of intermediate goods, it would be counting the same thing multiple times, making GDP seem higher than it really is. To avoid multiple counting, accountants calculate only the value added by each firm in each stage of the product, instead of just how much each firm sells its product to the next firm.
NDP	GDP includes the money spent for replacing capital goods used by the year's production, so it somewhat exaggerates the value of the output <i>available</i> . NDP makes allowance for this money spent by subtracting depreciation (consumption of fixed capital) from GDP. For NDP to grow year to year, the stock of capital must increase.
NI	National Income includes all income earned by US-owned resources, whether located at home or abroad. To calculate NI, we must subtract net foreign factor income earned in the United States (since it isn't US-owned resources) and the indirect business taxes (since government isn't an economic resource and indirect taxes aren't a payment to

resources).

PI	Personal Income includes all income received, whether earned or unearned. This is NI – social security contributions – corporate income taxes – undistributed corporate profits + transfer payments.
DI	This is the amount of money households can spend. It is PI minus personal taxes.
<i>Inflation</i>	
CPI	This is a measure of inflation. It is calculated by the formula $\text{CPI} = \frac{\text{price in specific year}}{\text{price in base year/period}} \cdot 100$
Inflation	This is the increasing general level of prices from year to year. The rate of inflation is calculated by the formula $\text{Inflation Rate} = \frac{\text{CPI}_{\text{new}} - \text{CPI}_{\text{old}}}{\text{CPI}_{\text{old}}} \cdot 100$ If the rate of inflation is less than 3 percent (and greater than 0 percent, of course), it is considered “acceptable”.
Types of Inflation	Demand-pull inflation: more spending than the economy’s capacity to produce. The excess demand increases the prices of the limited real output, causing prices to rise. Cost-Push (Supply-side) inflation: Per-unit production costs (total input cost ÷ units of output) rise, reducing the amount of companies willing to sell products at the current price level. Then, supply decreases, causing the price level to increase.
Wage-price spiral	As price level rises, labor will demand and get higher nominal wages. Businesses will agree, hoping to get back the money by increasing prices. Then, as prices increase even more, labor will find that it has a reason to demand even more wage increases, but that causes more prices increases, and so on.
Rule of 70	If we divide 70 by the annual rate of inflation, this quotient is the number of years it takes for inflation to double the price level.
Fighting inflation	We can fight inflation by trying to reduce demand or by trying to prevent a wage-price spiral from getting out of hand. We can use either fiscal or monetary policy (means of doing so is explained later). Fiscal action will result in a budget surplus.
Real vs. Nominal values	A Nominal value is an unadjusted value. A Real value is a nominal value adjusted for inflation. $\text{Real Value} = \frac{\text{Nominal Value}}{\text{Price index (in decimal form)}}$ Therefore, we can’t just look at nominal values when trying to determine the status of the economy. Since lots of inflation can lead to very high nominal values, we can get a false impression that the economy is doing well when the real value is perhaps even decreasing.
Inflationary expectations	The effects of unexpected inflation are: It hurts people with fixed nominal incomes, since the money they earn isn’t worth as much anymore. It hurts people who save in fixed-value accounts It benefits debtors (borrowers) while hurting creditors (lenders). The effects of inflation can be lessened if people expect it (anticipated inflation), since then they can get a chance to prepare for the damages that the inflation may cause. For example, a person who has a fixed nominal income can try to adjust it if they know that its value is going to decrease. Many unions have labor contracts with cost-of-living adjustment (COLA) clauses, in which workers’ wages increase if there is inflation.

## *Unemployment*

Types	<p>Frictional – includes workers who are searching for jobs or waiting to take jobs in the near future. This unemployment is inevitable, since many workers switch to better jobs.</p> <p>Structural – changes over time in consumer demand and technology change the “structure” of total demand for labor. Some skills will not be needed as much or become obsolete, and new skills will appear. This is a mismatch between job seekers’ skills and the skills needed for the job. This is also inevitable because the demand for labor will always change over time as new technologies arise.</p> <p>Cyclical – this type of unemployment is caused by recession. People who are laid off because of decreased overall spending in the economy.</p>
Full employment	This is NOT zero unemployment, as frictional and structural unemployment are regarded as unavoidable in an economy. Therefore, full employment means no cyclical unemployment, and the full-employment rate is equal to the frictional plus structural rates. It is also called the natural rate of unemployment.
Solutions	In order to decrease cyclical unemployment, we must try to increase overall spending in the economy so businesses find their inventories decreasing and so hire more people. We do this by increasing aggregate demand with fiscal or monetary policy.
Calculation	<p>Unemployment means unemployment in the labor force, not the whole population. The labor force is total population – under 16 and/or institutionalized – people not in the labor force. Then, the unemployment rate is</p> $\frac{\text{Unemployed people in the labor force}}{\text{Total number of people in the labor force}} \cdot 100$
Criticism of unemployment rate	<p>The unemployment rate has been subject to some criticism, however.</p> <p>First of all, part-time workers are counted as fully employed; however, some part-time workers are people who can’t get a full-time job because of recession. This tends to understate the unemployment rate.</p> <p>Also, discouraged workers who are not actively searching for jobs anymore are not counted in the labor force. This understates the unemployment rate, especially in recession.</p>
GDP Gap	This is the amount by which actual GDP falls short of potential GDP (the GDP that can be attained at the natural rate of unemployment).
Okun’s Law	<p>For every 1 percentage point that the actual unemployment rate exceeds the natural rate, a GDP gap of about 2% occurs.</p> <p>For example, if the actual rate is 6% and the natural rate is 4%, there will be a GDP gap of 4%.</p>

### **III. Economic Models**

Essentials	<p>Law of Demand: inverse relationship between price and quantity demanded</p> <p>Law of Supply: direct relationship between price and quantity supplied</p>
MPS/MPC	<p>MPS is the slope of the savings schedule. It is equal to <math>\frac{\text{change in savings}}{\text{change in income}}</math>.</p> <p>MPC is the slope of the consumption schedule. It is equal to <math>\frac{\text{change in consumption}}{\text{change in income}}</math>.</p> <p style="text-align: center;"><math>MPS + MPC = 1.</math></p>
The Multiplier Effect	A change in aggregate expenditures causes a greater increase in GDP because the same money is used many times over. The multiplier determines how much larger the

increase in GDP is.

$$\text{The multiplier's value can be found by the formula } \text{Multiplier} = \frac{1}{\text{MPS}} = \frac{1}{1 - \text{MPC}}.$$

This multiplier is called the simple multiplier.

#### IV. Economic Policies

##### *Fiscal Policy*

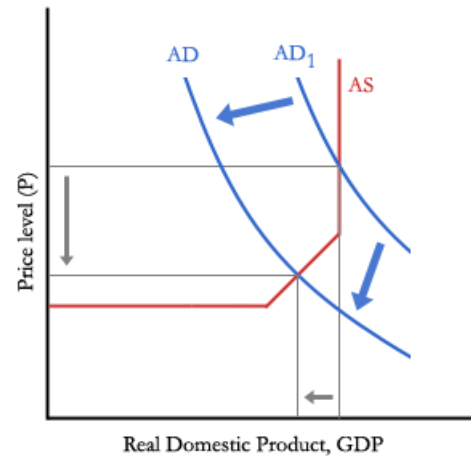
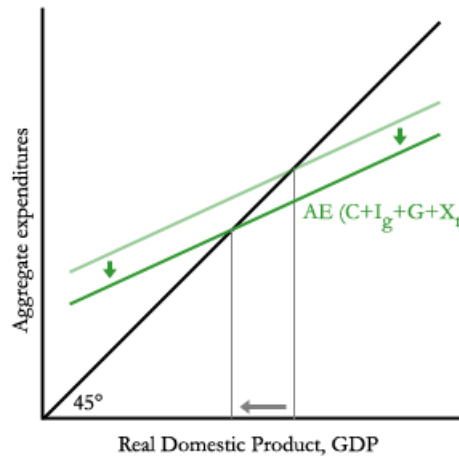
Tools

The government has two tools for regulating fiscal policy: a change in government spending or changes in taxes. The government can also use both if it thinks the economy needs it.

Inflationary Situation

If the inflation is demand-pull inflation, the government should use a contractionary fiscal policy. It can decrease government spending, increase taxes, or both. The government is aiming for a budget surplus, where tax revenues are larger than government spending.

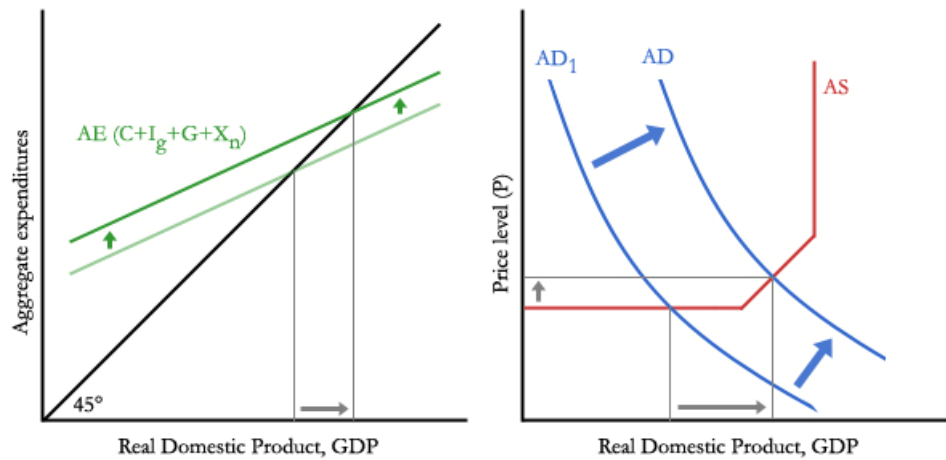
Both increased taxes and decreased government spending reduces consumption spending, which causes a decrease in aggregate demand (first graph). Then, if prices are flexible downward, the decrease in aggregate demand causes the equilibrium price level to decrease, ending the inflation. If prices are not flexible downward (because of the ratchet effect), the policy will stop price level from increasing. Since inflation usually occurs in the vertical range of the aggregate supply curve, GDP shouldn't decrease by much.



Recessionary situation

The government now needs to use an expansionary fiscal policy. The aim of the policy is to increase aggregate demand, which shifts the AD curve to the right and will cause an increase in real GDP.

The government has two tools to use: it can increase government spending or decrease taxes (or both). Increasing government spending will increase aggregate demand (since  $AD = C + I_g + G + X_n$ ). Decreasing taxes will increase consumption spending (it increases it by the tax increase times the MPC), which will also increase aggregate demand (graph 1).



Then, since aggregate demand is increased (rightward shift of AD curve), equilibrium GDP will either increase (if the economy is in the horizontal or intermediate ranges) or stop declining (if the economy is in the vertical range).

If the economy is on the horizontal range, the full effect of the multiplier will be felt: when AD increases by an amount, GDP will increase by the multiplier times that amount.

The final equilibrium will have a higher GDP and the same or slightly increased price level since recession usually means the horizontal range of the AS curve.

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**Impact of policies on AD/AS equilibrium**

An expansionary fiscal policy shifts (or tries to shift) the Aggregate Demand curve to the right. This will shift the equilibrium GDP up (as long as the economy isn't in the vertical range) and shift the price level up (as long as the economy isn't in the horizontal range). Usually, the government uses an expansionary fiscal policy when the economy is in the horizontal range, so the policy only shifts equilibrium GDP up. A contractionary fiscal policy shifts the Aggregate Demand curve to the left. This will lower equilibrium price level (when it's not in horizontal range) and lower equilibrium GDP (when it's not in vertical range). However, the economy is usually in the vertical range when the government uses this policy, so the policy usually only shifts price level down.

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**G vs. C, I**

G can be directly changed "on whim", since fiscal policy can quickly be enacted to change government spending. However, C and I are much more uncontrollable, since they both depend on confidence, which is a hard thing to change. They both, however, increase aggregate demand, and increase GDP by the amount times the multiplier.

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**Issue of Debt and Deficits**

Deficit spending is expansionary, and it counters recession. There's two ways of financing a deficit. The government can enter the money market and borrow, competing with private business borrowers for funds. This might cause a crowding-out effect, "taking up" some space for investment spending and consumer spending. The crowding-out effect reduces the expansionary impact of the deficit spending. The government can also make more money, making spending increase without any harm done to investment. However, making more money can have an inflationary effect too. To counter demand-pull inflation, fiscal policy has to involve making a budget surplus. However, a surplus can do one of two things: debt reduction (paying off debt, but then it might offset the anti-inflationary impact because the government is putting money back into circulation), or impounding (keeping the surplus funds, doing nothing with them; this way, the full extent of the anti-inflationary policy will be met). Debt can actually be inflationary because if the government tries to pay it off quickly, there will be inflation because the money supply increases.

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**Crowding Out Effect**

If the government were to finance a deficit (expansionary fiscal policy) by entering the money market and borrow money, it would make less room for investment, since as

the government's share of the "pie" grows, everyone else's becomes smaller. Then, investment spending decreases, causing aggregate expenditures to not increase as much.

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Balanced Budget Multiplier	<p>Equal increases in government spending and taxation increase the equilibrium GDP. If G and T are both increased by an amount, the equilibrium GDP will rise by the <i>same amount</i>, regardless of what the multiplier is.</p> <p>This happens because a change in government spending has more of an impact on AE than a tax change. This is because government spending has a direct effect on AE, i.e. a \$20 increase in government spending will result in a \$20 increase in AE. However, since if people are taxed, their consumption only decreases by a <i>fraction</i> of the tax (since the tax affects both savings and consumption). For example, a \$20 increase in taxes in an economy with a MPC of .75 only results in \$15 added to AE.</p> <p>Then, let's look at how much these values affect equilibrium GDP. Since the multiplier is 4, the \$20 increase by GDP results in a \$80 increase in GDP. Also, the \$15 decrease by taxes results in a \$60 decrease in GDP. Therefore, the net increase in GDP is 80–60 which is \$20, the same as how much G and T were changed.</p>
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### Monetary Policy

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Who controls?	<p>The Board of Governors of the Federal Reserve System ("Fed") is responsible for controlling the U.S banking system (and the money supply). The Board of Governors has seven members, appointed by the President with confirmation of the Senate. It directs the activities of the 12 Federal Reserve Banks, which then control the nation's banks.</p> <p>There are several entities that help the Board of Governors. The Federal Open Market Committee (FOMC) is made up of the 7 members of the BoG plus 5 of the presidents of the Federal Reserve Banks. It sets the Fed's monetary policy and directs open-market operations. There are also three Advisory Councils (made of private citizens) that meet with the BoG to give their views on banking and monetary policy.</p>
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Required reserve ratio	This is how much percent of a bank's reserves must keep on deposit with the Federal Reserve Bank or as vault cash.
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Money multiplier	Since banks lend their excess reserves, a system of banks will "magnify" original excess reserves into a larger amount of new demand-deposit money, causing the money supply to grow by more than the original excess reserves.
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$$\text{It is equal to } \frac{1}{\text{Required reserve ratio}}.$$

The maximum demand-deposit creation (money created) equals the excess reserves that can be lent out by commercial banks times the money multiplier.

For example, if someone deposited \$100 into a bank, and the required reserve ratio was 0.2, then the bank's excess reserves would increase by \$80, and since the money multiplier is  $1/0.2=5$ , the money supply will be increased by  $80*5=400$ .

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### Tools of Monetary Policy

It has three tools:

1. Open-market operations – these are the most important means the Fed as to control the money supply. It refers to the buying and selling of government bonds (securities) by the Federal Reserve Banks. Buying bonds increases the money supply; selling them decreases it.
2. The reserve ratio – the Fed can also increase or decrease the Reserve ratio. Increasing the Reserve ratio decreases banks' excess reserves, causing the money supply to decrease. Decreasing it increases banks' excess reserves, increasing the money supply. This is really powerful, and so it is not used very often.
3. The discount rate – the discount rate is the rate that Federal Reserve Banks charge for loans to commercial banks. When commercial banks borrow from FRBs, their reserves increase. Therefore, if the discount rate increases, banks are less encouraged to borrow, keeping their excess reserves the same and

therefore restricting the money supply.

Open-market operations –  
difference between  
buying/selling to the public  
and buying/selling to banks

If the Fed buys or sells securities to the public, the money supply will increase/decrease less than if the Fed buys or sells them to banks. This is shown in the following examples:

Let's assume that the required reserve ratio is 0.2. The money multiplier is then 5.

If the Fed buys \$1000 worth of securities from commercial banks, the excess reserves will increase by \$1000. Then, the money supply will increase by  $1000 \times 5 = 5000$ .

If they buy securities from the public, the public gets more money, and when they deposit it into banks (whether directly or indirectly), bank reserves increase. However, since the required reserve ratio is 0.2, the bank needs to put \$200 of the money in the Federal Reserve Bank, and so excess reserves only increase by \$800. Then, the money supply will increase by  $800 \times 5 = 4000$ .

If the Fed sells \$1000 worth of securities to commercial banks, then excess reserves will decrease by \$1000, so the money supply will decrease by  $1000 \times 5 = 5000$ .

If the Fed sells \$1000 of securities to the public, then after the transaction is cleared, the bank will have \$1000 less in securities. \$200 of that money can be taken from Federal reserves, and so excess reserves only decrease by \$800, causing the money supply to decrease by  $800 \times 5 = 4000$ .

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Checking account money	Most of it comes from demand deposits, which are deposits in commercial banks that are meant to be checkable.
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M1, M2, M3	M1 is the narrowest definition of money supply. It includes currency (coins + paper money) and checkable deposits (demand deposits in banks or thrifts). M2 includes M1 plus near-monies (highly liquid financial assets which do not directly function as a medium of exchange but can be readily converted into currency or checkable deposits without risk of financial loss). Near-monies are noncheckable savings accounts, money market deposit accounts, small time deposits, and money market mutual funds. M3 is M2 plus large time deposits.
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Change in composition of money	It does not necessarily impact stock of money in the economy, as it can still be considered money (because it can be redeemed for purchasing power at a later date).
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Transaction demand for money	This is the amount of money people want to use as a medium of exchange; varies directly with nominal GDP. It has no relationship with the rate of interest, so its qty demanded vs. interest rate graph is a vertical line.
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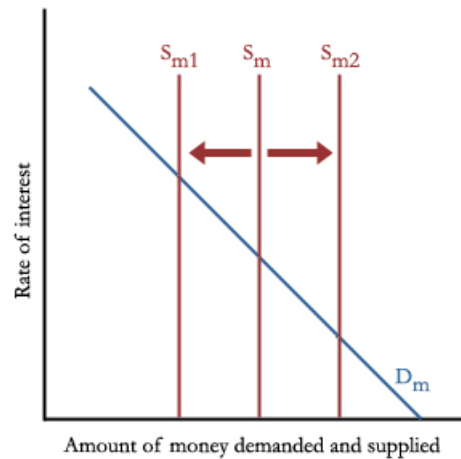
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Asset demand for money	This is the amount of money people want to hold as a store of value; varies inversely with rate of interest. Its qty demanded vs. interest rate graph has a negative slope.
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## Interest rate graph

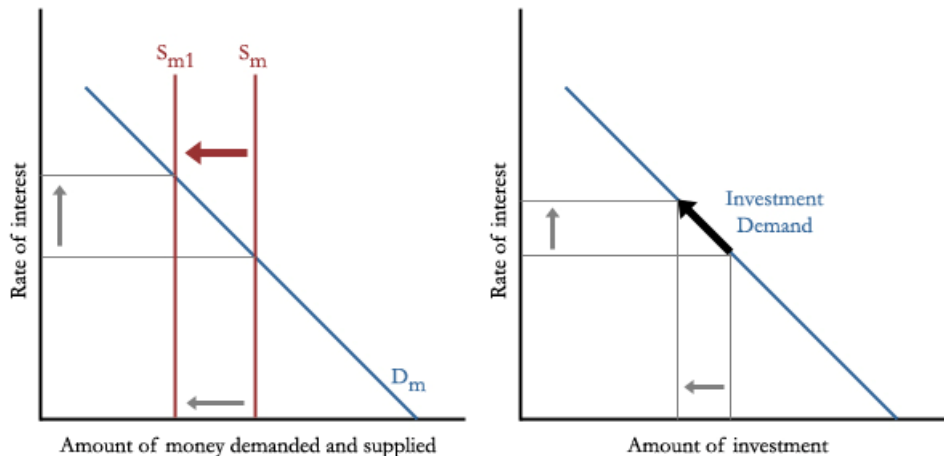


$D_m$ , or total demand for money, equals transaction demand plus asset demand.  $S_m$  is always vertical because quantity supplied doesn't vary with the rate of interest.

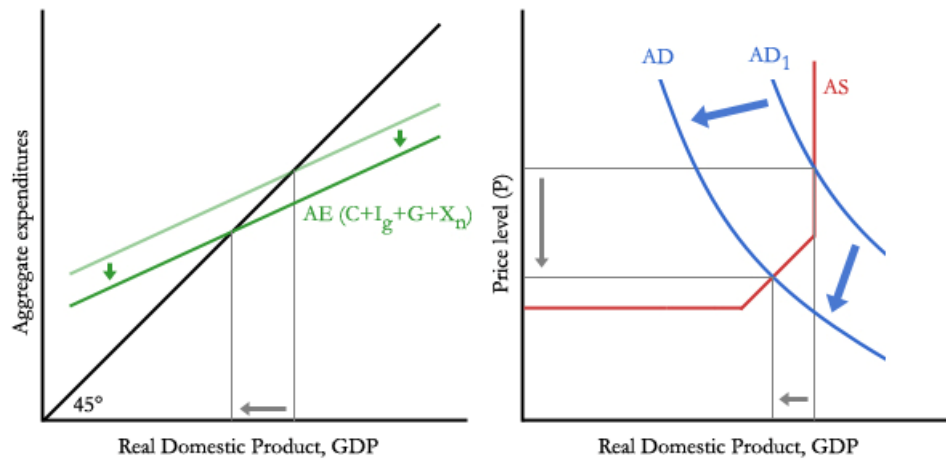
When the money supply decreases (shifts to the left), the price for money (which is the same as the interest rate) rises. When the money supply increases (shifts to the right), the price for money decreases.

### Inflationary situation

In this situation, we want a tight money policy. To do this, we can 1) sell government securities, 2) increase the reserve ratio, or 3) increase the discount rate. All three of these will decrease the supply of money. Our graphs will be as follows:



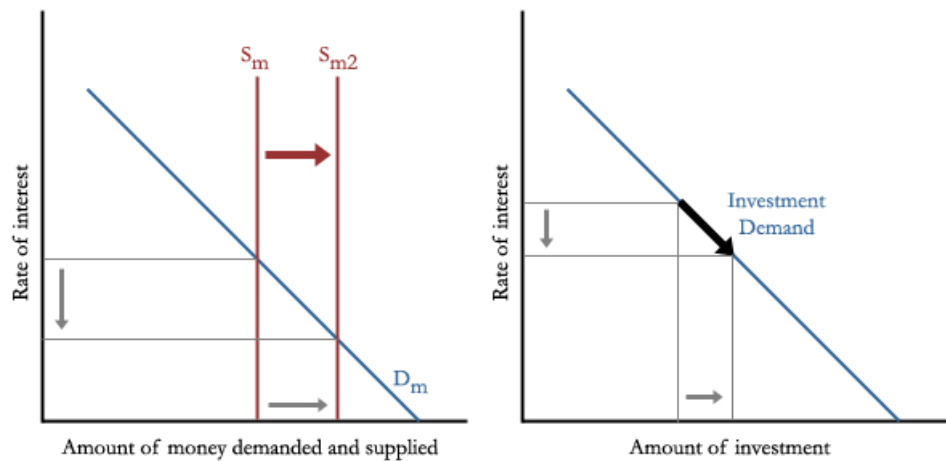
If supply of money decreases, then the rate of interest increases. Then, when the rate of interest increases, the amount of investment decreases.



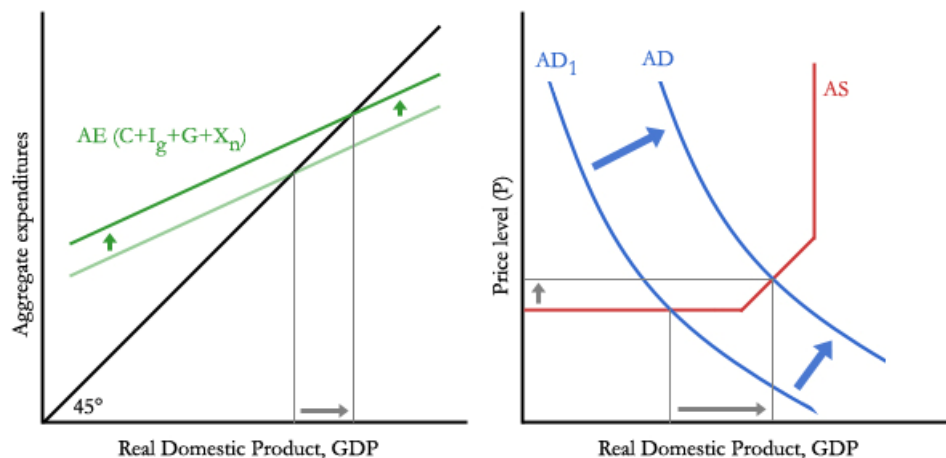
Then, since investment decreases, aggregate expenditures ( $C+I_g+G+X_n$ ) decreases. That then shifts the GDP down by the change times the multiplier. Finally, when GDP decreases, price level will drop (since the economy most likely is in the vertical range of the aggregate supply curve) and therefore inflation will decrease.

### Recessionary situation

In this situation, we want a loose money policy. To do this, we can 1) buy government securities, 2) decrease the reserve ratio, or 3) decrease the discount rate. All three of these will increase the supply of money. Our graphs will be as follows:



If supply of money increases, then the rate of interest decreases. Then, when the rate of interest decreases, the amount of investment increases.



Then, since investment increases, aggregate expenditures ( $C+I_g+G+X_n$ ) increases. That then shifts the GDP up by the change times the multiplier. Finally, when GDP increases, price level will stay about the same (since this economy most likely started in the horizontal range). Now since the GDP is increasing, we are out of a recession.

Net export effect	<p>Easy money policy → decreased foreign demand for dollars → dollar depreciates → net exports increase (AD increases, strengthening the easy money policy)</p> <p>Tight money policy → increased foreign demand for dollars → dollar appreciates → net exports decrease (aggregate demand decreases, strengthening the tight money policy)</p>
<i>Both fiscal and monetary</i>	
Summary: recessionary	<p>Fiscal policy: increase government spending, decrease taxes</p> <p>Monetary policy: loose money policy – buy government securities, lower reserve ratio, lower discount rate</p>
Summary: inflationary	<p>Fiscal policy: decrease government spending, increase taxes</p> <p>Monetary policy: tight money policy – sell government securities, raise reserve ratio, raise discount rate</p>

## V. Alternative Theories/Approaches

Stagflation	<p>Stagflation is increasing inflation and rising unemployment in an economy at the same time. It is usually caused by a decrease in supply (supply-shock inflation). Stagflation in the 1970s proved that the Phillips Curve didn't represent a stable inflation-unemployment relationship.</p>
Phillips Curve	<p>The main concept of this is a stable, inverse relationship between inflation and unemployment. The short-run Phillips curve has a negative slope; the long-run Phillips curve is vertical.</p> <p>The Adaptive Expectations Theory predicts that there is a short-run tradeoff between inflation and unemployment but there is no long-run tradeoff. In the short run, the inverse relationship works, but in the long run, it seems that the graph will always shift back to a vertical line.</p>
Supply-side economics	<p>They believe that changes in aggregate supply are active forces in determining the levels of both inflation and unemployment. Economic disturbances can be generated on both the supply side and the demand side of the economy. They also contend that certain government policies have reduced the growth of aggregate supply over time, and if these policies were reversed, the economy could achieve low levels of unemployment without producing rapid inflation.</p> <p>Supply-siders also say that the US tax-transfer system has “eroded” productivity and decreased incentives to work, invest, innovate, and assume entrepreneurial risks. If taxes were decreased, people would have more money after taxes and they would have more of an incentive to work.</p> <p>Supply-siders also believe that reductions in marginal tax rates increase aggregate supply. They believe in the Laffer Curve, which says that up to a certain point in tax rate, tax revenue increases, and at that point, tax revenue is a maximum. However, when taxes go past that point, tax revenue starts to decrease again. Criticisms of the Laffer Curve include 1) evidence that tax cuts don't necessarily increase incentive to work, 2) inflation might still occur because AD might overwhelm AS, and 3) no one knows where we are on the curve.</p>
“Old” Classical theory	<p>They believe that the AS curve is vertical and it is the only factor in determining real output. The AD curve is still downsloping, and classical economists view it as stable when the money supply is constant. Also, domestic output doesn't change when price level decreases; it's only the AD curve moving down. They believe in Say's law, which says that supply creates its own demand.</p>

“New” Classical theory	Their theory is that when the economy occasionally diverges from its full-employment output, internal mechanisms within the economy automatically move it back to that output. In their opinion, if a change in AD moves the equilibrium outside of $AS_{LR}$ , there will be a change in AS that will bring it back.
Rational Expectations Theory	<p>It states that businesses, consumers, and workers understand how government policies will affect the economy and <i>anticipate</i> the impacts in their own decision making. In other words, everyone knows what’s going to happen and they plan for it. For example, when the government begins some expansionary polices, workers will anticipate that a result will be higher inflation which would cause a decrease in their real wages. So, the workers quickly ask for more money for their nominal wage. If things work out well, there will be no temporary increases in profit, output, or unemployment.</p> <p>They also say that policies designed to push unemployment below its natural rate will quickly increase the rate of inflation, having no effect on unemployment.</p>
Monetarism	<p>Monetarists believe that the economy is stable in the long run at the natural rate of unemployment, and the observed instability of the economy is caused by inappropriate monetary policy. Keynesians, on the other hand, believe that the economy is potentially unstable and observed instabilities are caused by fluctuations in AD and AS.</p> <p>They believe that changes in the money supply directly changes AD, which directly changes GDP. They do not think investment is an important issue.</p> <p>Monetarists also believe that without government interference, the economy would be very stable. The government caused the economy to become what it is today: downward wage inflexibility, business cycles, etc.</p>
Monetarist Equation of Exchange	<p><math>MV = PQ</math>, where <math>M</math> is the supply of money, <math>V</math> is the velocity of money (the number of times per year the average dollar is spent on final goods and services), <math>P</math> is the price level (average price at which each unit of physical output is sold), and <math>Q</math> is the physical volume of goods and services produced.</p> <p>The left side is the total amount spent; the right side is total amount received.</p> <p>Monetarists believe that <math>V</math> is stable, or that the factors altering velocity change gradually and predictably.</p>

## VI. International Aspects of the Economy

Comparative Advantage	When it’s cheaper for one nation to produce something than another. For example, if two products on the production possibilities curve are coffee and wheat, and the United States needs to spend 2 coffees to make a wheat, while Brazil only needs to spend 1.5 coffees, Brazil has a comparative advantage over the US in wheat (because it’s relatively cheaper to make) and the US has a comparative advantage over Brazil in coffee.
Terms of Trade	The price of a good or service (the amount of one good or service which must be given up to obtain one unit of another good or service).
Exchange rates	<p>Flexible exchange-rate system: rates at which national currencies are exchanged for one another are determined by demand and supply and in which no government intervention occurs.</p> <p>Fixed exchange-rate system: governments determine rates at which currencies are exchanged and make necessary adjustments in their economies to ensure that these rates continue</p>
Appreciation/depreciation of money	When the currency depreciates, then American goods seem cheaper to foreigners, so they will buy more, increasing exports, and making the trade balance “more favorable”. Likewise, when the currency appreciates, American goods seem more expensive to foreigners, and foreign goods seem cheaper to Americans, so imports

increase and the trade balance becomes “less favorable”.

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Fiscal/Monetary policy	<p style="text-align: center;"><i>Fiscal</i></p> <p>Expansionary policy → higher domestic interest rate → increased foreign demand for dollars → dollar appreciates → net exports decline → balance of trade becomes less “favorable”</p> <p>Contractionary policy → lower domestic interest rate → decreased foreign demand for dollars → dollar depreciates → net exports increase → balance of trade becomes more “favorable”</p> <p style="text-align: center;"><i>Monetary</i></p> <p>Easy money policy → decreased foreign demand for dollars → dollar depreciates → net exports increase → balance of trade becomes more “favorable”</p> <p>Tight money policy → increased foreign demand for dollars → dollar appreciates → net exports decrease → balance of trade becomes less “favorable”</p>
Favorable/unfavorable trade balances	<p>If exports exceed imports, you get a trade surplus which is considered a “favorable balance of trade”. If imports exceed exports, you get a trade deficit which is considered an “unfavorable balance of trade”.</p> <p>A “favorable” balance of trade is not entirely good, however. We cannot buy as much foreign goods now (since our dollar is worth less) so foreign companies don’t get as much business from us. However, when foreign prices rise, Americans turn to American companies to buy things from, helping American companies make more money.</p> <p>Likewise, a “unfavorable” balance of trade isn’t entirely bad either. Since our dollar has grown in value, we can buy more foreign goods, so foreign companies get more money. However, because of cheaper foreign goods, American companies won’t get as much business (or they have to lower prices), so they don’t get as much money.</p>

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## VII. AD/AS Graph

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Aggregate Demand Shifters	<p style="text-align: center;">These cause shifts in aggregate demand:</p> <ol style="list-style-type: none"><li>1. C (consumer wealth, consumer expectations, household indebtedness, taxes)</li><li>2. I (interest rates, expected returns on investment, business taxes, technology, degree of excess capacity)</li><li>3. G</li><li>4. <math>X_n</math> (National income abroad, exchange rates)</li></ol>
Aggregate Supply Shifters	<p style="text-align: center;">These cause shifts in aggregate supply:</p> <ol style="list-style-type: none"><li>1. Input Prices (domestic resource availability [land, labor, capital, entrepreneurial ability], prices of imported resources, market power)</li><li>2. Productivity</li><li>3. Legal – institutional environment (business taxes and subsidies, government regulation)</li></ol>
AS Curve ranges	<p>Horizontal range – includes only real levels of output which are substantially less than full-employment output. A change in real output in this range won’t affect price level at all.</p> <p>Vertical range – economy has already reached its full-capacity real output. Any increase in the price level at this range won’t affect real output at all.</p> <p>Intermediate range – an expansion of real output is accompanied by a rising price level. The full-employment output is found in this range.</p>

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This is the end of the study guide. If you find any errors or have any questions or comments about this study guide, feel free to email me at [fenguin@gmail.com](mailto:fenguin@gmail.com). Thanks a lot for reading, and good luck on finals!

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