

Macroeconomics Checklist

Content	Definition ✓	Diagram <i>None</i>	Theory/Explanation ✓	Real Life Example ✓
<ul style="list-style-type: none"> • GDP ✓ • GNI ✓ • Business Cycle • Limitations.. <p>Limitations of GDP/GNI:</p> <p>1) Underground economy goes unrecorded. E.g. <u>Illegal cigarette industry in Australia.</u></p> <p>2) Do not include unsold output, example - <u>subsistence farming in India.</u></p> <p>3) Do not consider (HDI) education, healthcare & life expectancy. No quality of life.</p> <p>4) Do not consider the environmental damage & pollution. No negative externalities. E.g. <u>China Beijing Carbon Emissions</u></p> <p>HDI: Income, Health, Education PPP: Compare economies Green GDP: Takes into account the environmental destruction from the consumption & production.</p>	<p><u>GDP</u> - the total value of goods and services produced in the <u>bound</u> geographical boundaries of a country, over a period of time. Philippines \$300 billion</p> <p><u>GNI</u> - the total value of goods and services produced in an economy plus the net factor income ^{from abroad} (Income earned abroad by citizens - Income earned domestically by foreign parties) over a period of time</p> <p><u>GNI = GDP + Net Factor income from abroad</u></p>		<p>The 2 measures of Economic activity</p> <p>Philippines 2016: GDP = \$300 billion, GNI = \$400 billion</p> <p>Nominal Values of GDP/GNI are in terms of <u>current prices</u>. Not inflation adjusted. Real Values of GDP/GNI are inflation adjusted and eliminate price change influences.</p> <p>GDP per capita = $\frac{\text{total GDP}}{\text{Population}}$</p> <p>GDP deflator = $\frac{\text{nominal GDP}}{\text{real GDP}} \times 100$</p> <p>GDP is measured in 3 ways:</p> <p><u>Expenditure Approach</u> $C + I + G + (X - M)$ Allows comparison between C, I, G, X, M</p> <p><u>Income Approach</u> Rent + Wages + Interest + Profit Allows comparison of which FOP contributes more & less.</p> <p><u>Output Approach</u> Adding up all output values from different sectors Allows comparison between sectors.</p> <p><u>Business Cycle</u> Leakages: Saving, taxes, import spending S, T, M Injections: Investment, Govt. spending, export spending I, G, X</p>	
			<p>GDP decreases \neq GDP growth decreases China's GDP growth target is 7% per year.</p>	

Leakages & injections cause the fluctuations of inflationary & deflationary gaps.

Content	Definition	Diagram	Theory/Explanation	Real Life Example
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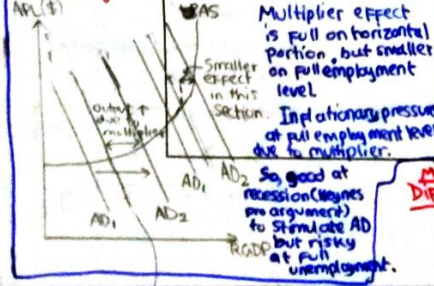
- Aggregate Demand
- Aggregate Supply
- Components

HL - Multiplier effect (Keynesian) (Fiscal policy) = a multiplied effect on AD, and hence on Y_f due to a Δ in spending.

Explanation: Spending of an individual is income of another. So any spending change leads to a chain reaction of income changes and further spending changes.

$GR = \frac{1}{1-MPC}$ at least one FOP is fixed. Depends on spending, saving, marginal propensity to save, spending, tax & import.

Very important for govt. to know size of multiplier. In a recession, when govt. increases Δ in spending, it underestimates size of multiplier. It has to raise taxes & lower spending eventually, but the decrease was too greater due to multiplier, leading to recession that was serious. So, 2 mistakes the govt. made.



Aggregate Demand refers to the total planned spending on goods & services over a period of time.

$$AD = C + I + G + (X - M)$$

Aggregate Supply refers to the total planned level of output that is produced in an economy over a period of time.

SRAS - there are fixed money wages. Why? labor contracts, workers are slow to realize inflation effects.

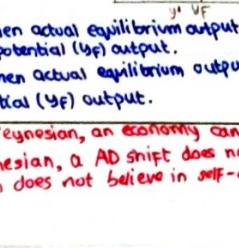
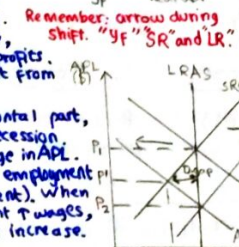
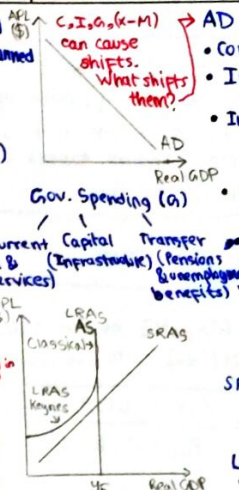
LRAS Classical - all FOP are variable in long-run. In LR, economy produces at full employment at Y_f .

In LR, when prices \uparrow or \downarrow , so do wages due to Δ profits. So, output is independent from APL.

LRAS Keynes - in horizontal part, unemployment is high. Recession. \uparrow output means no change in APL. At vertical, we have full employment (with natural unemployment). When APL rise, employees want \uparrow wages, and so output does not increase.

Inflationary Gap - when actual equilibrium output is greater than potential (Y_f) output.

Deflationary Gap - when actual equilibrium output is below potential (Y_f) output.



AD shifts due to these factors:
 • Consumer confidence. Business confidence.
 • Interest rates: (C) borrowing & saving (I) firm borrow to invest.
 • Income and business taxes: (C) Disposable income (I) Profits for reinvestment
 • Government spending changes due to changing priorities.

Net exports change:
 1) Exchange rate \downarrow , $(X - M) \uparrow$
 2) Trade protection changes domestic & abroad
 3) Growth & spending abroad & domestically

SRAS shifts due to:
 • Tax & Subsidies
 • Production costs
 • Natural Shocks

LRAS shifts due to:
 • \uparrow Quantity of FOP (including decreasing rate of natural unemployment)
 • \uparrow Quantity of FOP
 • Efficiency & Productivity \uparrow
 • Technological & Institutional improvements \uparrow

Classical Equilibrium
 Assume, AD shifts left. So, initially in SR as money wages are fixed, price $\rightarrow P'$ and $RADP \rightarrow Y'$. There is deflationary gap. In LR though, money wages adjust and fall due to \downarrow profits. So, SRAS \uparrow & shift to right. So, economy always returns to Y_f in LR.

So, Keynes believes the effective demand determines equilibrium. If AD in market forces is insufficient, then govt intervention is needed to restore full employment. If AD in (i), due to very low consumer & business confidence & general pessimism, then govt must \uparrow spending to shift it to AD2 and hence (ii). No \uparrow APL in (i) as low employment level. There is inflationary gap if AD shifts in section (ii).

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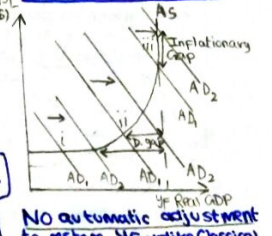
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- \uparrow Quantity of FOP (including decreasing rate of natural unemployment)
- \uparrow Quantity of FOP
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- Technological & Institutional improvements \uparrow

Japanese Govt. uses negative base rates to increase AD by increasing consumer and business borrowing.

South-Korean President Moon Jae-In focuses on supply-side growth. Increasing spending on education and healthcare.

Keynesian Equilibrium



NO automatic adjustment to restore Y_f unlike Classical. So, Keynes believes the effective demand determines equilibrium. If AD in market forces is insufficient, then govt intervention is needed to restore full employment. If AD in (i), due to very low consumer & business confidence & general pessimism, then govt must \uparrow spending to shift it to AD2 and hence (ii). No \uparrow APL in (i) as low employment level. There is inflationary gap if AD shifts in section (ii).

Main Differences

- So in Keynesian, an economy can remain stuck in a deflationary gap, but not in Classical.
- In Keynesian, a AD shift does not have to be inflationary. Only inflationary in section (iii).
- Keynesian does not believe in self-adjusting equilibrium. Classical does.

Remember that in inflation or deflation graphs, only SRAS shifts. Draw SRAS curve not LRAS when doing supply shift.

Content	Definition	Diagram	Theory/Explanation	Real Life Example
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- Macro Objectives
- Prioritization
- Trade-Offs

- 1) Low Unemployment 2) Low and stable inflation rate
 3) Economic Growth 4) Distribution of Income-Equity

For demand shift, both SRAS and LRAS are ok since they don't shift.

2) Low and Stable Inflation Rate

Inflation = a general or persistent rise in average prices of goods & services in an economy over a period of time.
Deflation = a general or persistent fall in " " "
Disinflation = a fall in the rate of inflation.

India inflation = 4.5% Zimbabwe Housing crisis 2008 : 79 billion%

Measured using **Consumer Price Index (CPI)**
 CPI uses a basket of goods with common household items and compares cost of buying these goods from one year to next.
 - Different consumers have different baskets: Rich & poor.
 - Product quality may improve, but CPI does not account this.
 - Consumption patterns change consistently year on year. So basket is not valid.

Underlying rates of inflation
 Take out volatile products. Oil & luxury products, foods
 Oil prices in India fluctuate 10-20% a year for one barrel.

OF INFLATION (HIGH)

- CONSEQUENCES**
- 1) **Redistribution effects**: Lender loses, Borrower wins
 - 2) **Uncertainty**: Firms can't predict prices & sales. Will stop investment, so ↓ Economic Growth as AD ↓.
 - 3) **Less Saving**: Inflation > Interest rate. So, public does not save. Loss of confidence.
 - 4) **Export competitiveness is damaged** - Exports are more expensive to foreigners, while imports are cheaper & more attractive for local public. $(X-M) \downarrow$, AD ↓ and RGDP ↓. Also can lead to trade deficit. *More later, Phillips Curve*
 - 5) **Increasing production costs cause unemployment** - companies reduce the most variable FOP to reduce costs. *Argentina 2017: 30%. Reduce exports of soy products*

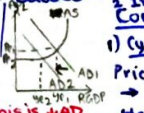
There has to be a trade-off. Government prioritizes certain objectives at different times.

India and Kenya focus on lower unemployment. But, Japan's unemployment rate is already very low and it is focusing on sustainable economic growth.

Trade-off: Economic Growth may cause uneven distribution of income. For e.g. China has 10% growth in R.GDP every year, but income distribution worsens.

Economic Growth vs Inflation

Consequences of Deflation
Causes = Falling Wages make it difficult to
 1) Falling Aggregate Demand. Usually in recession, (AD ↓)
 2) Increase in SRAS. Good because RGDP increases.
Consequences But, all deflation is dangerous.
 1) **Cyclical Unemployment & deflationary spiral**
 Price level ↓ → Consumers postpone spending → AD falls further → Price level ↓ → Postpone spending
 Hence, a spiral forms, deepening the recession & causing cyclical unemployment.
 2) **Redistribution effects**: Lender wins, like commercial banks. But, borrower is incapable of returning loan. Sometimes, Lender ↑, Borrower lose ↓
 3) **↑ Increase in export competitiveness**, as lower prices means exports are more attractive to foreigners. $(X-M) \uparrow \rightarrow AD \uparrow \rightarrow$ Real GDP ↑



Solution: Expansionary demand-side policies (Fiscal & Monetary)
 Stimulate AD and ↑ AD & ↑ RGDP

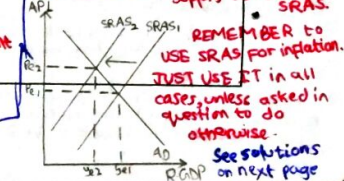
Japan using negative interest rates to prevent deflation.
 Inflation rate = 0.5% in 2017.
 Wants to prevent deflationary spiral & cyclical unemployment & recession.
 Using expansionary monetary policy

TYPES AND CAUSES OF INFLATION

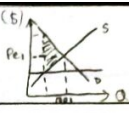
Demand-pull inflation - Shift right due to C, I, G, M in AD. Only inflation in sector (iii) (Bain). Keynes
 Remember to use SRAS. Normal Supply Law. Or LRAS is ok since no shift in supply. Not both only drawn for reference.

Cost-push inflation
 Leftward shift in SRAS. Due to ↑ production costs or supply shocks. Cannot use Keynes supply curve. Use SRAS.

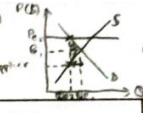
More serious as R.GDP falls. AKA stagflation.
 REMEMBER to USE SRAS for inflation. JUST USE IT in all cases, unless asked in question to do otherwise. See solutions on next page



So the triangle is: top & bottom corner is the P & Q at that output. Middle corner is the initial P before price control.



Price Control
Welfare loss



$Q_1 - Q_2 = \text{Unemployment}$

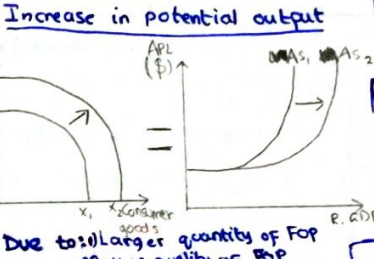
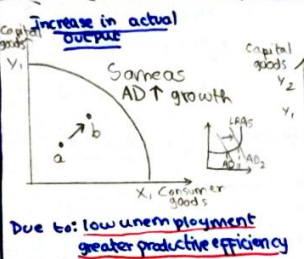
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- Growth
- Income Distribution

Economic Growth - refers to an increase in real output of an economy over a period of time. It is usually measured through GDP values.

CONSEQUENCES OF Economic Growth

- + Improved living standards (more output per capital)
- + Lower Unemployment (from job creation)
- + Lower inflation (LRAS growth)
- + Smaller trade deficit (if growth comes from export sales)
- Living standards may not improve (growth based on ↑ Military goods or only luxury goods)
- Unemployment can increase (No job creation. Inappropriate technologies)
- Higher Inflation (if AD ↑)
- Higher trade deficit as import consumption increases
- Unsustainability - growth from polluting technologies & methods. In Beijing, it is difficult to see the sun due to pollution.



Importance of Investment in Economic Growth

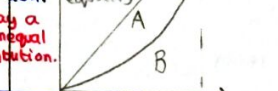
- 1) In physical capital: machines, roads, etc.
 - + Larger quantity of capital goods
 - + Improved quality of capital goods
 - + Include technological improvements.
 - + Increase potential output & productivity
 - 2) In human capital: skills, education, health to
 - + make people more productive
 - + Improved quality of labour
 - 3) In natural capital: natural resources + better quality
 - + Greater quantity of natural resources of natural resources.
- All of above leads to improved productivity of workers, thus creating economic growth.

Equity in distribution of Income

Income equity = everyone gets a fair amount of income. Fairness can be interpreted differently.
Income equality = get same income.

China's GDP growth is 10% over past years due to better technology, quantity & quality of FOP.

Visual representation of income distribution between population. The further away a curve, the more unequal the income distribution.



Market system distributes income based on ownership of FOP. Some people have more FOP than others, so market system distributes income unequally.

- Direct taxes = taxes on income & wealth, paid directly to government.
- Indirect taxes = taxes on spending to buy goods & services, paid indirectly to government through the seller (sales tax, value added tax (VAT)).
- Remember Marginal & Average Progressive taxes: % of income paid as tax increases with income.
- Proportional taxes: % of income paid as tax (avg. tax rate) remains constant as income increases.
- Regressive taxes: % of income paid as tax (avg. tax rate) decreases with income.

Causes of Poverty

- Very low incomes
- Unemployment
- Lack of human capital: So, low productivity → Low incomes

Consequences of Poverty

- Low living standards
- Lack of access to healthcare
- Lack of access to education
- High mortality rate
- Social unrest: crime, alcoholism, which lowers life quality for all and needs govt. attention & expenditure.

Policies to promote equity in income distribution & their effects on efficiency

- 1) Progressive taxes: Helps decrease the income differences between rich & poor. Tax can be used for merit & public good.
- 2) Govt. use tax revenues for merit & public goods, or subsidize them. Education, Healthcare & infrastructure.
 - + Positive consumption externalities of merit goods (inefficiency) is corrected when govt. subsidizes or supplies.
 - Opportunity cost of govt. spending
 - Negative effect on budget (flow)
- 3) Price controls - support farmers and low-skilled workers (minimum wage)
 - Minimum wages cause unemployment as there is excess demand supply
 - Allocative inefficiency, welfare loss.

Poverty cycle

20% poverty rate of India. Living below poverty line. 240 million ppl

Poverty: Inability to satisfy basic needs.

Relative Poverty: People who have income below a pre-defined level of median.

Absolute Poverty: People with income level below a pre-defined "poverty line" that is min. to satisfy basic needs.

World Bank: \$1.25

Gini Coefficient: $\frac{A}{A+B}$

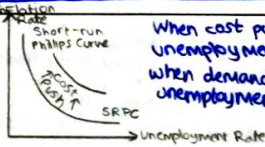
0 < x < 1

0 is best, 1 is worst.

South Africa: 0.65
Finland: 0.25

Content	Definition	Diagram	Theory/Explanation	Real Life Example
<ul style="list-style-type: none"> Unemployment Inflation <p>Policies to deal with Inflation</p> <p>Demand-pull</p> <p>Contractionary demand-side policies</p> <p>Fiscal $G \downarrow T \uparrow$</p> <p>+ Can be effective + $G \downarrow$ has direct impact as it shifts AD - Time delays - Politically unpopular/corruption</p> <p>Monetary $M \downarrow$ Money supply \downarrow</p> <p>Money supply $\downarrow \rightarrow$ I-rates \uparrow + Quicker to implement + No political interference - Time lag - Indirect</p> <p>Cost-push</p> <p>Contractionary demand-side policies - but, they deepen recession as $AD \downarrow$ to lower APL</p> <p>Supply-side policies</p> <p>- Time lags + Appropriate If cost-push is due to \uparrow wages, then have labour market reforms</p> <p>If \uparrow prices from monopoly power, then reduce monopoly power.</p> <p>If \uparrow APL from rising raw material costs like oil, reduce dependence on it.</p> <p>Supply-side policies where AS shifts can resolve both demand-pull & cost push</p> <p>+ Lower inflation as APL falls + Economic growth - Long time to take effect - Can increase inequality & poverty - Technological shift no job creation.</p>	<p>Unemployment = refers to no. of people in labour force who are actively looking for work but don't have a job.</p> <p>Problem: underemployment, hidden unemployment</p> <p>Not adequate work</p> <p>People who stopped looking after trying are excluded.</p> <p>Puerto Rico: 13.7% Qatar = 0.4%</p> <p>Unemployment rate = $\frac{\text{no. of unemployed people}}{\text{Labor Force}} \times 100$</p> <p>Consequences of unemployment:</p> <ol style="list-style-type: none"> 1) Loss of potential output. far from Y_f 2) Lower income tax for govt. 2) Higher cost for govt. of unemployment benefits. Australia: \$1000 per month 4) Increased social unrest and crime rates 5) Increased stress levels - poorer health 6) Increased indebtedness - people borrow <p>Social Consequences 67% unemployment for 14-21 year olds. Social unrest & crime.</p>			
	<p>Frictional Unemployment - short-term unemployment when people are moving between jobs. Usually voluntary</p> <p>Solution: Supply-side interventionist policies to provide info. about available jobs. Job centers/agencies</p> <p>+ Reduces time of frictional unemployment - Opportunity cost of govt. spending - universal reason</p>		<p>Seasonal Unemployment - short-term, affecting workers whose jobs change with season. E.g. Tourist Industry.</p> <p>Solution: Supply-side interventionist policies to provide info. about jobs in different seasons. + Reduce time to find job - Opportunity cost of govt. spending.</p>	
	<p>Cyclical Unemployment - unemployment caused by falling Aggregate Demand. $AD \downarrow \rightarrow R. \text{ output } \downarrow \rightarrow$ Labour demand \downarrow</p> <p>Solution: Expansionary Fiscal policy + $G \uparrow$ has direct impact on AD - Crowding Out</p> <p>Expansionary monetary policy + Quicker to implement + No crowding out - Ineffective in deep recession - People/companies afraid to borrow & bank afraid to lend.</p>	<p>Leads to the graph on right. So 2 graphs for cyclical.</p> <p>Supply side policy ineffective usually.</p>	<p>Structural Unemployment - (most serious) occurs due to mismatch between skills available and skills demanded. Usually, due to rapid technological innovations. Redundancy.</p> <p>2) Structural changes/geographical changes or low competitiveness</p> <p>3) Labour market rigidities like: labor union, unemployment benefits, minimum wage, protection laws.</p> <p>Important: Wages are sticky downwards. Hence, remain at W_0, and the difference between L_1 & L_2 shows unemployment. Due to labour market rigidities.</p> <p>① Solution: Supply-side interventionist policies like training programs, education scholarships, subsidise education & their living. - Opportunity cost of spending relation to employable regions.</p> <p>② Market based supply-side policies Reduce min. wage so firms set-up here. Labour reform Lower unemployment benefits so workers work for low pay. Reduce labor protection - Increase labor insecurity = Exploitation of labour. Still poor. + No effect on govt. budget. Gain from no unemployment benefits.</p>	
	<p>Frictional unemployment: graduates, mothers after giving birth</p> <p>Cyclical Unemployment: 2008 Housing crisis, 2 million construction workers lost jobs.</p> <p>Structural Unemployment: Newspaper employees such as journalists and delivery men are laid off since tech. advances means E-newspapers are read. Farmers are unemployed when economy moves into secondary or tertiary sectors.</p> <p>Seasonal Unemployment: tourism, tourist guides. Employed in holiday season and then laid-off.</p>			

The Phillips Curve relates inflation & unemployment



When cost push inflation, unemployment also rises. When demand-pull inflation, unemployment falls

It is a trade-off between unemployment and inflation rate.

Use multiplier only for fiscal

Multiplier Effect is prominent in fiscal policy as there is G ↑

(Short term) (Minimize fluctuations in business cycle) Demand-side Policy

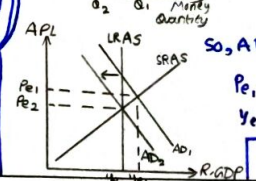
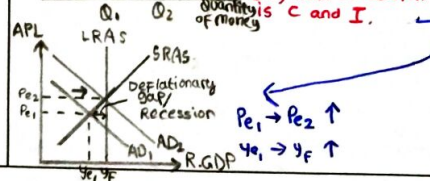
Taxes are divided into: Income taxes ⇒ C ↓ Corporate taxes ⇒ I ↓

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<ul style="list-style-type: none"> Fiscal Policy Expansionary Both <p>Overview</p> <p>Demand-side: Manipulate AD</p> <p>Eliminate short-term fluctuations in cycle, such as inflationary & deflationary gaps, to achieve low inflation & low unemployment.</p> <p>In recession (deflationary gap): Expansionary $G \uparrow$ or Taxes \downarrow so $C \uparrow I \uparrow$ $\Rightarrow AD \uparrow$</p> <p>In boom (inflationary gap): Contractionary $G \downarrow$ or Taxes \uparrow so $C \downarrow I \downarrow$ $\Rightarrow AD \downarrow$</p> <p>Also has LRAS effects. Govt. spending can be on infrastructure and human capital, which increases LRAS. These are basically supply-side policies.</p> <p>↓ Corporate taxes also mean ↑ investment in FOP, increasing LRAS.</p> <p>Indirect effect: maintain low inflation & unemployment (automatic stabilizers), which creates incentives for businesses to invest in capital & labor, improving productivity.</p>	<p>Fiscal Policy - is the manipulation of taxes and govt. spending to achieve macro-objectives.</p> <p>Sources of govt. revenue: direct & indirect taxes, sales of good & services provided by govt.</p> <p>Types of govt. expenditure: Current Expenditure (day-day operations of govt. (Wages, subsidies)) Capital Expenditure (spending on public investments (roads, airports, schools)) Transfer Payments (Unemployment benefits, Pension, etc)</p> <p>Budget surplus: govt revenue > expenditure Budget deficit: govt. revenue < govt. expenditure Balanced budget: govt. revenue = govt. expenditure</p>	<p>Short-term Demand Management</p> <p>(Actually shown properly with Classical only.) But, can use Keynes.</p> <p>Recessionary/Deflationary gap $Y_e < Y_f$, insufficient AD Increase spending, reduce tax $C \uparrow I \uparrow G \uparrow$</p> <p>Inflationary Gap $Y_e > Y_f$, excess AD Contractionary policy $C \downarrow I \downarrow G \downarrow$ \Rightarrow Tax, ↓ Spending</p> <p>Can use Keynes if not asked to show gaps or fluctuations.</p> <p>Moon Jae-In, South Korea, has implemented expansionary fiscal policy. He doubled the yearly increase in fiscal spending from 3-5% to 7-9% (great jobs, free education, growth, living standards). LRAST.</p> <p>Highly unpopular as can lead to a deflationary spiral & cyclical unemployment. US government in 2012 reduced G to reduce inflation, but is slowed down recovery from 2008 recession.</p>	<p>Automatic Stabilizers</p> <p>What are they?: Features of economy that limit the size of economic fluctuations (deflationary & inflationary) without involving govt. action, thus stabilizing economy.</p> <p>Progressive Taxes (Singapore, India) As RGDP ↓ & incomes ↓ due to unemployment, govt. earns less in a progressive tax system. So, disposable incomes fall proportionately less (average tax ↓). Consumers can spend more. So, AD falls less.</p> <p>Unemployment Benefits (UK, Canada, Australia) Australia: \$1000 per month When unemployment increases, G ↑ on unemployment benefits. Partially compensates the income loss, which means AD falls less.</p> <p>Inflationary RGDP ↑ & incomes ↑ (increments), income taxes rise proportionately faster, so disposable incomes increase by less. AD increases less, thus lowering fluctuation.</p> <p>Unemployment falls, and so G on unemp. benefits, partially reducing income rise. So, spending decreases a bit & AD increases less.</p>	
	<p>Evaluation of Fiscal Policy Crucially Important</p> <ul style="list-style-type: none"> Automatic stabilizers (have) Targets specific sectors (e.g. spend on schools, hospitals, roads) Can affect LRAS if expansionary, leading to economic growth. <p>Govt. Spending has direct impacts on AD, so fiscal is more direct policy. + Effective in recession. (Monetary can be ineffective) (if already 0)</p>		<p>CROWDING OUT (WEAKNESS (ONE OF THE WEAKNESSES))</p> <p>Govt. often borrows money to carry out expansionary fiscal policy to ↑ G. This increases demand for money, causing interest rates to rise in economy. As interest rates rise, ↑ savings & ↓ borrowing ⇒ ↓ spending & investments. (C) (I)</p> <p>AD₁ → AD₂ → AD₃. So, effect of policy is reduced.</p>	

Expansionary

Demand-side policy (Short-term) (To minimize business cycle fluctuations)

Content	Definition	Diagram	Theory/Explanation	Real Life Example
<ul style="list-style-type: none"> Monetary Policy Expansionary Interest Rates 	<p><u>Monetary Policy</u>: refers to changing management of interest rates by changing the money supply. This is done by central bank.</p> <p><u>Role of Banks (central)</u></p> <ol style="list-style-type: none"> 1) Banker for government: borrow & deposit 2) Lender to commercial banks 3) Responsible for monetary policy & supply. 4) Responsible for interest rates. 5) Responsible for exchange rate policy. <p><u>Monetary Policy & Short-term Demand Management</u></p> <p>Monetary policy affects C and I to shift AD. If interest rates ↑, cost of borrowing ↑, so lower consumption C & investment spending ↓ through borrowing.</p>		<p><u>Interest Rates</u>: payment for borrowed money over a time period, as a percentage of total amount.</p> <p>Money Supply (S_M) is fixed by central bank and hence vertical.</p> <p>The interest rate is determined by intersection of S_M and D_M, which is initially r_1. If govt. wants to lower interest rate, it must increase money supply. $S_{M1} \rightarrow S_{M2} \rightarrow r_1 \rightarrow r_2$. To raise interest rate from r_1 to r_3, govt. decrease S_M to S_{M3}. Money supply ↓</p>	
	<p><u>Expansionary</u></p> <p>Deflationary gap A recession</p> <p>1) $C \uparrow$ 2) $I \uparrow$ 3) Depreciation in exchange rate $(X-M) \uparrow$</p> <p>Interest rates ↓, causing $(X-M)$ ↑ Money supply ↑.</p> <p>AD ↑ due to expansionary policy. $C \uparrow$ $I \uparrow$ & as exchange rate depreciates, $(X-M) \uparrow$ as exports are cheaper abroad & demanded more, while imports ↓.</p> <p>But, main discussion is C and I.</p>		<p>1) Money Supply ↓ 2) $IR \uparrow$</p> <p>3) $C \downarrow$ $I \downarrow$ $(X-M) \downarrow$ (Appreciation)</p> <p>4) $AD \downarrow$</p> <p>As money supply decreases interest rates rise. Borrowing ↓ Appreciation $C \downarrow$ $I \downarrow$ $(X-M) \downarrow$</p>	<p><u>Contractory</u></p> <p><u>Inflationary gap</u> Policy</p> <p>Evaluating Monetary Policy</p> <ul style="list-style-type: none"> + No political influences as central bank manages it. No tax revenue or govt. budget involved. + Interest rates can be adjusted of b'n, so they are more flexible and can be used frequently to solve gaps in cycle. + Quick to implement than Monetary policy + No budget deficits & debts + No crowding out. <p>- Some time delays, as people & businesses are first informed & then influenced + shorter than fiscal tho.</p> <p>- Ineffective in deep recession. As interest rates can go down a lot, but banks are fearful to lend and firms/people fearful to borrow.</p> <p>Japan using low interest rates to stimulate economy.</p> <p>- Inflationary when expansionary for long</p> <p>- Problematic in cost-push inflation as it makes recession worse if lower AD.</p>
	<p>China raise interest rates in 2015 October to counter inflation counter inflation due to slump in local currencies. So $APL \downarrow$. Maintain low inflation with monetary policy. The local currency slump was also cured, but that $(X-M) \downarrow$.</p>		<p>So, AD decreases.</p> <p>$P_e \rightarrow P_e \downarrow$</p> <p>$y_e \rightarrow y_f \downarrow$</p>	<p>Fiscal is Moon Jae In $AD \uparrow$, $G \uparrow$</p> <p>Monetary is Japan $AD \uparrow$ try to use expansionary through $IR \downarrow$</p>



Supply-side policies (Long-term) (Increase potential output)

Content	Definition	Diagram	Theory/Explanation	Real Life Example
<p>Overview</p> <ul style="list-style-type: none"> Supply Side Policy Market based vs. Interventionist 	<p>Supply-side policies: these are policies that aim to increase long-term aggregate supply (LRAS) to achieve long-term economic growth & increase in potential output.</p> <p>Two types: Interventionist and Supply-side</p>			<p>Interventionist: Moon Jae-In South Korea. ↑G</p> <p>Market oriented: Bahrain has no corporate tax or business tax</p>
	<p>Interventionist supply-side policies: Supply-side policies based on govt. intervention in economy to directly increase the productive capacity of the economy.</p> <p>4 main types.</p>	<p>Investment in Human Capital</p> <p>Involves Govt. spending on training & education, and health-services, to increase labor productivity. Leading to EG and increase in potential output. Also, TG leads to ↑AD. Moon Jae in, South Korea 500000 jobs by ↑ Education, Health ↑</p>		<p>Investment in Infrastructure</p> <p>Involves govt. spending on infrastructure. = Physical capital. E.g. roads, airports, electricity supply, harbors, etc. They increase productivity → EG ↑ & ↑ Potential Output. ↑G → ↑AD Jakarta's MRT train development project. As public goes into MRT's, traffic issues are resolved & suppliers can easily supply to businesses without delays, improving efficiency & productivity.</p>
<p>Market-oriented supply-side policies</p> <p>Based on effort to make institutional changes to promote free markets that are competitive. Increase allocative & productive efficiency in allocation of resources.</p>	<p>Investment in new technology</p> <p>Involves Govt. spending on R&D, lead to technological development, ↑ quality of physical capital. This increases productivity of labor force as workers can use the better technologies to produce more output. ↑EG & ↑ Potential output. TG → ↑AD.</p>		<p>Industrial Policies</p> <p>Promote specific industries by: tax reductions, tax exemptions, subsidies, low-interest loans etc to support economic growth. These increase Investment ↑ from firms, ↑AD and also increasing potential output. Also support infant industries. Tata Motors - but shows how firms become inefficient.</p>	
<p>Interventionist Supply-side policies</p> <p>Govt. Intervention based. Directly increase productive capacity of economy. Main ↑</p> <p>Main Policies:</p> <ol style="list-style-type: none"> Investing in human capital Investing in R&D, to develop new technologies Investing in better infrastructure capital expenditure Improve industrial policies - institutional framework - subsidy, tax reduction etc. 	<p>Market-based Supply-side policies: based on institutional changes in economy to develop a free, competitive market. This is ideally done to increase production efficiency, allocation improve resource allocation & lead to economic growth. (increase potential output)</p> <p>3 main types of policies.</p> <ol style="list-style-type: none"> Policies encouraging competition - so that greater competition increases production efficiency & allocation. Potential output ↑ <ul style="list-style-type: none"> Privatization - ownership transfer. Profit Maximizer ⇒ Efficiency & productive maximizer Deregulation - e.g. protection, increasing competition for firms Anti-monopoly regulation - ↑ competition Trade liberalization - international competition Labour Market Reforms - increase labour flexibility & competition, so wages are determined by demand/supply. This usually lowers labour costs. ↓ Structural Unemployment as this is caused by market rigidities. <ul style="list-style-type: none"> Reducing labor union power - wage negotiation. More labor hired Reducing unemployment benefits. More workers find job Abolish minimum wage Reducing job security - easier & less costly for firms to adapt to demand change. ↑ Potential Output Incentive-related policies <ul style="list-style-type: none"> Usually ↓ taxes, so workers work & firms invest. ↑ Pot. Output Reduce income tax - ↑ quantity of labour Cut in business taxes - ↑ Tech & R&D. ↑ Growth Cut taxes on profits & capital gains, cut interest rate. People save and so Bahrain got no income tax. ↑ investment by firms. 		<p>Evaluation and comparison of Interventionist & Market-side policies are given on next page. Not enough space for pros & cons.</p>	
<p>Effects on AD side</p> <p>Interventionist increase G ↑ can increase AD.</p> <p>Market-oriented supply-side policies increase I ↑ Investment. Hence, it can often increase AD.</p>			<p>Structural Unemployment</p> <p>↓ Unemployment ↓ of labour job seekers & thus workers ↑ Potential Output</p> <p>Monetary & Supply</p> <p>have no min. wage. Their unemployment rates are high among young & GDP per capita ↑.</p>	

Content

CLASPP

- Evaluation of Supply Side Policy

Interventionist Supply-side Policies

- + Provide direct support in important areas for growth (human capital, infrastructure, R&D, growth-oriented industries)
- + Creates jobs and reduces structural unemployment
- + Lowers inflation and LRAS \uparrow
- + Economic growth and \uparrow potential output
- Long time to take effect
- Opportunity costs of govt. spending
- Govt. spending can cause budget deficit, increasing public debt (taxes)
- Govt. can support the wrong industries, leading to inefficiency in resource allocation.
E.g. Indonesia subsidizes Sempurna, a cigarette company. Robert Hartono is Indonesia's richest man.

Market-based Supply-side policies

- + Improve efficiency in production, \downarrow production costs
- + Improve resource allocation, as less resource waste (e.g. labor resources in economy)
- + Creation of jobs & \downarrow structural unemployment
- + \uparrow Product quality due to increased competition between firms
- + \rightarrow Lower inflation, As \uparrow LRAS
- + Economic growth, or \uparrow potential output
- Long time to take effect.
- ~~Privatization (\uparrow Competition)~~
- Higher prices & lower quantities. Profit maximization
- ~~\uparrow Unemployment as firms lay-off workers to reduce costs (worsen income distribution)~~
- Environment and pollution. Private firms don't care about externalities
- ~~Deregulation (\uparrow Competition)~~
- \uparrow Unemployment (cost saving) (worsen distribution)
- Not always in Public Interest
- ~~Trade liberalization (\uparrow Competition)~~
- Inefficient firms shut down
- Worker insecurity (labor reform)
- Poverty (labor reform)
- Unemploy. benefits is an automatic stabilizers for smoothening business cycle.
- Income tax \downarrow ineffective as more leisure, not more work
- \downarrow Taxes \rightarrow Larger budget deficit & public debt.