KEY MACROECONOMIC AIMS

Gross domestic product (GDP) *– The value of all* ***final*** *G&S produced within a country in a given time*
Inflation *– A* ***sustained*** *increase in the general price level (GPL)*
Unemployment *– When people are available for and seeking jobs, but cannot find any*

Key Macroeconomic Aims

1. Sustained economic growth (EG)
   - Measured by percentage change of real GDP per capita per period
   - **Both** actual and potential EG → higher per capita earnings → improved mat. SOL
   - ***Actual growth*** *– increase in real GDP of a country*
   - ***Potential growth*** *– increase in production capacity of the economy*
2. Low stable inflation
   - Measured by percentage rate of increase of Consumer Price Index (CPI) per period
   - Low inflation → investor confidence → aids in economic decision making of firms & consumers
   - Low inflation also maintains the purchasing power (PP) of citizens
3. Low unemployment
   - Measured by percentage of unemployed workers within total workforce (unemployment rate)
   - Low unemployment → ensure most have a stable income → reduces social problems
   - Low unemployment also implies optimal use of human resources in economy
4. Healthy balance of payments (BOP) + stable foreign exchange
   - A record of a country's international transactions → comprises current, capital & financial acc.
   - Healthy BOP is needed to prevent depreciation of currency → unstable exchange rate → great uncertainty → bad for international trade & EG

Key economic indicators (KEI)

- National income statistics
  - Gross domestic product (GDP)
    - Calculated by 3 different ways
      - **Product approach** – Sum up final value of all O/P or value added at all production stages
      - **Income approach** – Sum up all incomes of households (eg. wages, profits, rent, interest)
      - **Expenditure approach** – Sum up all expenditure on final O/P (ie. GDP = C + **I** + G + (X-M))
    - By circular flow of income, **National Product = National Income = National Expenditure**
    - Used to gauge economic strength of a country, contributions by various sectors & income distribution among different income groups (by the income approach)
  - Gross national product (GNP)
    - Equal to GDP plus net factor income from abroad (NFIA)
    - NFIA – Income derived from locally-owned FOP abroad minus that of foreign FOP at home
- Inflation rate – **percentage change** in GPL from year to year
  - Consumer price index (CPI)
    - Measure of percentage change in price of a fixed, commonly-consumed basket of G&S
    - Each item in the basket is given a weight according to its importance to calculate final CPI
    - CPI is commonly used for formulation/adjustment of monetary policies & business plans
    - Limitations
      - Substitution bias – Commonly bought goods may be substituted due to price raises
      - Quality adjustment – Hard to measure changes in quality of goods
      - New products – New products' prices decline sharply after introduction, but these declines are not recorded due to lag time in updates of fixed basket of G&S

- Unemployment rate
  - The higher the overall unemployment rate, the harder for an individual to find a job
  - Generally, higher unemployment means poor econ. perf. → ∵ unutilized human resources
- Balance of payments (BOP)
  - Current account
    - Records payments for imports & exports (X-M) **(BOT)**, income balance & current transfers
    - Income balance consist of wages, interest & profits flowing in & out of the country
    - Current transfers consist of international transfers of money by organizations/firms/indiv.
  - Capital account
    - Records flow of funds associated with acquisition/disposal of fixed assets (eg. land)
  - Financial account
    - Records cross-border changes in holdings of shares, property, bank desposits/loans, etc
    - Foreign direct investment (FDI) (LR capital) refers to acquisition/sale of assets (eg. factory)
    - Portfolio investment (SR capital) refers to acquisition/sales of paper assets (eg. shares)

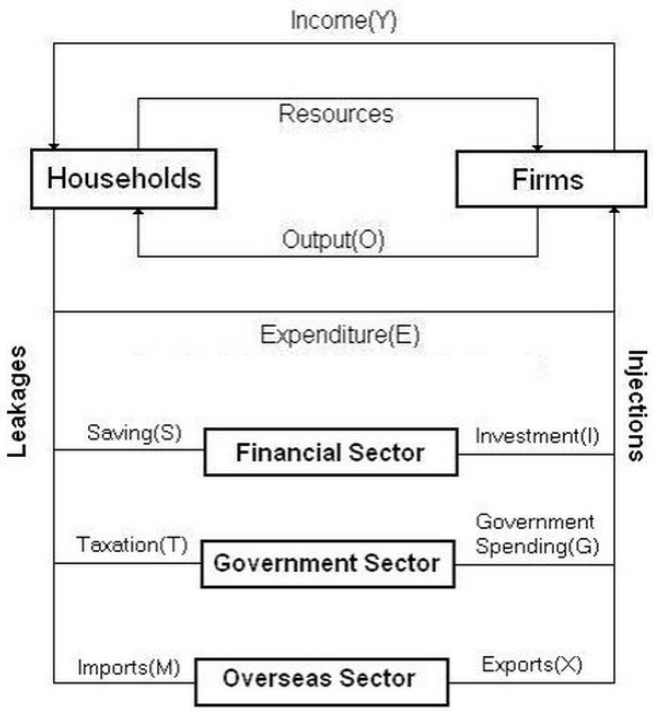
Standard of living (SOL)

- Refers to the material & social well-being of the average person in a given time period
- Measurements of SOL
  - **Material welfare** usually measured by real GDP per capita for inter-temporal comparison & by purchasing power parity (PPP) adjusted GDP per capita for inter-country comparison
  - Need to adjust GDP figures for inflation and population growth to determine SOL change
  - **Non-mat. welfare** measured by life expectancy, literacy rates, working hours, pollution index…
- Difficulties in measuring SOL
  - Limitations of GDP in measuring national O/P
    - Exclusion of non-market activities (eg. housework) → ∵ hard to track & regulate
    - Non-inclusion of underground economy (eg. tuition/drug dealing) → unaccounted O/P
  - Limitations of GDP in measuring material welfare
    - Composition of GDP may be skewed towards capital investments or defence goods → SOL constant despite rise in GDP → but may lead to future rise in SOL
    - Income inequality may prevent majority from enjoying a rise in SOL from a rise in GDP
  - Limitations of GDP in measuring non-material welfare
    - Reduction in leisure time for increased productivity → has SOL really increased?
    - Pollution & resource depletion → worsen living environment of citizens → decreased SOL
- Difficulties in comparing SOL between countries
  - Different accounting procedures & items included in fixed basket
    - There is no internationally agreed method of measuring national income
    - Rural communities tend to be more self-sufficient → actual amount of G&S produced for consumption may be underestimated → exaggerated differences in O/P
  - Size of underground economies
    - O/P produced by different underground economies occupy different proportions of GDP
  - Compositions of GDP
    - Goods consumed are likely different due to different living environments (eg. winter wear) → incurs extra expenditure on certain countries → does not necessarily mean lower SOL
- Alternative measures of SOL
  - Human Development Index (HDI) → combines life expectancy, education & PPP-GDP/capita
  - Happiness index → covers 11 different areas of welfare (eg. housing, incomes, security, health)

INCOME & EMPLOYMENT DETERMINATION

Circular flow of income

- Represents flow of payment between households & firms
- Households demand O/P (G&S) from firms, while firms demand factor services provided by households (wages, interest, rents, dividends, etc)
- Ideally, Y = E, but leakages (L) to & injections (J) from other sectors exist
- If L > J, circular flow is reduced → fall in national income level
  - Similar for L < J
- If L = J, equilibrium is reached → current spending = current O/P → no depletion/accumulation of inventories → no incentive to change production levels



Aggregate demand (AD) *– Total level of spending in an economy at each price level*
Aggregate supply (AS) *– Total output of G&S that firms want to produce & sell at each price level*

Aggregate demand

- Shows amount of domestically-produced G&S desired at each general price level (GPL)
- AD = C + **I** + G + (X – M)
  - C = consumption – consumer spending by households
  - **I** = investment expenditure by firms
  - G = govt spending
  - X = expenditure by foreigners to buy local gds, M = expenditure by locals to buy foreign gds
- The higher the price level, the lower the quantity demanded of G&S (inverse relationship)
  - Wealth/real balance effect
    - If nominal income unchanged, when GPL increases, households' real income decreases → purchasing power decreased → discourages C → lower national expenditure → lower O/P
  - Interest rate effect
    - GPL rises → DD for money to maintain living standards rises → ∵ spend more on G&S and factor services
    - Interest rate (r) is the cost of borrowing money → if DD_{money} rises, r increases → more expensive to buy big-ticked goods on credit → C & **I** decrease → AD decreases
  - International substitution effect
    - GPL rises while foreign prices stay constant → domestic goods more expensive → cet par, citizens more likely to buy foreign goods → M increases, X decreases → AD decreases

Non-price factors affecting AD

- Changes in expectations
  - Job/income & profits (C, **I**)
    - Optimism of future state of economy → expected job vacancies, higher income & bonuses → consumers more willing to purchase big-ticket items
    - Firms expect higher DD → higher profits → greater induced investment expenditure
    - AD for G&S increases at every prive level → AD shifts right
  - Real wealth (C)
    - Wealth – amount of money and value of fixed assets (eg. houses, bonds)
    - Expected rise in wealth → DD for G&S increases → AD shifts right
  - Price levels (C)
    - Expected increase in inflation rates → spend more now to minimise future loss in value of money → increased current spending → AD shifts right
- Changes in govt policies
  - Fiscal policies (C, **I**, G)
    - Austerity measures/reduced govt spending → G falls → AD falls & shifts left
    - Higher taxes rates → fall in disposable income & post-tax profits → C, **I** falls → AD falls
  - Interest rate policies
    - Govt can affect interest rates by regulation of money supply
    - Reduced interest rates → consumers likely to spend on big-ticket items, firms increase spending as more projects have expected RoRs > interest rates → C, **I** rise → AD rises
- Changes in world economy
  - Income levels of other countries
    - Rapid rise in other countries' incomes → foreign DD for local gds rises → X rises → AD rises
  - Price levels of other countries
    - Higher inflation elsewhere → local gds seem cheaper → DD increases → X rises → AD rises
    - DD for local goods by locals also rises (import substitutes) → M falls → AD rises
  - Foreign exchange rates
    - Relative values of different currencies affect relative cheapness of local vs. foreign goods
    - DDs of local and foreign goods are affected → net rise/fall in (X-M) → AD rises/falls
- Changes in national income (NY)
  - Recessions
    - NY falling → households spend less, firms invest less due to lower DD for G&S, cutting back production → C, **I** fall → AD falls and shifts left

Aggregate supply (AS)

- Shows total O/P of G&S firms are willing to produce at each GPL → depends on firms' decisions to use workers & inputs to produce G&S to sell
- Shape of AS curve
  - Horizontal Keynesian range
    - Real national O/P (RNO/P) << full employment O/P level (Y_{FE}) → abundance of idle resources (spare capacity) → significant unemployment
    - If AD rises, spare capacity allows O/P production to be increased easily without additional costs → no pressure exerted on GPL → AS is perfectly price-elastic
  - Intermediate range
    - If AD rises, O/P increase to meet shortages causes bottlenecks in production → ∵ resources are increasingly scarce → rising costs of FOPs → higher prices needed to maintain profitability and give firm incentive to increase production
  - Vertical Classical range
    - At full employment, O/P cannot rise as all resources are used to their max capacities

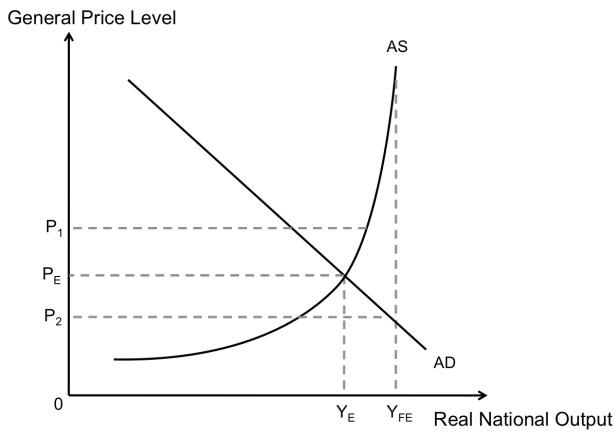
- If AD rises, only GPL rises without any change in RNO/P → AD is perfectly price-inelastic

Non-price factors affecting AS

- Factors affecting production costs (Keynesian range)
  - Changes in input prices
    - Rise in input prices → rise in overall COP → AS shifts upwards
    - If rise in prices is caused by long-term depletion of these resources, then productive capacity could be reduced → AS shifts leftwards also
  - Expected inflation rates
    - Expected higher prices → producers less motivated to sell goods now (∵ profit-driven) → AS shifts upwards to show fall in supply
    - Trade unions may also negotiate for higher wages to combat rising cost of living → COP rises → AS shifts upwards
  - Govt policies
    - Subsidies to firms → lower COP → AS rises and shifts downwards
- Factors affecting production capacity (Classical range)
  - Quantity of resources
    - Due to discovery of new sources of minerals/raw materials
    - More resources → increased ability to produce G&S → cet par, productive capacity rises → AS shifts rightwards
  - Quality of labour input
    - Increase in education levels → more skilled workers → need less people to produce more G&S → cet par, productive capacity increased → AS shifts rightwards
    - Skilled workers may also reduce COP due to efficiency → AS also shifts downwards
  - Govt policies
    - Subsidies to workers' skills upgrading → improved quality of labour → AS shifts rightwards
  - Technological advancement
    - Improvements could lead to less costly ways of producing more G&S → COP falls, productive capacity rises → AS shifts downwards and rightwards

AD & AS

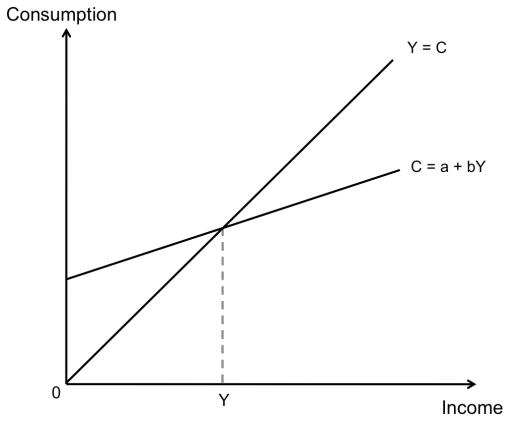
- Equilibrium attained when AD = AS, where equilibrium NO/P = Y_E and GPL = P_E
- If P > P_E at P_1, surplus forces firms to reduce P to clear excess stocks → O/P falls moving towards Y_E
- If P < P_E at P_2, shortage causes consumers to bid higher prices for goods → profit-maximising firms increase O/P to meet DD by employing more workers & increasing stocks → O/P rises towards Y_E



Aggregate expenditure (AE) *– Total planned expenditures by economic sectors at each income level*
Average propensity to consume (APC) *– Proportion of* ***total*** *income spent on consumption*
Marginal propensity to consume (MPC) *– Proportion of* ***extra*** *income spent on consumption*
Autonomous *– Does not vary with current level of income*
Induced *– Varies directly with changes in level of income*

Keynesian Cross Model

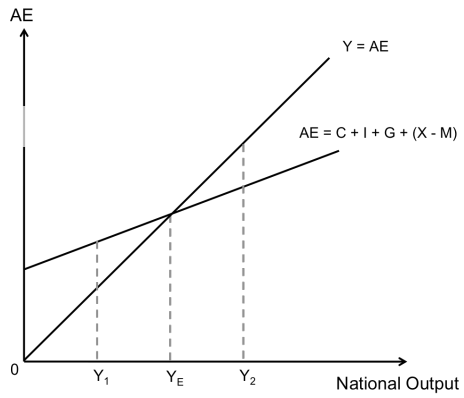
- Assume constant tech, constant max O/P level & fixed GPL (ie. constant wages, interest rates, etc)
- **AE = C + I + G + (X – M)**
  - Consumption expenditure (C) is the act of using income to buy **final** G&S to satisfy wants
- Consumption function – C = a + bY, where a = autonomous C, bY = induced C
  - C is the amount that households plan to consume at each income level per time period
  - Autonomous component depends on changes in like consumer confidence & interest rates
  - Induced component is directly proportional to income level
  - MPC = ΔC/ΔY → thus, b = MPC
  - When incomes are less than Y, C > 0Y → dissavings
  - When incomes are more than Y, C < 0Y → savings



- Movements along and shifting consumption function
  - Changes in income → movement along the consumption function
  - Changes in non-income determinants → upward/downward shift in consumption function
    - Wealth – An increase in the value of assets owned → upward shift
    - Expectations of changes in price & income – People spend more now if prices are lower
    - Redistribution of income – The poor will likely spend the tax money that the rich would save
      - The rich tend to have a lower MPC than the poor
      - Portion of income collected from the rich would have been saved, but instead it is transferred to the poor, who will likely spend it on consumption → overall increase in C
    - Interest rates & availability of credit – Rise in interest rates reduces C of big-ticket items
    - Tastes & attitudes – Changes in societal attitudes (eg. greater prudence) may decrease C
- **I, G and X are taken to be autonomous, while C and M are either autonomous or induced**
- Equilibrium level of income achieved when planned AE = actual national O/P → ∵ firms can sell all that they have produced with no change to inventories → no incentive to change production

AE-Income approach to income determination

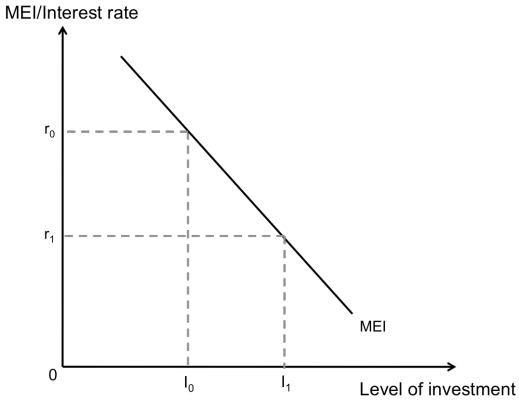
- Assume 4-sector economy (households, firms, govt & foreign sectors)
- At Y_E, planned AE = actual NO/P → equilibrium
- At Y_1, planned AE > actual NO/P → firms deplete stocks of goods produced before → firms will produce more in next period → NY rises
- At Y_2, planned AE < actual NO/P → build-up of stocks (unplanned inventory investment) → firms will produce less in next period → NY falls



Investment (I) *– Act of acquiring new fixed capital assets (eg. plants, machines) or accumulating inventories (eg. raw materials, semi-finished goods, finished goods) held by the producer*
Marginal efficiency of investment *– The expected rate of return (RoR) of an additional unit of* ***I***
Interest rates (r) *– The cost of borrowing*

Marginal Efficiency of Investment Theory (MEI)

- Theory states that there is an inverse relationship between investments **(I)** & interest rates **(r)**
- Downward-sloping MEI curve is generated by ranking **I** opportunities in decreasing MEI
- Firms are profit-driven → **I** occurs only if **MEI > r**
- If interest rates fall from r_0 to r_1, number of **I** projects with **RoR > r** increases from I_0 to I_1 → move along curve



Non-interest rate determinants of MEI curve shifts

- Business confidence – MEI rises with optimistic economic outlook → ∵ **I** depends on expectations
- Cost & availability of capital goods – fall in cost of new plants/equipment → rise in labour-saving **I**
- Govt policies – fall in direct taxes rates on profits → after-tax profits rise → firms may increase **I**
- Technological advancements – makes **I** more profitable due to higher returns → MEI shifts right
- Rate of change of income – **accelerator effect:** Increase in income → more **I** needed to produce more goods by creating new capacity to meet new demand → MEI shifts right

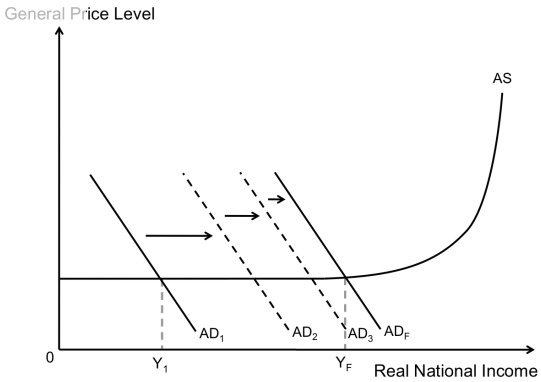
Note: All of the above determinants except the last lead to changes in auto I; last point refers to induced I since it is related to income.

Marginal propensity to tax/import/save *– Proportion of* ***extra*** *income spent on taxes/imports/saved*

The multiplier effect

- When a shift in AD/AE results in a **more than proportionate change** in NY in the same direction
- Multiplier **k** – numerical coefficient by which a change in autonomous spending is multiplied by to show the **final** change in equilibrium RNY → **k = ΔNY/ΔAE = 1/MPW = 1/(MPS + MPT + MPM)**

- Assume sufficient spare capacity, constant GPL & **r**, and constant technology
- An **autonomous** increase in AD leads to a more than proportionate rise in NY, **cet par**
- Based on principle that "one's person's spending is another person's income & income stimulates further spending (induced C)" → process repeats over many rounds in the circular flow of income
  - To raise production, firms hire FOP from households → households then spend factor incomes received to buy domestic G&S → repeat over many rounds as income flows back cyclically
- However, the process eventually stops due to the presence of leakages → increase in induced C falls with each successive round since some is saved/taxed/spent on imports → multiplier process stops fully when total increase in induced W = initial autonomous increase in AD
- Thus, this leads to a more than proportionate increase in RNY ($Y_1Y_F > AD_1AD_2$) → actual growth



Extent of multiplier in relation to state of economy

- If economy initially operates with significant idle resources/excess capacity → additional units of O/P can be produced with no additional cost → AS perfectly price elastic → RNY increases without any change in GPL → full effects of multiplier effect experienced → actual growth
- If economy initially operates in intermediate range of AS → shortages experienced at initial GPL → inventory depletions → production stepped up in next period, prices raised to account for additional costs of producing one more unit of O/P → increase in **both** GPL and RNY → dampening of multiplier effect → ∵ increase in GPL reduces purchasing power of households, reducing C
- If economy initially at full employment → shifting AD will increase GPL only → no actual growth

Limitations of multiplier in reality

- Multiplier is smaller than theoretical value – rise in AD may cause GPL to rise also
- Time lag for multiplier to work – each round of spending may take weeks/months to occur
- Disparities in MPS/MPT/MPM & state of economy – affects the size of k and the extent of effect

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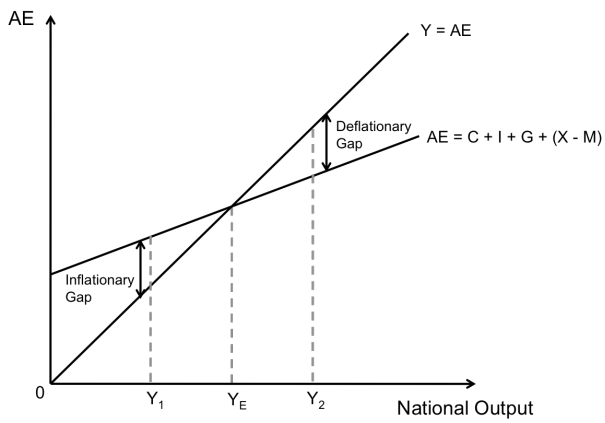
Full employment level of income (Y_{FE})

- Level of NY where economy is working to its full capacity → does not mean everyone is employed
- Ideally, $Y_E = Y_{FE}$, but Keynes suggests this is purely coincidental



- **Inflationary/deflationary gap** – Amount of AE that exceeds/falls short of the level needed to achieve full employment (FE)
  - If $Y_{FE} = Y_1$, planned AE > NY → excess DD → DD-pull inflation occurs ∵ O/P cannot be expanded past Y_1 in SR → increases in NY are purely due to rises in GPL, rather than RNO/P → **inflationary gap**
  - If $Y_{FE} = Y_2$, planned AE < NY → lack of DD → DD-deficient unemployment occurs → firms step down prices to clear stocks → **deflationary gap**
- Fiscal & monetary policies are used to close inflationary/deflationary gaps
  - Fiscal policies use govt expenditures & taxation to influence AE → achieve/maintain FE, limit inflation & reduce fluctuations in economic activity
  - Monetary policies use control over the economy's **r** to influence level of economic activity

MACROECONOMIC AIMS & ISSUES

Economic growth (EG) *– An increase in GDP*
Actual growth *– An increase in national O/P actually produced in a given time period*
Potential growth *– An increase in productive capacity in a given time period*

Effects of economic growth
Benefits
- Higher current & future material/non-material SOL
  - Actual growth, assuming pop. size constant/grows slower than GDP → more final G&S produced & consumed → material SOL rises
  - Actual growth increases nominal savings & MPS (∵ higher income) → rise in SS_{LF} → **r** falls in LR → greater incentive for capital accumulation → greater capital expenditure **(I)** → potential capacity of economy rises
  - Actual growth improves non-mat. SOL by increasing affordability of merit goods (eg. education, healthcare) & incentive to take care of environment & less fortunate
- Easier income redistribution
  - Rapidly growing economy can afford to be more generous to the disadvantaged → ∵ rise in RNY likely generates rise in tax revenues for govt (assuming progressive income tax system) → more funds to alleviate poverty with → reduction in income inequality → improved mat. SOL
- Decreased cyclical unemployment
  - EG → more G&S demanded → rise in derived DD for labour → lower unemployment
  - Lower unemployment can help to reduce social problems (eg. crime & discrimination)

Costs
- Income inequality
  - EG tends to favour the rich more, who have savings to **I** & reap benefits from these **I** → worsens income inequality → benefits of EG not shared fairly → reduced SOL & cohesion
- Environmental degradation
  - EG → rapid depletion of natural resources, increased waste production & pollution, worsens traffic congestion → reduced non-mat SOL
- Overheating economy **(DD-pull inflation)**
  - EG → AD rises excessively as economy reaches FE → scarcer resources → rise in factor input prices as firms bid up prices → accelerating/DD-pull inflation
  - This causes price uncertainty → bad for international trade/profit planning → **I, (X-M)** falls

Recession *– When an economy experiences 2 consecutive quarters of negative EG*

Causes of weak/negative economic growth
Demand factors
- Fall in AD – anything that decreases components of AD = C + **I** + G + (X-M)
- Low rates of investment
  - Capital assets have to be continually replaced due to wear & tear or obsolescence
  - Also, the economy has to keep increasing capital stock per worker → **capital deepening** → increase productivity of labour
  - Thus, for capital stocks to expand, **I** must occur → need high saving rates and/or FDI
- External shocks (eg. global recession) – affects trade partners → X falls → AD falls → weak EG
- Political situation
  - Corruption/political instability hinders EG by raising uncertainty → discourages savings (S) & **I**
  - Proper law enforcement & crime prevention lowers business costs & uncertainty

Supply factors

- Lack of/decrease in natural resources
  - Weak resource bases can be serious obstacle to growth → limits Y_{FE} physically
  - But, entrepreneurship, skilled labour & capital is more important → shown by S'pore & HK
- Lack of labour & human capital
  - **Human capital** – Knowledge & skills acquired by workers through experience/training over time
  - Human capital raises country's ability to produce G&S → raises productivity
  - Human capital quality matters more than quantity → ∵ resources better used for production
  - Highly dependent on state of education & training programmes in the country
- Lack of technological advancement
  - Invention & innovation → cuts COP & creates new **I** opportunities by expansion of industries → lower prices, new products → higher C → EG
  - Govt support is important → ∵ high costs of R&D & uncertainty of success

Consequences of weak/negative EG

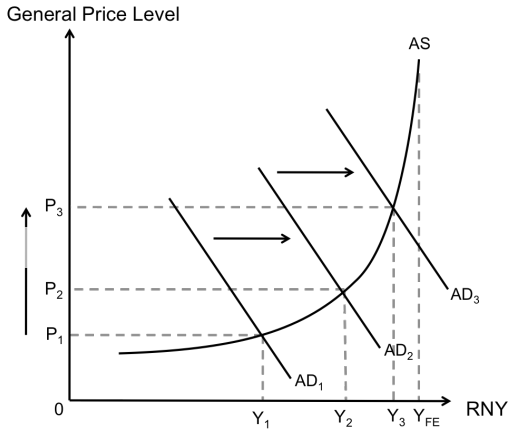
- Unemployment & lost O/P
  - Rise in cyclical unemployment occurs with slow/negative EG → ∵ firms are producing less
  - Firms cut back on production → employ less workers & capital → loss of real O/P
- Lower savings & consumption
  - Unemployment → lower incomes → C & S fall, S might be negative (dis-savings)
  - Fall in S → SS_{LF} for **I** falls → **I** falls
- Lower investment & long-term growth
  - Recessions → fall in investor confidence → fall in **I** → loss of future O/P → hinders EG

Inflation – When there is a **sustained** increase in GPL over time

- Calculated by percentage change in CPI between 2 consecutive years
- Inflation can be anticipated or unanticipated → firms/indiv can/cannot predict inflation enough to take appropriate actions to protect themselves against rising prices (eg. demanding higher wages)

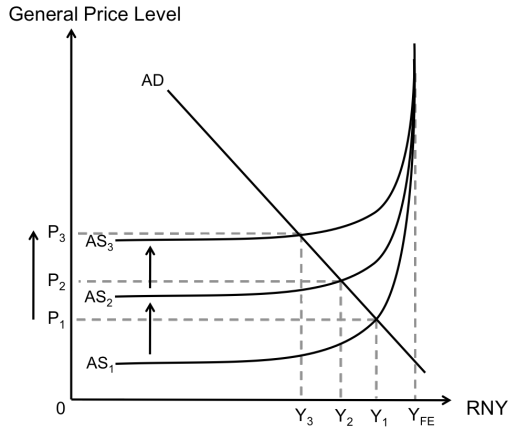
Demand-pull inflation

- Caused by persistent rises in AD → associated with a booming economy
- Assume economy operates on intermediate range
- Increase in auto AD shifts it from AD_1 to AD_2 → RNY rises from Y_1 to Y_2 → current spending > current production at P_1 → shortages → firms draw on inventories → employ more workers to raise O/P → rise in GPL from P_1 to P_2 → ∵ higher P to ensure profitability of production
- This creates confidence in rises in income → households increase C & firms increase **I** → further increase in AD from AD_2 to AD_3 → closer to Y_{FE} → resources get scarcer → competition for resources bids up factor prices → higher inflationary pressures due to DD-pull



Cost-push inflation

- Caused by rising production costs during periods of low unemployment → continuous rise in AS
- An initial increase in COP shifts AS from AS_1 to AS_2 → shortages at P_1 → firms take opportunity to raise prices to P_2
  - Increase in COP could be due to powerful trade unions demanding higher wages, increases in input prices, imports, taxes, dominant market powers (PED < 1) 'pushing' prices to maintain/increase profits, general immobility of SS to respond to DD causing prices to increase in expanding industries



- As GPL rises, spending for G&S falls (∵ wealth, **r**, international trade effects) → fall in RNY from Y_1 to Y_2 → economy in equilibrium at GPL = P_2 & RNY = Y_2
- **But,** expectations of future prices rising cause workers to demand higher wages → further rise in COP → AS rises from AS_2 to AS_3 → persistent rise in GPL until at new equilibrium of GPL = P_3 and RNY = Y_3

Note: It is possible for both DD-pull & cost-push inflation to occur simultaneously, and it is often not possible to determine the root cause of the inflation.

Benefits of low, stable/anticipated inflation

- Promotes actual EG
  - Households/firms expect prices to rise slowly → incentive to buy more now → C, **I** rises → AD rises → more than proportionate increase in RNY by multiplier → increase in actual EG
- Promotes **I** → potential EG
  - Households more certain about future value of savings → incentive to save more now → rise in SS_{LF} → price of borrowing (**r**) falls → rise in **I** by MEI theory → more capital goods produced → capacity to produce final G&S increases → potential growth
- International competitiveness & improvement of BOP
  - Domestic inflation lower than that of other countries → price competitiveness of domestic X → DD for local X rises → rise in X revenue **(assume PED > 1)**
  - Also, PP of households rises, ∵ lower relative inflation → switch to local substitutes → DD for M falls → fall in M
  - Overall, (X-M) increases → improvement in BOT position → cet par, BOP position also improves
- Economic agents can act to protect themselves from inflation
  - Banks can vary nominal **r** to keep in line with inflation rates, savers can choose appropriate banks with r ≥ inflation rates to maintain their future SOL
  - Workers can negotiate contracts with automatic wage hikes as GPL rises → maintain PP & SOL

Costs of high, unstable/unanticipated inflation

- Fall in SOL
  - High inflation → fall in RY → lower PP → fall in amount of G&S to buy → fall in material SOL
  - Hoarding of consumers goods may occur → rise in AD → rise in GPL → worsens inflation
- Economic uncertainty → hinders EG
  - Uncertainty makes planning for LR difficult → firms less willing to take risks → **I** falls
  - Also, if inflation is cost-push in nature, COP rises → reduced profitability of investments
  - FDI decreases due to the above → further fall in AD → more than proportionate fall in RNY
  - Unanticipated inflation also discourages S → SS_{LF} falls → **r** rises → **I** falls more → smaller rightward shifts in AS curve → slower potential growth
  - High inflation → increased speculation → unsustainable rise in property prices → banking crisis

- Worsens BOP & currency depreciation
  - Domestic inflation relatively higher → X competitiveness falls → DD for domestic X falls → X revenue falls (assuming PED > 1), cet par
  - Imports also relatively cheaper now → DD for M rises → rise in M → worsens BOT & BOP
  - DD for domestic currency falls, whilst DD for foreign currency rises → currency depreciation
- Misallocation of resources
  - Firms cannot distinguish between changes in GPL & changes in price of a specific good → wrongly devotes more resources to meet "increase in DD" for that good → further from equilibrium (resource misallocation) → slower EG
- Arbitrary redistribution of income → worsens income inequality
  - Inflation benefits one side of each pair by giving them better value for the money they have
    - **Fixed** income earners **vs. variable** income earners – only variable Y rises with GPL
    - Workers in **strong vs. weak** trade unions – strong trade unions demand higher wage hikes
    - **Debtors vs. creditors** – real value of debt falls with high inflation → debtors benefit
    - Holders of **financial vs. physical** assets – only value of physical assets rise with GPL
- Significant shoe-leather & menu costs
  - **Shoe-leather cost** – opportunity cost of time & effort wasted in minimizing holdings of cash
    - Since inflation reduces real value of money, people don't withdraw large amounts of money
    - Frequent trips to banks/ATMs → wear out their shoes & waste time → "shoe-leather costs"
  - **Menu cost** – opportunity cost of resources used in revision of price lists/tags/catalogues
    - Menu costs increase COP of final G&S → upwards shift of AS → worsens cost-push inflation
    - COP is passed to consumers via higher GPL → fall in PP → material SOL falls also
- Wage-price spiral → breakdown in function of money
  - **Hyperinflation** – When prices rise by several hundred/thousand per cent per year
  - Firms constantly raise prices to cover soaring COP, workers demand huge raises to stay ahead of skyrocketing cost of living → prices & wages chase each other in an ever-rising spiral
  - People no longer save, spending all money immediately → ∵ its real value keeps falling
  - Bartering/use of foreign currency may occur to avoid using local currency completely

Deflation – A period when GPL falls

- Occurs when inflation rates fall below 0% → can buy more goods with same amount of money
- Generally caused by a fall in AD or rise in AS → generally undesirable
- Deflation is usually a relief for the consumer, but could result in a **deflationary spiral**
  - Expectations of further economic deceleration & price reductions → continual holding back on C & **I** due to expectation of lower prices
  - Lower prices → lower profit margins → retrenchments → higher cyclical unemployment → fall in potential growth of economy
  - Real burden of debts increase with falling GPL → debt mountain decreases consumer confidence → further fall in willingness to spend
  - Real **r** rise if nominal **r** does not align with GPL → cost of borrowing increases

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Unemployment *– When people are available for and actively seeking work, but cannot find any*

Full employment (FE) *– The level of employment that results from efficient use of workforce after allowance is made for the natural rate of unemployment due to imperfect information, dynamic changes & structural conditions of the economy (mostly SS factors, rather than DD factors)*

Types of unemployment

- Frictional unemployment – workers (eg. fresh graduates) searching for/in between suitable jobs
  - Short-term, minor form of unemployment
  - Caused by market imperfections (eg. **imperfect knowledge – ignorance of job openings**)
  - Caused by dynamic economy → jobs continually created & destroyed, workers coming/going
- Structural unemployment
  - Long-term, more severe form of unemployment
  - Caused by changes in an economy's economic structure
    → Occupational immobility of labour – mismatch in skills of workers with prevailing industry
    → Geographical immobility of labour – workers unable/unwilling to move for various reasons
  - Caused by long-term changes in DD & SS factors in specific industries
    - Changes in DD for labour – changes in tastes/substitutes/cheaper labour → **sunset industry**
    - Changes in SS of jobs – exhaustion of mineral deposits/high wage costs → unprofitable for firms to continue production → workers unemployed & lack relevant skills to take new jobs
- Cyclical/DD-deficient/Keynesian unemployment
  - Severity & duration depends on how long recession lasts
  - Caused by fall in AD
    - Firms cannot sell all O/P → surplus → cut back on production in next period → DD for labour falls, so some workers are fired (∵ DD for labour is a derived DD)
    - The deeper the recession & longer it lasts, the higher the rate of cyclical unemployment
- Seasonal unemployment
  - Short-term, minor form of unemployment
  - Caused by seasonal declines in business → people unemployed during slack season
  - Primarily occurs in the agricultural & tourism industries

Detriments of unemployment

- O/P loss by economy
  - Unemployment is a waste of scarce resources → not producing on PPC → loss of potential O/P
  - Those unemployed may become deskilled & demoralized → not readily employable even when economy recovers **(hysteresis)** → reduction in productive capacity → loss of potential O/P
  - Thus, society is deprived of a higher RNO/P → deprived of higher SOL
- Adverse effects on govt budget
  - Unemployed people have no income → no tax collected from them → less govt tax revenue
  - Govts may also incur higher expenditure on unemployment benefits → opp. cost incurred
  - Prolonged unemployment → increased govt debts → costs to economy to pay off debts
- Increase in social problems
  - High unemployment usually leads to higher incidences of deviant behaviour (eg. theft) → reduced non-mat. SOL
  - In SR, unemployment reduces income; In LR, it reduces ability to save for retirement, etc → stress, deskilled, demoralized → lose motivation to seek for a job in future
  - If unemployment rates not evenly distributed, income inequality may also be worsened

Balance of payments (BOP) *– A record of a country's international transactions between its residents & those from the rest of the world over a period of time*
Comparative advantage (CA) *– Ability of firm/indiv. to produce G&S at lower opp. cost than others*

Causes of unfavourable BOP
Current account deficit
- Cyclical fluctuations in domestic/foreign NY & GPL
  - Fall in NY of trading partners → DD for domestic X falls (extent depends on YED of X) → X revenue falls → country suffers BOT deficit, and thus, current account deficit
  - Rise in GPL locally → X now more expensive than foreign G&S → Q_D for X falls (assume PED > 1 ∵ availability of substitutes) → fall in X revenue, cet par → BOT deficit
- Structural changes
  - DD for specific X and M may change due to CA, changes in tastes & preferences, income distribution, availability/prices of competitive goods or changes in technology
  - Slow to adapt → cannot reallocate resources for some time → fall in (X-M) → BOT deficit
- Exchange rates (XΔr)
  - Rise in XΔr → local X more expensive in foreign currency → fall in quantity transacted → X falls
  - Rise in XΔr → foreign M cheaper in local currency → rise in quantity transacted → M rises
  - Overall, a rise in XΔr (currency appreciation) leads to fall in (X-M) → worsening of BOT
    - **Marshall-Lerner's condition:** If $PED_X + PED_M > 1$, then rise in XΔr will cause (X-M) to fall
- Govt policies
  - Trade policies (eg. increased protectionism) by importers may worsen BOT of exporters
  - Economic development programmes (eg. industrialization) may affect current account → ∵ heavy importation of capital goods → deficit in BOT
- Terms of trade (TOT) – Rate at which a country exchanges its exports for imports
  - Measured by ratio of prices indexes of exports over imports → TOT = XPI/MPI x 100
  - Changes in TOT **may** affect current account → cause of change must be identified first
    - For example, loss in price competitiveness → X more expensive → XPI rises → TOT improves, but BOT worsens, cet par
    - However, if X more expensive due to rise in DD for local X → both TOT & BOT improve
- Random environmental factors
  - Wars/environmental disasters may destroy economic infrastructure → rise in M of capital & consumption goods for rebuilding, fall in X due to damaged industries → worsens BOT

Capital/financial account deficit
- Fall in expected RoR locally
  - **I** depends on expected RoR, which depends on COP, govt subsidies (if any) & local tax policies
  - If local expected RoR falls relative to that of other countries, then profitability of **I** falls locally → fall in **I** locally → net capital flow out of country → deficit in capital/financial accounts
- Relative interest rates
  - Fall in local **r** relative to other countries → speculators transfer money stored in local banks to banks elsewhere with higher **r** → short-term net capital outflow → deficit in both accounts
- Expected movements in exchange rates
  - Expectation of domestic currency depreciation → speculators sell domestic currency for foreign currencies → net capital outflow → deficit in financial account
- Exchange control regulations
  - A country may place exchange control regulations to restrict flow of currency overseas
  - Removal of these regulations → large outflow of currency → ∵ investors try to diversify & take advantage of overseas **I** opportunities → deficit in financial account

Effects of exchange rate systems on BOP position

- Floating exchange rate system – no govt intervention, exchange rates determined by mkt forces
  - Inflows/credits to BOP constitute DD for a currency in forex mkt, outflows/debits constitute SS
  - XΔr determined by market forces → at equilibrium, DD = SS → **BOP always balances**
  - However, BOP problems can still exist → eg. deficit of CA could be balanced by surplus of C/FA
- Fixed/managed exchange rate system – govt keeps fixed/managed float exchange rate
  - BOP is maintained at a deficit/surplus as long as XΔr held above/below eqm
  - Done so by local Central Bank buying up/selling out domestic currencies
  - XΔr > eqm
    - **Benefit:** Stronger currency → imports are relatively cheaper in local terms → COP falls
    - **Detriment:** Depletion of foreign reserves to maintain augmented XΔr → fall in capacity to deal with speculative attacks on local currency in future → EG may be impeded
  - XΔr < eqm
    - **Benefit:** Greater confidence in economy → ∵ accumulation of reserves reduces vulnerability
    - **Detriment:** Trading partners constantly in BOP deficit → prompt retaliation by protectionism
    - **Detriment:** Excessive foreign reserves → local currency depreciates relative to other countries → local X relatively cheaper than other countries' X → unfair trade

Consequences of <u>persistent</u> BOP deficit

Current account deficit

- Rise in external debt → loan repayment problem
  - Persistent CA deficit financed by sale of paper/physical assets to foreigners → rising ext. debt
  - Rising proportion of local incomes being paid out to foreigners → less funds for C & **I**
  - If unable to repay debts, once loans stop coming → C, **I**, G fall drastically → severe contraction
  - Defaulting on loans → loss of confidence in economy
- Fall in NO/P & employment rate
  - Worsening current account deficit → AD falls → multiplier: more than proportionate fall in RNY/RNO/P → derived DD for labour also falls → cyclical unemployment
- Dampening of DD-pull inflationary pressures
  - CA deficit due to fall in (X-M) → AD falls → dampens DD-pull inflation → price stability

Capital/financial account deficit

- Redirection of investment away from local economy
  - FDI is important too small/developing economies like Singapore
  - Persistent FA deficit due to redirection of **I** to cheaper/more attractive countries → fall in local employment + lowered potential growth

Consequences of <u>persistent</u> BOP surplus

Current account surplus

- Improvement in EG, employment & SOL
  - CA surplus → rise in (X-M) → AD rises cet par → multiplier → actual growth (∵ idle resources are now better utilised) → rise in SOL
  - Increase in production → more hiring of labour → reduced cyclical unemployment
- Demand-pull inflation
  - CA surplus → AD rises → if lack of spare capacity, DD-pull inflation results
- Retaliation – countries constantly in deficit resort to trade controls → detrimental to trade
- The "Dutch-Disease" Effect – a boom in one industry causes declines of others due to resultant appreciation of local currency/huge hot money inflows

Capital/financial surplus

- Economic growth
  - FA surplus → ∵ large inflow of FDI → AD rises → actual & potential growth + employment

MACROECONOMIC POLICIES

Aims of govt policies

- *Macro-goals*
  - To smooth out fluctuations in economic activity → enhance predictability & confidence
  - To promote EG, employment
  - To maintain price stability (low inflation)
- *Micro-goals*
  - To achieve more efficient resource allocation
  - To achieve more equitable income distribution

Sources of govt revenue – needed to execute policies

- Sales of G&S, including those from state enterprises (eg. postal services, utilities), investments in securities by GIC & licensing fees and fines
- Taxation
  - Direct taxes – taxes on income & wealth (eg. personal income tax, corporate tax)
    - Paid directly to Inland Revenue Authority of Singapore (IRAS)
    - Impact & incidence of direct taxes usually on the same person & not easily shifted
  - Indirect taxes – taxes on expenditure on & production of G&S (eg. GST)
    - Impact of tax is on producers, but impact may be shifted to consumer

The Budget *– An estimate of govt expenditure & revenue for the coming financial year*
Marginal tax rate (MTR) *– Proportion of additional income paid in taxes* ***(additional tax burden)***
Average tax rate (ATR) *– Proportion of total income paid in taxes* ***(overall tax burden)***

Types of tax systems

- Proportional tax (eg. corporate tax)
  - Same percentage of income is paid as tax for every income (constant tax rate)
  - Singapore's corporate tax rate is 17% (ie. **all** companies pays 17% of pre-tax profits as tax)
- Progressive tax (eg. personal income tax)
  - Rate of taxation increases with increasing income
  - Takes into account individual ability to pay → reduces post-tax income differentials
- Regressive tax (eg. indirect taxes on G&S, especially on necessities)
  - Rate of taxation decreases with increasing income
  - The poor spend a larger proportion of their income on these taxes than the rich

Effects of different taxes

- Incentive to work (SS_{labour})
  - High, progressive taxes → encourage absenteeism, discourage working overtime
    - **Income effect** – Work more to keep current C or cut down on C to keep leisure time
    - **Substitution effect** – opp cost of leisure is lowered as working more may earn less
  - Net effect may reduce labour supply → fall in production and RNY
- Incentive to take risks (enterprise)
  - High corporate taxes → reduced rewards of risk-taking ventures → discourages start-ups → lower enterprise and innovation in the country
  - Important in today's context → ∵ high capital mobility & competitive corporate tax rates
- Resource allocation
  - Tax incentives (eg. for R&D) influence production of certain G&S → affect resource allocation
  - Taxation also influence labour supply & O/P of various occupations
    - Example: Progressive income taxes may cause outflow of talent in high-paying jobs

- Changes equilibrium O/P in each product mkt → movements of resources between industries
- Savings
  - Heavy progressive taxes → reduce ability/willingness to save → reduce SS_{LF} to **I**
- Investments
  - Lower corporate tax → more capital for **I** → actual + potential growth
  - However, many factors affect investments → must complement tax with other policies
- Inflation
  - **Indirect taxes** → price of G&S rise → rise in cost of living → unions demand for higher wages → wages increase → prices rise further → **inflationary spiral**
  - **Direct taxes** → reduce disposable income → DD for G&S falls → prices fall → **deflation**
    - However, unions could also demand higher wages here → COP rises → inflation

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Fiscal policy (FP) *– Deliberate management of G & T to influence economic activities*
Discretionary policy *– A policy that deliberately changes govt expenditure (G) or taxation (T)*

Types of fiscal policy
Non-discretionary (automatic/built-in stabilisers of AD)
- Progressive tax structure
  - Ensures tax payments grow faster than incomes → contractionary effect (∵ taxes are a type of withdrawal) → reduces pressure on prices
  - Controls increases in AD & keeps inflation in check → stabilization in high growth
  - The inverse is true in recessions, but may become **fiscal drag** in economic recovery
- Unemployment compensation
  - Income falling, unemployment rising → more unemployment benefits → offset loss of income → slow down fall in C → slower fall in AD
- Family assistance programme
  - Tied to income levels → provides more to families arising from hard times → help stabilize fall in C → slow down fall in AD and RNO/P

Discretionary (stimulators of AD to get RNO/P closer to Y_{FE})
- Expansionary FP – budget **deficit** is planned (G>T)
  - Applied in recessions where economy is operating below Y_{FE} → stimulate AD to recover
  - Executed by either increasing G and/or decreasing T
    - Increase G – by transfer payments, public works projects
    - Decrease T – by reducing tax rates or eliminating certain taxes
  - Policies increase G → C, **I** may rise also → AD rises → multiplier → RNY rises
  - **Note: Raising G has a greater impact on AD → ∵ G is a direct component of AD**
- Contractionary FP – budget **surplus** is planned (G<T)
  - Applied to close an inflationary gap → curb an excessively high AD
  - Executed by either decreasing G and/or increasing T
  - Policies decrease G + raise T → C, **I**, G fall → AD falls → reverse-multiplier → RNY falls
  - Policies also cause depreciation in local currency → X cheaper in foreign terms → Q_X demanded rises → R_X rises → (X-M) rises → reduction of BOP deficit

Other effects of fiscal policy
- Resource allocation – taxes/subsidies help divert resources between sectors
- Income distribution – measures have different impacts on redistribution of income (progressive vs regressive tax systems)

Note: Fiscal policies are primarily for AD management, but may also exert secondary AS effects, which can be used for evaluations.

Limitations of fiscal policy

Discretionary FP

- Size of multiplier
  - Magnitude of k affects the extent of rise in RNY → smaller k limits effectiveness of FP → ∵ large amounts of funds needed to stimulate economy → high opp. cost incurred
- Time lags
  - Time is wasted in recognizing & designing FP, executing FP and allow FP to work its effects
  - If the economy recovers within this time lag, the effects of the FP may be destabilizing
  - Once FP is implemented, difficult to cut back/stop G midway
- Crowding out domestic **I** & in an open economy
  - Private expenditures (C, **I**) may decline due to increases in G
  - Govt finances budget deficit by borrowing from private sector instead of raising M_S → govt competes with firms for scarce funds → **r** rises → C, **I** falls → rise in AD due to G is dampened
  - Rising **r** also attracts hot money inflows → DD for local currency rises → appreciation → by MLC, (X-M) falls → rise in AD due to FP is dampened
- Burden on future SOL
  - Budget deficits → increase in national debt → repayments stretch for 10-20 years → high taxes needed to finance this
  - Internal debt (borrowed from locals by bonds) → repayment adversely impacts income distribution → ∵ bond holders are usually richer
  - External debt (borrowed from foreigners) → repayment involves outflows in BOP → lower EG
- Political pressure
  - Deficits are often politically attractive, surpluses politically painful → bias to expansionary FP

Non-discretionary FP

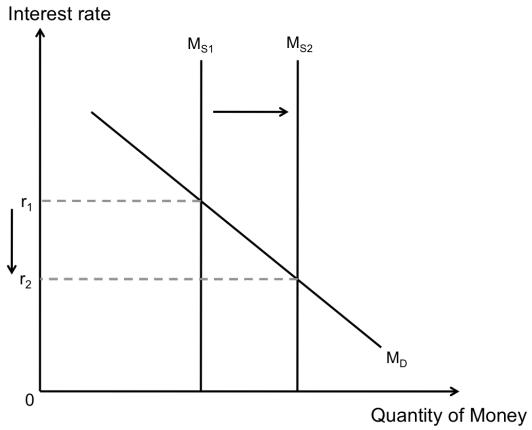
- Adverse SS-side effects
  - High progressive taxes discourage workers doing overtime & promotions → slow growth in production → slower growth in AS → higher inflationary pressures
  - Producers are also discouraged from taking risks → lower degree of innovation
  - High unemployment benefits → reduced opp. cost of being jobless → rise in frictional unemployment
- Fiscal drag – contractionary effect of increased tax revenues by rises in NY
  - Automatic stabilizers provide more resistance against EG when expansionary FP is implemented → ∵ their very function is to *minimise* changes in economic activity
  - While they are convenient & useful in bad times, they work against the economy in good times
  - Hinders economy from attaining Y_{FE}, notably when recovering from recessions

Monetary policy (MP) *– Attempts of monetary authorities to influence M_S & **r** to bring about desired changes in the economy*

Central Bank (CB) *– The principal monetary authority of a nation, performing several key functions, like currency issuance & regulation of M_S in the economy*

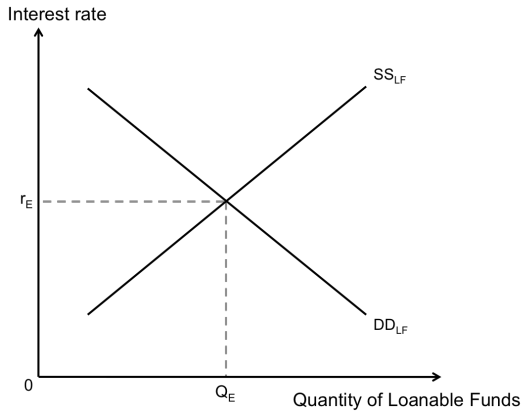
Interest rate (r) determination

- Liquidity Preference Theory (LPT)
  - Money supply (M_S) set independently by CB, DD for money (M_D) is DD to hold assets in liquid form (liquidity preference)
  - M_D is the total of DD of money for daily transactions, for precaution & for speculation
    - Only DD for speculation is dependent on **r** (inverse relation), the rest are independent
    - M_D affected by changes in real GDP, GPL, etc
  - M_S is perfectly **r** inelastic → ∵ M_S is strictly controlled by CB
    - M_S only falls/rises by use of contractionary/expansionary MP by CB
    - MP works by ΔM_S → Δ**r** → ΔAD → desired changes in economy



  - **Note: LPT is only used for analyzing Central Bank Monetary Policies**

- Loanable Funds Theory (LFT)
  - Interaction of borrowers (DD) & lenders (SS) determines equilibrium **r**
    - DD_{LF} depends on willingness of households to borrow to buy consumer durables/housing & firms to **I** (eg. R&D/purchase capital goods)
      - Govt may also demand LF to finance public infrastructure projects & fiscal deficits
      - Lower **r** → lower cost of purchasing durables/more profitable **I** projects → greater Q_D of LF → downward sloping DD_{LF} curve



    - SS_{LF} determined by level of savings (S) by households & firms in the economy
      - Higher **r** → higher opp. cost of C, since **r** from saving is higher → **r** directly related to S → upward sloping SS_{LF} curve
  - Factors for changes in DD_{LF}
    - Expected profit – rise in expected profits from new capital → more **I** → higher DD_{LF}
    - Tech advancement → higher productivity → more expected profits → more **I** → higher DD_{LF}
    - High EG → optimism → more inclined to C & **I** →higher DD_{LF}
    - Fiscal deficit → govt may need to borrow → higher DD_{LF} (→ possible crowding out of **I**)
  - Factors for changes in SS_{LF}
    - Disposable income – greater disposable income → higher S cet par → higher SS_{LF}
    - Expected future income – expected rise in income → higher C → lower S → lower SS_{LF}
    - Monetary policy – expansionary MP → M_S rises → SS_{LF} rises

Types of monetary policy

Expansionary

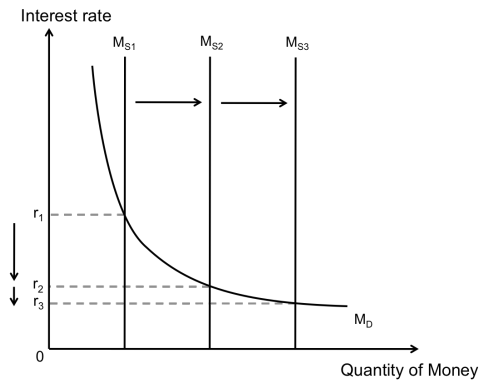
- Applied to stimulate AD (eg. during recessions)
- Increases M_S → cet par, **r** falls → stimulates C, **I** → AD rises → RNY rises → EG + employment
  - Direct transmission mechanism – MP (eg. selling bonds) directly encourages buyers to C, **I**
  - Indirect transmission mechanism – MP increases M_S → indirectly induces C, **I**
- Externally, when **r** falls → hot money outflows → SS of currency in forex mkt rises → depreciation → by MLC, (X-M) rises → AD rises → multiplier → BOT/BOP improves

Contractionary

- Applied to dampen inflationary pressures in the economy
- Decreases M_S → cet par, **r** rises → stimulates S (∵ more attractive) + cut back on C of big-ticket items & **I** → C, **I** falls → rise in AD moderated → reduced DD-pull inflation
- Externally, <u>opposite</u> effects of expansionary MP occur → BOT/BOP worsens

Limitations of monetary policy

Expansionary



- Interest elasticity of M_D
  - The more **r**-inelastic the M_D, the bigger the change in **r** for a given change in M_S (contrast $\mathbf{r_1}$ → $\mathbf{r_2}$ & $\mathbf{r_2}$ → $\mathbf{r_3}$ for the same increase in M_S)
  - Thus, bigger impact on AD → bigger change in RNY
  - **Liquidity trap** – where M_D is perfectly **r**-elastic
    - Raising M_S has no effect on **r** → MP via indirect transmission mechanism is ineffective in this case
- Expectations of future state of economy
  - The more pessimistic people are, the more **r**-inelastic the MEI curve
  - MEI theory: If MEI is **r**-inelastic, then changes in **r** will result in less than proportionate changes in **I** → less effective in stimulating AD → ∵ **I** is also dependent on confidence in future profits
- Inability to achieve specific macro-objectives – MP stimulates AD → ineffective at tackling some AS problems (eg. structural unemployment) → need SS-side policies
- Time lags, imperfect info of govt, etc

Contractionary

- Availability of alternative funds
  - If foreign sources of funding (eg. FDI from MNCs) are abundant as in S'pore's case, effectiveness is reduced → ∵ FDI is likely independent of local **r** → level of FDI could remain constant or rise
- Irreversibility of long term **I** projects
  - Some long term projects cannot be abandoned easily without great losses → **I** may not fall
  - If expected RoRs can cover higher **r**, firms will still borrow to **I**
- Conflicts with other macro-objectives
  - In warding off inflation → unemployment + BOP worsening → conflict
- Expectations of future state of economy, time lags, imperfect info of govt, etc

Exchange rate policy *– Management of a country's XΔr by its CB to achieve desired economic effects*

Exchange rate (XΔr) systems

- Floating XΔr system
  - XΔr determined solely by free market forces
  - Factors affecting DD & SS of currency
    Short run fluctuations
    - Relative **r** between countries
    - Expectations of currency traders of future value of given currency against foreign ones

    Long run trends
    - Relative inflation rates
      - Country A has higher inflation than Country B → prices in A rise faster than B → A's X relatively more expensive → Q_X of A falls → R_X of A falls → total DD for A's currency falls → depreciation
      - Also, M from B are relatively cheaper for locals in A → substitutes of domestic gds in A → DD & Q_D for B's X & rises → P_M & Q_M rise in A → R_M of A rises → total SS of A's currency rises → depreciation
    - Relative rates of productivity growth
      - Higher productivity in A → COP falls → P falls → if PED > 1, DD for A's currency rises → appreciation of A against B
      - Appreciation → A's goods are relatively cheaper → A imports less of B's goods → R_X of B falls → DD for B's currency falls → A appreciates against B
    - Preferences for imported goods
      - Preference for imported gds → DD_M rises → R_M rises → SS of local currency rises → cet par, depreciation
- Fixed/pegged XΔr system
  - Used to minimise uncertainty & prevent fluctuations in XΔr
  - Done by fixing external value of domestic currency at a specific XΔr to another currency
    - CB affects SS of domestic currency by buying/selling foreign currency in response to mkt changes → value of currency remains constant, but Q_T in forex mkt changes
    - No fluctuations from E_0 are permitted unless govt decides to change it **(de/revaluation)**
- Managed/Dirty float XΔr system
  - Compromise between fixed & floating XΔr
  - Done by allow external value of domestic currency to fluctuate within a certain band
    - Similar way of management as fixed XΔr system, but more relaxed

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Monetary policy in Singapore

- MP in S'pore is centred on XΔr management
  - **Small** economy → import price taker → XΔr is powerful tool to offset imported inflation
  - **Open** economy → free capital mobility → small fluctuations in relative **r** result in big, quick movements of funds → difficult to control M_S by local **r** → ∵ quickly offset by capital flows
  - **Small** domestic market → very dependent on external sector → XΔr controls largest components of S'pore's AD
  - ***Open Economy Trilemma*** *– An open economy can only have 2 of the following: control over **r**, control over XΔr or an open financial account (ie. ease of inflow/outflow of money)*
- Main aim of S'pore CB – **promote sustained non-inflationary economic growth**
- XΔr policy stance – **gradual & modest appreciation of SGD**

Nominal Effective Exchange Rate (S$NEER) *– Value of SGD against trade weighted basket of foreign currencies, without eliminating effects of inflation between countries*
Real Effective Exchange Rate (S$REER) *– S$NEER with effects of inflation eliminated*

Conduct of MP in Singapore

- SGD managed against trade-weighted basket of currencies of major trading partners/competitors
  - Currencies chosen are main sources of imported CPI inflation & competition
  - Weighted according to our trade dependence with the country concerned
  - Reviewed & revised periodically to suit changes in Singapore's trading patterns
- SGD fluctuates in an undisclosed band → ∵ hard to keep SGD value exactly at S$NEER value

Macro-effects of XΔr policy

All points are in the case of a depreciation of the SGD, assume the inverse is true for an appreciation.

- Fall in SRAS + rise in AD → actual growth
  - Depreciation → imported G&S relatively costlier → COP rises → SRAS falls (cost-push inflation)
  - Depreciation → exported G&S more price competitive, imports cost more → by MLC, (X-M) rises → AD rises → RNY increases
  - Overall effect – actual growth + inflation → gains of export competitive offset by COP rises
- Higher inflation, reduced unemployment
  - RNY increases → more workers employed to meet DD → reduced unemployment
  - COP rises → cost-push inflation + wage-push inflation (assuming lack of spare capacity)
- Improvement in BOP position
  - Depreciation → by MLC, (X-M) rises → BOT improves → cet par, BOP improves
  - However, this may not cure the root cause of BOP deficit (eg. loss of CA) → depreciation is only a SR solution → need productivity-boosting policies & economic restructuring for LR

Limitations of XΔr policy

- Conflict with other macro-goals
  - Depreciation – raise RNY & employment, but brings imported inflation/wage-price spirals
    → This is a once-off, short-term stabilizer in severe global recessions
  - Appreciation – dampens DD-pull inflation, but worsens CA & AD & unemployment
    → In LR, low stable inflation allows for export competitiveness eventually → ensure stable, sustained EG
- Time lags
  - **J-curve effect** – In vSR, DD for X&M may remain price inelastic following a depreciation by CB → further worsening of BOT → improves after a longer time period
    - Due to time taken for consumers to change C & M patterns and for producers to fulfill terms of prevailing contracts before effecting new revised ones
  - Recognition, implementation & impact lags also apply here as for other policies
- Availability of reserves (only for keeping currency over-valued)
  - Holding XΔr above eqm involves using foreign reserves to buy up domestic currency
  - Insufficient reserves → speculators expect eventual depreciation → massive sell-off → downward pressure on XΔr due to simultaneous DD fall & SS rise
- Imperfect info
  - CB does not have complete, updated info on state of economy → lags in data capture
  - CB does not have perfect understanding of linkages & workings of economy
  - Dynamism of domestic & foreign economies make it even harder to plan suitable action

SS-side policy *– Policies designed to improve SS-side potential & operative efficiency of an economy*

Types of SS-side policies

Market-oriented – ***reduce role of govt + enable free working of the market***

- Product markets – raise competition & efficiency → raise productivity & lower COP
  - Privatisation (raise competition + cost-efficiency)
    - Sale of public enterprises to private sector → give new owners responsibility of restructuring enterprise → more incentive to cut costs to ensure survivability → COP falls → SRAS rises
    - Allows price mechanism to provide lower prices for consumers → closer to AE
    - Breaks up state-owned monopolies → more competition → cost savings across industry
      - **1995:** State-owned energy monopoly Singapore Power privatised to Temasek Holdings
      - **Now:** Energy market further privatized → SemCorp & Keppel Energy allowed to compete in contestable segments of the energy market
      - **2018:** Electricity market to be fully liberalized → expected to yield 5-15% cost savings
  - Pro-competition policies (raise cost-efficiency)
    - Forces firms to be more efficient in resource allocation & costs → AE + X-eff. + lower prices
    - Greater competition → lowers COP → rise in SRAS
    - **Examples of such policies in Singapore:**
      - Tougher competition policy regime – policies/authorities that curb anti-competitive practices (eg. Competition Commission of Singapore, 2004 Competition Act)
      - Removing BTE – allows newer, more innovative firms to enter & raise competition (eg. Singtel, M1, Starhub, MyRepublic)
      - Promotion of freer trade – reduction/elimination of tariffs & import restrictions → create competition for domestic producers → catalyst for cost-reductions & lower prices
    - However, in LR, reconcentration of market is possible as uncompetitive firms leave
    - Larger, more established foreign firms may also gain at expense of small local firms
  - Promotion of enterprise (raise competition + innovation → lower COP, higher productivity)
    - Done through extension of loans, provision of technical expertise & support
    - More new start-ups & small businesses → raise competition
    - Start-ups also often bring new tech & production methods → increase productivity → increase in productive capacity → rightward shift of LRAS curve
    - **Singapore:** Govt statutory boards (eg. SPRING, IE Singapore, IDA) help SMEs
      - Specifically, SPRING offers tax incentives and grants for productivity improvement schemes (eg. Productivity & Innovation Credit Scheme (PIC))
      - SPRING also works with local banks to provide loans at attractive interest rates to SMEs
      - These measures lower the perceived risks of starting up businesses → encouraging :D

- Labour markets
  - Reducing power of trade unions (raise competition & **I** → COP falls, prod. capacity rises)
    - Reduce union's ability to unilaterally raise wages → wages monitored/projected more accurately → encourage firms to **I** → LRAS can rise
    - Strike incidence falls → prevents loss of O/P + increase business confidence → attract FDI → raise productive capacity → LRAS rises
    - Labour costs will be kept lower → reduce extent of cost-push inflation
    - **Singapore**: Tripartite policy ensures harmonious industrial relations between employers, workers & the govt → collectively form National Wage Council (NWC)
      - Aim of NWC – to align wage increases with national productivity growth
      - Employers represented by Singapore Employers Federation (SEF)
      - Workers represented by National Trades Union Congress (NTUC)
      - Govt represented by Ministry of Manpower (MOM)

- Tax reforms (income tax reduction) (raise **I** & SS_{labour} → prod. capacity rises, COP falls)
  - Reduce personal income/corporate taxes → encourage workers to work & save/firms to **I** → higher productivity & new production tech/methods → rise in LRAS
    - Lower personal income tax also attracts foreign talent/prevent brain drain
    - Lower corporate taxes & **r** (∵ higher S) → attract local **I** & FDI
    - Overall, lower taxes → raise SS_{labour} & **I** → rise in prod. capacity → rise in LRAS
  - **Singapore:** Series of tax reforms → shift from direct to indirect taxes
  - However, low taxes is insufficient to attract enough FDI to raise productive capacity → countries can engage in "tax incentive wars" → political stability & conducive business environment are also critical, if not more so
- Cuts in social/welfare schemes (raise SS_{labour})
  - Overly comprehensive unemployment benefits reduce incentive to rejoin workforce → cutting these schemes increase willingness of the unemployed to find jobs again → rise in SS_{labour} → rise in productive capacity & LRAS
  - However, it is important to maintain a safety net → impt with widening income inequality
    - **Singapore:** Welfare support programmes form a "safety trampoline" (rather than a net) to help the disadvantaged quickly get back on their own feet

Interventionist – ***direct govt intervention (∵ free mkt gives too little incentive for training/R&D/I)***

- Manpower policies (education & training)
  - Income policies (wage guides/freezes, flexible wages) (maintains/reduces COP)
    - Ensure wage rates are flexible → rise according to national labour productivity growth rate
      - Wage growth rate should be less than or equal to productivity growth rate
      - This ensures unit labour cost is less than labour productivity → low labour cost → cet par, unit COP remains low → rise in SRAS
    - **Singapore:** Flexible labour market, voluntary wage restraints, other income policies
      - 1985-6: Wage freezes & reduction in CPF contribution rates
      - 2008-9: Jobs Credit Scheme → businesses receive cash grants based on employees' CPF → help to defray labour costs → help retain workers → maintain employment rate
      - Now: Wages have variable aspects (eg. Monthly/Annual Wage Supplement & bonuses)
    - However, wage guides are voluntary & variable wage components negotiable → issues of non-compliance (esp. for trade union leaders) & unwillingness → need cooperation to work
  - Education & training (raise productivity)
    - Upgrade human capital by education/training → reduce labour mkt imbalances/bottlenecks
    - Policies work by incentivizing firms to train their workers → ∵ firms may be unwilling to train on their own accord as benefits are lost when workers leave
      - Mkt failure of training – imperfect info & ineff. DD of employees & +ve ext. for employers
    - Education/training → improve skills & quality of workforce → +ve externalities + attracts FDI + increased productivity → LRAS rises
    - Labour productivity grows faster than wages → unit labour cost falls → SRAS rises also
    - Training also improves occupational mobility → reduced structural unemployment
    - **Singapore:** Array of education & labour policies to get workers to upgrade themselves & keep their skill sets current
      - SkillsFuture – All Singaporeans aged ≥25 years given $500 in credits for registered training/self-upgrading courses
      - Skills Development Fund (SDF) – Subsidies on training costs (up to 90%)
      - Applied Study in Polytechnics & ITE Review (ASPIRE) – Aims to have better structured internships for polytechnics & ITEs with closer industry relevance
    - However, retraining takes a long time & doesn't guarantee improved labour productivity
      - Employer support is also important in ensuring high enrolment rates of workers

- Nationalisation <u>(raise prod. capacity, lower COP)</u>
  - Transfer of strategic industries (eg. transport/telecomm) from private to public sector
  - Better coordination/prudence by govt → increased iEOS & **I** → increases prod. cap. & LRAS
  - **Singapore:** Public utilities & port operations are nationalized industries
    - Public Utilities Board (PUB) oversees various levels of coordination to managing water
      - Collaboration with A*STAR (R&D), NParks (water management), Dept of Statistics
    - Port of Singapore Authority (PSA) oversees port operations
      - Collaboration with Police Force (coast guards) & A*STAR (R&D)
- R&D grants <u>(raise prod. capacity, lower COP)</u>
  - Govt sponsors R&D in certain industries → spur R&D for potential large +ve externalities
    - Mkt failure of R&D – imperfect info & ineff. DD by firms, and +ve externalities for society
  - Successful R&D → tech advancement → raise prod. capacity & lower COP → rise in overall AS
  - **Singapore:** Research Innovation Enterprise (RIE) 2020 plan
    - $19 billion commitment to supporting R&D in areas of urban solutions & sustainability and health & biomedical sciences
  - However, R&D results are not guaranteed & there is a long gestation period for good results

Summary of effects of SS-side policies
- Raise RNO/P without increase in GPL → sustained EG + low stable inflation
- Raise workers' responsiveness & occupational mobility → low frictional/structural unemployment
- Lowers COP & improves product quality → competitiveness → increased DD_X → improved BOP
- Skilled, well-educated workforce → attracts FDI & foreign talent → improves CA → improved BOP

Note: SS-side policies are primarily used to improve SS-side potential, but may also have secondary AD effects, which can be used for evaluations.

General limitations of SS-side policies
- Long term in nature → takes time for effects to be felt
- Uncertainty in results → possible ineffective execution or variability in results (esp. for R&D)
- Significant G incurred to implement such policies → opp. cost in other areas → limited by fiscal budget/strong political opposition

INTERNATIONAL TRADE

International trade *– The exchange of G&S between countries involving the use of different currencies & crossing international borders*
Free trade *– Trade in absence of controls that affect the value & quantity of imports & exports*
Comparative advantage (CA) *– When a country can produce a good at lower opp. cost than others*
Absolute advantage (AA) *– When a country can produce more G&S with the same amt of resources*

Theory of Comparative Advantage

- Countries have diff endowments of FOP, pop. density, climate, etc → diff abilities to produce G&S
- Trade allows specialization in G&S that countries are better at producing, while trading for other G&S they need & are less efficient at producing
- **As long as countries incur different COPs for each G&S, there is basis for beneficial trade**
  - ***Law of Comparative Advantage*** *– Countries will gain from trade if they have different relative opp. costs of producing specific goods*
  - Specialisation in product with CA → total O/P of good increases → rise in O/P can be used to trade for other products the country has no CA in

Illustration of benefits of specialisation with CA

Assumptions

- Only 2 countries & 2 goods (eg. China & US and wheat & cloth)
- Each country has equal amounts of resources & devotes half to each good produced
- Labour is the only FOP → perfectly mobile within countries, but perfectly immobile between them
- No transport costs/trade restrictions → no costs of specialisation
- Constant opp. costs of production → constant returns to scale

Initial scenario

- US has AA over China for both goods
- However, US can produce 10 times more wheat, but only 2.5 times more cloth than China → CA in wheat, but no CA for cloth

Initial	Wheat	Cloth
US	100	50
China	10	20
World	110	70

Opp. costs of production

- To produce 1 unit of cloth, China forgoes less wheat (0.5 < 2.0) → CA in cloth production
- Similarly, to produce 1 unit of wheat, US forgoes less cloth → CA in wheat production

Opp. costs	Wheat per cloth	Cloth per wheat
US	2.0	0.5
China	0.5	2.0
CA	China	US

Specialisation

- US partially specialises to wheat, diverting 10% of resources from cloth to wheat, while China completely specialises to cloth only

Specialise	Wheat per cloth	Cloth per wheat
US	120	40
China	0	40
World	120	80

Trading

- If terms of trade (ToT) is 1 wheat : 1 cloth, then US can trade 15 units for wheat for 15 units of cloth with China

Traded	Wheat per cloth	Cloth per wheat
US	105	55
China	15	25
World	120	80

- Acceptable ToT must lie between relative opp. costs of production of the 2 countries
- ToT determines the distribution of gains from trade between countries → affects BOT & SOL
- In the end, US gains 5 units of cloth while China gains 5 units of wheat → both countries benefit from high total O/P → can ***consume*** **(not produce)** beyond PPC

Sources of CA

- Factor endowment
  - Different countries have different climates & resources → differences persist as mobility of these resources are restricted to some extent
  - Result in different relative factor prices between countries → different prices of G&S
  - Countries can specialise in goods that use abundant FOPs → efficient production → CA
  - However, endowments may change over time → ∵ savings accumulate capital & education raises skill level of workforce
- Technological state
  - Countries at diff stages of development have differing intensities of R&D & tech absorption
  - Tech can also be traded → doesn't give CA → but continually being technically advanced is a CA
- Dynamic CA – changing pattern in CA
  - Additional resources can be created or imported → changes in CA/lack of CA over time
  - Govt can establish industrial policies to promote opportunities for change in CA → encourage/develop growth of certain industries
    - Development strategies → promote importing of capital goods
    - Tax/subsidies → funding R&D, tax relief for **I** projects
    - Labour training/education policies → upgrading of tertiary institutions
  - **Singapore:** Went from labour-intensive to knowledge-based economy

Limitations of theory of CA

- Artificial barriers to trade (protectionism)
  - Govt restrictions (eg. tariffs, quotas, preferential trading) hinder theoretical free trading
  - Free trade agreements (FTAs) & diplomatic relations
  - In reality, transactions made with money → restrictions on foreign currency holdings/ convertibility apply → hinder trading
  - Incomplete specialisation
    - Countries tend to import from a variety of locations → lower vulnerability to external shocks
- Natural barriers to trade
  - High transport costs – costs of moving goods
    - Includes freight charges, packing, handling expenses & insurance premiums
    - Add a significant margin to prices of traded goods → lower gains from trade → might even be cheaper to produce goods locally than to import them
    - Trade may be motivated by proximity rather than differences in CA
  - Lack of FOP mobility
    - Resources may be not as mobile/adaptable between industries → structural unemployment
    - Very often, country cannot move FOP quickly & efficiently into industries with CA
  - Increasing COP
    - Diminishing returns will set in beyond a certain O/P level → raise average COP → increasing opp. cost → ∵ expansion of industries drive up factor prices
    - Countries will continue to specialise until relative cost differentials are eliminated → no basis to specialise & trade more → thus, partial specialisation is more common in reality
  - Imperfect information
    - Larger country → larger market → harder to work out comparative cost → may not specialise to full extent

Effects of international trade

Micro-advantages

- Improved consumer welfare, choice & product quality
  - Greater world O/P → countries can trade to consume quantities of G&S beyond natural PPC curve → higher levels of consumer welfare
  - International market → foreign competition → lower prices, higher quality goods
  - Differentiation of products also results → cater to different tastes & preferences
- Reap iEOS & eEOS → higher profits & lower prices
  - iEOS – savings in costs to a firm due to its expansion
    - CA → high-volume, low-cost producer of that good → significant cost savings
    - Allows smaller countries (eg. S'pore/Israel) to specialise in high-value services → export to other nations → wider market → reap iEOS
  - eEOS – savings in costs to all firms due to industry's expansion
    - Economies of concentration (eg. joint training facilities/infrastructure)
    - Savings can be passed on to consumers as lower prices → higher consumer welfare
    - Higher profits → invest in R&D → improve quality of goods → dynamic eff.

Macro-advantages

- Stimulate EG & development
  - Trade allows small, open economies to overcome restraints of small domestic market
  - More open economy → conducive for **I** & FDI → AD rises → EG + employment → rise in SOL
  - Trade also allows exchange of tech & ideas → raise efficiency & prod. capacity → AS rises
- Lower inflationary pressures
  - Cheaper imports → directly lower CPI → lower inflation rate
  - Cheaper raw materials → lower COP → increase in SRAS → dampen inflationary pressures
  - Increased competition → prevent complacency in local producers → higher efficiency, quality & lower prices → lower inflation locally
- Dynamic gains from trade
  - International trade → higher RNY & RNO/P → higher S & **I** → higher EG rates
  - Open economy → increases in imported capital goods → raise productivity & potential growth
  - These gains tend to grow larger over time → faster overall growth rate
- Improved BOP
  - Increases in trade of G&S → (X-M) rises → improved CA
  - Inflows of FDI → improved FA → BOP improves overall → external stability
- Promote political relations
  - Strong trade links & international projects foster stronger political ties → stronger cohesion

Micro-disadvantages

- Dumping → unfair competition
  - ***Dumping*** *– Selling of goods in overseas markets below marginal COP* → drive out rivals in that country → monopolize overseas market
  - Local industries may not be able to compete against foreign exporters → cannot develop
  - If production is subsidised in exporting country → unfair competition with local producers
- Imports of harmful goods (-ve externalities)
  - Free trade → import of harmful goods (eg. drugs, alcohol) → bad for consumption habits & social values + -ve externalities

Macro-disadvantages

- Over-reliance on foreign countries → vulnerable to external shocks
  - Complete specialisation → narrowing of economic structure → limited range of G&S produced & jobs available → structural rigidity → slow recovery from external shocks
    - Over-reliance on foreign countries as export markets → susceptible to externally-induced cyclical/structural unemployment → ∵ crises in importing countries/change in external DD transmitted
    - Imported inflation is also a possible threat
    - Thus, need to diversify exports & trading partners → minimise impact of external crises
  - Certain goods are basic/strategic (eg. food & water) → cannot depend solely on foreign suppliers → need to design sound economic policies
- Possibility of worsened BOP
  - Free trade in poor conditions → (X-M) falls + net capital outflow → worsened BOP overall → external instability
- Widening income inequality
  - International trade → rapid EG → widening income disparity
    - Specialisation by CA → some industries grow faster than others → if industries grown are capital-intensive, DD for higher-skilled workers is higher → faster wage growth for higher-skilled workers → rising income inequality

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Pattern of trade *– Types of G&S being traded (composition) & direction of trade*
Re-exports *– Goods that are exported in the same form/minorly processed as when imported*

Determinants of patterns of trade

- Intra-industry trade
  - Demand factors – tastes & preferences for product quality & variety
  - Exploitation of EoS – countries specialise in producing a differentiated good
- Inter-industry trade
  - Factor endowments – different sources of CA
  - Demand factors – tastes & preferences, population growth, income levels, etc.
  - Natural & artificial barriers to trade, transport costs, globalisation, market imperfections, etc

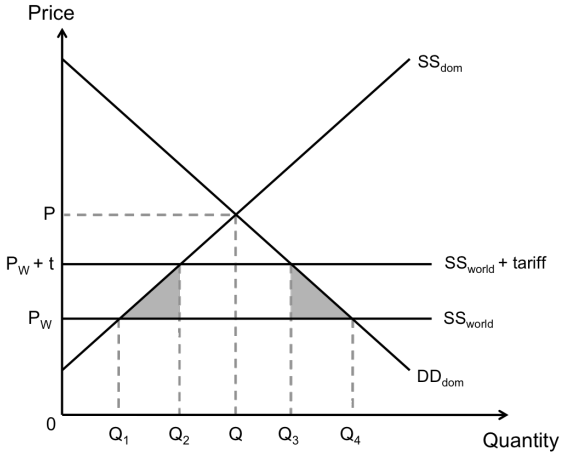
Important features of Singapore's economy

- Very open economy – exports mainly to China, Hong Kong, Malaysia, Indonesia, Japan, EU, US
- Strategic location → natural CA in transportation & maritime services
- Pattern of trade influenced by trends in globalisation & govt policies – pharmaceuticals, clean energy, medical tech → diversify economy to where potential CA may arise
- Mainly involved in the trade of services → ∵ global trend in outsourcing services due to availability of skilled professionals
- Re-export economy → ∵ resource-poor nature of economy
- Major industries: Electronics, pharmaceuticals, chemicals, banking & finance, trading
- Major trading partners: US, China, Malaysia, Japan, Taiwan, Indonesia, HK, EU

Protectionism *– Sheltering dom. industries from foreign competition by trade barriers on imports*

Methods of protectionism

- Tariffs (raise P_M → M falls)
  - Custom duties/taxes imposed on imports by govt → raise price of imports
  - Traditionally used as a source of govt revenue (T) & to protect particular dom. Industries
  - Assume DD_{dom} is negligible relative to SS_{world} → SS_{world} perfectly price elastic
  - In absence of trade, $P_{dom} = P$, $Q_{dom} = Q$
  - Under free trade, $P_{dom} = P_W$ (∵ price-taker)
    - Dom. prod. = $0Q_1$, dom. consumption = $0Q_4$
    - Imports = Q_1Q_4
  - After imposition of specific tariff of $t/unit, SS_{world} shifts up by t units & $P_{dom} = P_W + t$
    - New dom. prod. = $0Q_2$, new dom. consumption = $0Q_3$, imports = Q_2Q_3



  - Net economic effects of tariff
    - Reduced overall consumption by Q_3Q_4
    - Reduced M, with increased dom. prod → consumers switch to dom. substitutes (protection)
    - Govt receives tax additional revenue of area (Q_2Q_3 x t)
    - CS falls, PS increases → net DWL indicated by shaded triangles
  - **However, overall effect depends on PED_M & if foreign suppliers absorb part/all of tariff**
  - Also, if M falls → BOT improves → appreciation, cet par → reduce price competitiveness of X → X falls → unintentionally hinders development of export industries
- Import quotas (restricts Q_M)
  - Limits imposed on physical quantities/values of imports below free trade conditions
  - This causes both foreign & dom. producers to charge the same higher price → R rises
  - Provide for greater certainty of protection for local producers than tariffs
- Export subsidies (reduce COP)
  - Cash grants given by govt → reduces COP → allow local producers to sell more at prevailing P
  - Such subsidies given to export/import-substituting industries
- Foreign exchange controls (restrict forex)
  - Govt control over purchase of forex → limit amount & types of X & M
    - Limits on amount of forex available to importers, residents abroad or for **I** (financial quotas)
    - Charges on purchase of foreign currencies
- Embargoes ($Q_{M/X} = 0$)
  - Complete bans on certain X/M from or to certain countries → done for social/political reasons
- Trade agreements
  - Bi/multi-lateral agreements between countries to buy from each other
  - **Note:** Commodity agreements (eg. on coffee/tin/rubber) aim to ensure stable prices for countries producing primary goods
- International cartels
  - Collusive agreements among countries producing a certain commodity to fix P & O/P → diminish competition & increase profits
- New protectionist measures (disguised restrictions)
  - Subtler forms of trade barriers
    - Implementation of technical specifications & standards that favour dom. producers more
    - Preferential treatment for dom. firms when awarding public sector contracts
    - Bureaucratic administrative regulations on import procedures → delays & reduces Q_M

Arguments for protectionism

- Protection of infant industries
  - Newly established industries with potential CA incur heavy initial costs → cannot be covered by small initial O/P → need time to develop skilled management, reputation & exploit iEOS
  - LR aim: Allow firms to lower ave. COP by reaping iEOS → compete on more equal footing with competitive pricing locally & abroad
  - Once industry has achieved its CA, protectionist measures are removed
    - It is difficult to know when this occurs though
    - Some industries may remain as "perpetual infants" → continue being inefficient due to complacency → ∵ lack of incentive to innovate & optimize processes for competition
  - **But, it is difficult to identify industries with potential CA** → opp costs of subsidizing the wrong industries & failure to protect actual infant industries lead to higher unemployment
- Protection of sunset/mature industries
  - Mature industries lose CA as tech advances or new, better competitors enter → need to protect to prevent massive structural unemployment
  - Protectionism buys time for resources to be diverted to other economic sectors
  - **But,** protectionism is usually brought by trade unions of industries where **wages have risen faster than labour productivity growth** → priced out of market
    - Under such cases, protectionism only perpetuates domestic inefficiency → allocative ineff.
    - Benefits of increased employment in these industries are achieved at expense of trading partners (beggar-thy-neighbour)
- Reduction of BOP deficits
  - Deficit could be due to importing too much → depletes foreign currency reserves → govt imposes restrictions on M to correct BOP deficit (eg. tariffs)
  - Assuming $PED_M > 1$, M falls → (X-M) rises → BOP improves
  - **But, effectiveness depends heavily on PED/PES of X & M**
  - **Also, protectionism does not target root causes of BOP deficit (eg. X not price-competitive)**
- Protection against unfair trade practices (eg. dumping)
  - ***Dumping*** *– The sale of goods in an overseas market below their marginal COP to monopolise that market by driving out local rival producers*
  - Dumping is made possible often by govt subsidies or PD
  - Reduces domestic O/P & employment → ∵ locals cannot compete against foreign exporters
  - Prices are then increased after the collapse of local industry
  - Dumping distorts the market → long term damage → protectionism is justified
  - **But, level of protection should cover only the difference in P_X and normal P**
  - **Also, lower export prices may simply be due to CA or differences in PED → unjustified**
- Diversification of economy
  - Over-specialisation & over-reliance on other countries increase vulnerability to ext. shocks → potential massive structural unemployment → shield other industries to gain diversity & self-sufficiency, esp. if ToT are moving against goods of specialised industries
  - Patterns of CA may change over time into these protected industries → balanced EG
  - **But, this goes against theory of CA**
- Protection against low-wage foreign labour
  - Citizens in local industries with higher wages are threatened by influx of cheaper imports by emerging countries where wages are lower → local industries may be edged out → unemployment & fall in SOL
  - To protect locals' jobs, higher tariffs & other measures are taken
  - **But, this goes against theory of CA & only perpetuates local inefficiency → lose benefits of trade like cheaper G&S**

- Increase domestic production & NY in recessions
  - Protectionism is an emergency SR measure to avoid heavy unemployment
  - Tariffs/quotas → divert DD towards local production → create jobs **(use tariff diagram here)**
  - Justified as it is a way to stimulate the economy out of recession/stagnation
- Increase government revenue
  - Import tariffs on goods with inelastic PED/PES (eg. alcohol) provide govt revenue to finance G
  - Very useful in low-income countries that need funds to finance social investments
  - **But, retaliation by producing country may lead to reduction in X → loss of govt revenue**
- Retaliation to protectionism of other countries
  - Tariff walls may be used as a bargaining tool when another country wishes to import tariffs against their goods
  - **But, this is unhealthy for world trade as everyone loses in such trade wars**
- Political reasons
  - Countries subsidise weapons industries to ensure a supply of armaments & aircrafts in case of war, even if it is uneconomical to do so → value of **national security** is higher than costs
  - Protectionism may also be used to promote locally-produced goods out of **patriotism**
  - Trade is also used as a weapon in foreign policy against countries with differing political stances
- Social reasons
  - Subsidisation of agricultural sector → avoid further depletion of rural areas
  - Bans/severe restrictions on demerit goods (eg. alcohol, pornography)

GLOBALISATION

Globalisation *– The growing economic interdependence of countries through increasing volume & variety of international transactions, largely in G&S, free flows of capital, spread of tech & labour*
Economic integration *– Economic interdependence between countries by preferential trading arrangements (eg. FTAs/economic unions) that reduce/eliminate trade barriers between countries*

Causes of globalisation
- Mainly due to reduction in costs of transportation & communication and artificial barriers to flows of trade, capital, technology & labour across borders
- Current wave is driven by policies & tech advancements
  - Policies open economies globally → reductions in barriers to trade & establishment of international agreements → firms enter foreign markets → international industrial & financial business structure
  - Tech advances provide tools to identify & pursue economic opportunities (eg. big data)
  - Transportation improvements allow firms to fragment production according to cost conditions
  - Growth of internet & e-commerce allow firms to compete more easily in global markets

Trade creation *– Shift in trade from high-cost producer to low-cost member country*
Trade diversion *– Shift in trade from low-cost non-member country to high-cost member country*

Effects of globalisation on global trade flows
- Greater economic integration → increased free trade → various benefits & costs of trade
- Signing of more free trade agreements (FTAs)
  - Main types of arrangements are free-trade areas (FTas) & customs unions (CUs)
  - In FTas, countries eliminate trade barriers among themselves, but maintain individual barriers against non-member countries
  - In CUs, countries must maintain common trade barriers against non-member countries
  - These arrangements change patterns of trade → trade creation & trade diversion
  - Trade creation results in higher AE, while trade diversion results in lower AE, due to their resultant trade movements going with/against principle of CA
  - **Overall effect of FTA is more likely to be positive if:**
    - Prices of member countries closely approach the low-cost world price
    - Initial tariff rates were higher between existing members and non-member countries
    - PES and PED of existing member countries are more price elastic
    - Large number of countries participating in FTA → ∵ less countries for trade diversion

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FDI *– Movement of capital that involves foreign ownership & control of production facilities*
Outsourcing *– Transfer of part of an organisation's operations to an external, low-cost organization*
Offshoring *– Outsourcing across international borders*

Effect of globalisation on FDI flows
- Occurs when parent company obtains sufficient common stock in foreign company to assume voting control, acquires/constructs physical capital overseas, shifts funds abroad to finance expansion of its foreign subsidiary, or reinvests profits of foreign subsidiary into plant expansion
- Carried out by MNCs → ∵ operate over more than 1 host country
- More open economy → higher rate of private **I** → EG + job creation

- Benefits & costs of FDI
  - Benefits to recipient country
    - Improves capital/financial account → improve BOP
    - Supplement insufficient dom. S & **I** → increased fixed capital formation → AD rises
    - Establish productive facilities → job creation → DD labour → higher employment & wages
    - Generates more corporate tax revenue for host govt
    - In LR, **I** increases → higher capital accumulation → better productivity → rise in prod. capacity → LRAS rises → potential growth
    - If foreign firm is X-oriented, X will rise → improved BOT, and thus BOP
  - Costs to recipient country
    - Dual economy creation → ∵ FDI benefits some sectors only → unequal growth → inequality
    - Destruction of environment → -ve ext. → social inefficiency
    - Lower dom. competition due to entrance of large foreign firm → higher P & unemployment
    - MNCs physically crowd out dom. **I** by buying up physical assets (eg. land) → dom. **I** falls
    - Dutch disease: Inflow of capital → appreciation → reduce price competitiveness of X → stunts growth of export sector
    - Instability in BOP & XΔr → ∵ capital inflows, input imports, repatriation of profits → difficult for long-term planning
  - Benefits to source country
    - Capital equipment & other material inputs need to be exported to subsidiary → X rises
    - Also, when recipient countries of FDIs develop, RNY rises → encourage importing of source country's goods → X rises
    - In LR, FDI generates return flow of interest/dividends back → improves current acc. & BOP
  - Costs to source country
    - Worsening capital/financial accounts → worsening BOP
    - Rising unemployment → ∵ outflow of **I** due to shift of production overseas
    - (X-M) falls → AD falls + worsening current account → lower actual growth & employment
      - Goods produced in recipient country could be directly exported to overseas market than through source country → trade displaced from source country → X falls
      - New FDI plant assembles/produces labour-intensive products in labour-intensive recipient country, but source country is more capital-intensive → M rises
    - If FDI outflow is due to outsourcing/off-shoring → fall in local job opportunities
    - Loss of tax revenue from investing firms

- Countries often enact policies to improve benefits over costs like performance requirements (eg. stipulating minimum percent of local employees or maximum percent of profits repatriable)
- Also, O/P of firm is subject to dom. content requirements on inputs & firms may be banned from certain important industries

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International migration – *Movement of people from source to recipient countries for residence for a significant period of time*

Effect of globalisation on labour migration flows

- Similar flow to trade – from places of abundance (low prod.) to places of scarcity (high prod.)
- Labour flows are motivated by differences in wages (ie. wages > cost of moving)
- International labour mobility is a substitute for trade in labour-intensive products

- Benefits & costs of rising labour mobility
  - Benefits to recipient country
    - Migrant workers often are more willing & able to work for lower wages → increased SS_{labour} & lower COP → SRAS rises
    - Increased SS_{labour} & brain gain → better & more labour → productivity rises → LRAS rises
    - Highly skilled & educated immigrants → +ve ext. (knowledge/skills transfer) → lower crime
    - **Overall, inflationary pressures are reduced → sustainable EG**
  - Costs to recipient country
    - Widening income gaps
      - Lower-skilled migrants accept lower pay → wages for these jobs are depressed for locals
      - Foreign talents instead drive up wages of skilled locals with complementary jobs
      - Skilled workers retain jobs & are in higher DD → higher wages → income inequality
    - Unskilled workers have greater job instability → higher social maintenance costs
    - Immigration is akin to population growth → may cause excess noise, conflict & crime
    - **But, children of immigrants will soon enter workforce & pay taxes → immigrants make a net positive contribution to recipient country in LR**
  - Benefits to source country – increase in remittances from emigrated workers
    - Remittances are a major contribution to GNP → finance purchase of necessities, education, housing & healthcare → reduce poverty → improve SOL
    - More remittances → houses save excess money → rise in SS_{LF} → source of capital for firms → spur actual & potential growth in economy
    - Increased remittances → improvement of current account → improved BOP
  - Costs to source country
    - More remittances → DD for local currency rises → appreciation → loss of X-competitiveness
    - Emigration of highly educated/skilled workers → brain drain → limited potential growth
      - Skilled labour shortage → fall in NY, loss of +ve ext (eg. innovation), loss of social investment in subsidizing education
  - Benefits to world economy
    - Enhanced efficiency → ∵ migrant workers are more productively used in recipient countries → overall increase in world O/P
    - Equalisation of wages → ∵ when 2 countries enter FTA, wages for identical jobs converge
      - Analysing via DD-SS framework, SS_{labour} of source & recipient countries respond to the difference in wages between the countries → wages converge as people migrate

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Free trade agreement (FTA) *– A legally binding agreement between at least 2 countries to reduce/eliminate barriers to trade, and facilitate cross-border movement of G&S between them*

Globalisation in Singapore's context

- FTAs are negotiated to enhance X-competitiveness in the face of global competition
- FTAs grant local firms access to cheaper inputs → keep competitive without relocating production
- Benefits & costs to Singapore are identical to the general macro- & micro- advantages & disadvantages of international trade
- Advances in infocomm systems shrink economic distances → reduce DD for conventional roles (eg. overseas HQ, other hub services) that Singapore has done in the past
- Also, more economies embrace open-door trade → low-cost rivals duplicate Singapore's hub roles
- Singapore must respond & take advantage of the immense market potential of close neighbours like China & India, while managing negative aspects of tapping into their growth