

SOL

Material Standard of living refers to the quantity of goods enjoyed by average citizen in a given period of time.

Non-material Standard of living refers to the qualitative aspects of life, and encompasses elements such as healthcare, education, leisure, pollution and traffic (HELPT).

Economic indicators

GDP refers to the value of final goods and services produced within a geographical boundary of a country in a given period of time.

Real GDP takes into account inflation by keeping prices constant at a base year.

PPP refers to rate of exchange that allows a given amount of income buy the same basket of goods and services in another country.

Inflation refers to a sustained increase in GDP over time. Inflation rate is the rate of change of the **Consumer Price Index (CPI)**, which is the weighted price index that measures the price of a fixed basket of goods commonly purchased by a typical household.

Unemployment refers to a situation where households are willing and able to work and are actively seeking work but are unable to find a job. Rate is number of unemployed divided by total labour force.

Balance of Payments refers to record of country's international transactions between residents of a country and the rest of the world. **Favourable BOP position** refers to achieving long-run BOP equilibrium or avoidance of large and persistent BOP deficit.

Productivity is the output per unit factor input.

AD/AS

Investment is the act of acquiring capital goods that can be used to produce other goods and services. Can be divided into domestic investment and FDI.

Multiplier effect states that change in national income can be represented by k multiplied by the autonomous change in Aggregate Demand.

MPC/MPS/MPM

Circular flow of income shows the relationships between different agents in the economy and how the economy comes to an equilibrium level of income, employment and output.

EG

Actual growth is the increase in national income actually produced for a given period of time, commonly measured by percentage annual increase in real GDP. Major determinant is growth in AD.

Potential growth is the long-run expansion of a country's productive potential. It reflects the increase in capacity of the economy to produce. Determinant is an increase in AS.

Cyclical unemployment is caused by fall in aggregate demand, and is associated with economic recessions where NY falls for 2 consecutive quarters

Structural unemployment refers to unemployment that occurs due to a mismatch of skills between the unemployed and the skills required by producers seeking labour.

Exchange Rates

Exchange rate is the price of one country's currency in terms of another currency or as a basket of foreign currencies.

In a **freely-float exchange rate market**, market exchange rate is determined by interaction of market demand for and supply of a country's currency. No intervention by Central Bank.

In a **fixed exchange rate system**, Central Bank intervenes in forex market to control the exchange rate at a fixed rate by using its foreign reserves to influence the demand and supply of the country's currency.

A **managed-float exchange** rate regime is a system of flexible exchange rates but where the Central Bank intervenes to prevent excessive fluctuations in ER.

Multiplier Effect

Standard Multiplier

- Autonomous increase in AD, triggers the multiplier process, which is based on principle that **one man's spending is another man's income**
- **Drawdown of stocks and inventories**, signals firms to increase production and hire more factors of production such as labour from households to replenish their inventories, and pay them factor income.
- Households see rise in income, increasing consumption expenditure and inducing a further increase in AD and giving rise to **cycles of spending and re-spending**
- Rise in income **and induced consumption gets smaller with each successive round as part of rise in income is leaked out** in the form of savings, taxes and imports. Process ends when **cumulative withdrawals is equal to the initial increase in autonomous AD**.
- This results in a new and higher equilibrium level of national income to be achieved, with a **magnified increase** in national income as compared to initial rise in AD.

Reverse Multiplier

- Autonomous decrease in AD, triggers reverse multiplier process, which based on principle that **fall in one man's spending leads to fall in another man's income**
- Firms see **piling up of stocks and inventories**, signals them to cut back on production, **hire less factors of production** such as labour from households to clear out their excess stock, in a process known as **labour shredding**.
- Households see fall in income, fall in consumption expenditure. Process of fall in **income and induced consumption** repeated over many rounds
- Fall in income and **induced consumption gets smaller with each successive rounds as part of fall in income is leaked out** in the form of savings, taxes and imports. Process ends when **cumulative withdrawals equals initial autonomous fall in aggregate demand**.
- This results in new and lower equilibrium level of national income to be achieved, with a **magnified decrease** in national income as compared to initial fall in AD

Circular Flow of Income

- Autonomous increase in AD, triggers the multiplier process, which is based on principle that **one man's spending is another man's income**
- When households save less and spend more (trigger event), withdrawals decrease as savings (outflow to banks) decrease while injections remain constant → **withdrawals become less than injections**
- When autonomous government expenditure occurs, injections become more than withdrawals as government expenditure increase → injections increase while withdrawals remain constant
- Drawdown on stocks and inventories. Firms hire more FOP from households and pay them factor income to replenish their inventories.
- Labour receives wages, land receives rent, capital receives interest and entrepreneurs receive profit.
- Increase in national income, households spend part of national income on induced consumption. This increases income of other households, and results in cycles of spending and re-spending. Each round has less than previous round due to withdrawals.
- Process stops when $W=J$ again, hence spending more and savings less results in a magnified increase in equilibrium national income through the circular flow of income.

Economic growth

Achieve sustained economic growth, both actual and potential growth

Benefits of EG

3% per annum growth in GDP per capita doubles material SOL in 25 years

Actual growth leads to potential growth (due to business confidence ERR, consumer confidence, LR AD)

Decrease Cyclical Unemployment – more G&S demanded, firms hire more employees and replenish inventories

Easier to redistribute income (Tax revenue greater since greater income [progressive tax], corporate tax, and GST)

Costs of EG

Income inequality (Capital accumulation reaps gains of investment, rewards and dividends disproportionately with skilled workers)

- Alienates part of society (NMSOL)
- Disproportionally benefits rich, reduces future consumption and decreases SOL of poor

Negative externalities

- Environmental factors (haze, pollution) [Beijing and Mumbai with PSI levels sometimes above 400 poor visibility and greater chance of health issues, 6 million workers with incurable black lung disease]
- Unsustainable rate of EG due to depletion of resources
- Consumption of oil rise by 1300% over previous century, oil projected to run out by 2050 and coal by 2100.

Overheating of economy: Demand-pull inflation

- Economy approaches full employment at classical range of AS curve
- Lack of spare capacity, scarcity of factor inputs and supply bottlenecks, firms have to pay higher prices for marginal or last unit of land and labour
- Firms pass on part of increased cost of production to consumers to preserve profitability
- GPL rise and inflation rise without RNY increasing

Causes of weak EG

AD factors (4 components)

Lack of fixed capital investment

- Low savings rate
 - o Developing countries
 - o High tax (less disposable income, less ability to save)
 - o Expectations of inflation (may bring forward future purchases for fear of real value of savings eroding)
 - o Social security benefits – discourage people from relying on their savings and reduces savings
 - o All these factors reduce **willingness and ability** for households to save
- Low supply of money keeps interest rates high, discourages investment
- Worn out / obsolete capital not replaced, causing depreciation. Reduction of physical capital, the stock of machinery equipment used to produce goods and services.
- Unable to undergo capital deepening where quantity of capital per worker increases. Productivity of workers decreases

Fall in quantity and quality of natural resources

- Shifts AS curve to the left
- Decrease supply, scarcity of limit resources and supply bottlenecks, increase the cost of unit FOP, increasing unit COP for each unit of good and results in AS curve shifts upwards
- Policies like banning the excessive use of fertilizers and pesticides (which have long run consequences on land) could reduce this problem

Lack of Investment in Human Capital

- Human capital refers to knowledge and skills acquired through education and training

- Quality of labour: Educated, trained, healthy and motivated workforce – workers with higher productivity, since labour is factor input in production of goods and services, resulting in each marginal input of labour producing more G&S. Reduces COP each additional unit of output → AS shift down
- Total productive capacity of workforce, total G&S at full employment increases, AS shift right
- In the long run, AS shifted can improve AD and BOP
- Many developing countries, children work to support families and cannot afford to attend school. Benefits of education only realised in long run – high opportunity cost and real cost of school fees
- Singapore employs foreign labour to help achieve EG

Lack of technological advancement

- Discovery of new knowledge through R&D, such as new production techniques, improvement in design and performance of machines and more efficient transport systems
- Increases output per unit factor input, reducing average cost of producing product (microcomputers and AI)
- New products created, expansion of AS
- However, highly uncertain industry and large investments in R&D may not necessarily see higher rates of EG

Structural rigidities

- EU countries like Spain, Germany, Belgium and France have large and powerful worker unions
- Wage rigidities → if output per worker falls while wages constant, productivity per unit wages decreases and higher cost for a fixed quantity of goods
- High pay and high severance payouts. – cannot remove lazy workers and workers unwilling to learn new skills (workers have no incentive to work hard learn new skills)
- Greece with strong barriers to entry, excessive regulations, partially responsible for Greek Economic crisis of 2009. Singapore, Korea, Japan, easy to set up businesses which increase FDI
- FDI brings in job opportunities for locals, who are also equipped with relevant skills in today's society and can improve long run human capital

Unemployment

Unemployment refers to situation where worker is willing and able, and actively seeking work, but is unable to find a job.

Cyclical unemployment: AD (Unemployment caused by a lower derived demand for labour as demand for goods and services decreases)

- Decrease in AD due to **recession/lower business confidence**. Firms have spare output and surplus stock and inventories.
- Clear of excess stock through **labour shredding**, firms hire less FOPs to cut costs and maintain profits.
- Labour derived demand for goods, demand for labour falls
- **COVID 19 recession: Rise in unemployment in USA up to 14.8%. Some industries up to 39.3%, i.e. aviation and hospitality / US China Trade war / Brexit**
- RNY decrease
- Wages are price rigid, laying off of workers occurs as firms are unable to pay prevailing nominal wages
- Could be caused by **Government debt** (decrease G or increase T and hence C,I)

Structural Unemployment (Unemployment caused by the mismatch of skills between workers and employers)

- Changes in patterns of demand (T&P)
 - o Invention of substitutes or change in tastes and preferences
 - o Could lead to sunset industry, where demand for particular type of good is decreased permanently
 - o **Falling demand for coal led to closure of mines in UK and China**
 - o Workers with no other qualifications, all skills specific to industry
- Foreign competition (**loss of comparative advantage**)
 - o Globalisation, manufacturing jobs move from high-wage developed countries to low-wage developing countries like China, India and Bangladesh as they are willing and able to work for lesser nominal wages. 1 unit of income provides them with greater purchasing power than workers in developed countries → less nominal wages required to maintain QOL.
 - o **Rise of Free Trade Agreements (FTAs) have made it harder to keep up with large corporations who enjoy significant economies of scale.**
 - o **Singapore electronics transformation of 1980s to 1990s as lower-skilled electronics industries were taken over by foreign competition.**
 - o Relocation of manufacturing facilities, **workers with geographical immobility** (and are not willing to work for less) would become unemployed. Other countries with **lower GPL and cost of living**, workers willing to work for lower nominal wages.
- Changes in technology
 - o Methods of production change, workers must upgrade skills
 - o **Newspaper industry/Ebooks**
 - o Firms only offer jobs to workers with relevant skills. Occupational immobility, lack of ability to take up new jobs
- Geographical immobility
 - o Geographical immobility: People resist moving from one area to another due to family and social ties, financial costs involved in moving and cost of living.
 - o **South Wales coal mining decline, unemployment as unwilling to relocate to England**

Frictional unemployment

- Small effect from imperfect information and workers look for job
- Employees do not take up first job offer and employers do not hire first applicant
- Search frictions, takes time for employers and employees to find each other
- Generous unemployment benefits (in EU and US)
 - o Reduces opportunity cost of being unemployed

- Reduces urgency, increases time taken to find a job
- Higher wages and employment benefits for **rational employee undertaking cost-benefit analysis** weight marginal benefit of working (wages) over marginal cost (lost unemployment benefits, more stress, lower NMSOL)
- Less workers choose working and taking up job over remaining unemployed

Consequences

- Standard of Living (HHs)
 - High and persistent unemployment rates → incomes of households decrease since some households do not receive any income
 - HHs have lower purchasing power and SOL as they can afford less goods and services, likely to only spend money on necessities and **forgo many goods and services** they would otherwise have enjoyed
 - Draw onto savings, reduced future PP and SOL
 - Younger members of household unable to delay work in pursuit of education as they drop out of school to lower HH expenditure (school fees) and increase household income by working. Lower literacy rates and long term household income
 - Stress for unemployed who support their families, lower ability for essential services like healthcare. Decreases NMSOL.
 - Exacerbated income inequality, could create socioeconomic class divides
 - Opportunity cost of crime is lower; unhealthy practices such as drugs and alcohol use
- Government budget (Fiscal position)
 - Government budget – difference between tax revenue received from population and government spending
 - High unemployment rate, **pool of tax paying citizens is smaller**, and size of tax revenue generated is smaller. Government expenditure on unemployment benefits like subsidies on healthcare and education and worker retraining schemes increases **as more workers qualify for these benefits**
 - Affects scope of future fiscal policy: Government unable to use these funds on other projects like building infrastructure, schools or improving healthcare system
 - Could also have to use budget to resolve social problems
 - Government may have to go into budget deficit and draw on Government reserves; may need to take loans from other countries, and causing increasing G expenditure to finance loans
- Hysteresis and Macroeconomic performance
 - Workers may lose familiarity with jobs as skills not used for long time
 - Workers may become deskilled and demoralised as they are unable to find a job
 - Loss of skills leads to workers becoming not readily employable
 - Unemployment persists in the economy
 - **Reduction in quality and quantity of resources**, decreases productive capacity and potential growth → future macroeconomic performance

Inflation

Persistent rise in the general price level of goods and services, which is measured through the weighted price of a fixed basket of goods (Consumer Price Index)

Demand pull inflation

- Shift AD curve on the Intermediate/classical range of the AS curve
- Shortages in economy, spending exceeds current production levels
- **Drawdown on current inventories**, firms hire more factors of production to **replenish inventories**
- Factors of production **like labour and raw materials get increasingly scarce**, leads to **supply bottlenecks as price of factor** inputs are upbid
- Each additional unit of output becomes costlier to produce as each additional factor input of land and labour cost more to acquire,
- Firms pass on increases in COP to consumers through **price increases to maintain profitability.**

Example event: **2021 Extensive Fiscal Policy in US has led to inflation/ 2017 EG in trading partners**

Sustained rise in GPL: Expectations of general price level to continue to increase. Households maximise real value of their savings by bringing forward future consumption and reduce precautionary savings, for fear of real value of savings decreasing in future. HH and firms incentivised to spend and invest more now, further increases in C,I and increases in GPL.

Cost-push inflation

- Persistent fall in AS (upwards shift)
- Increase in GPL, since AD downwards sloping, RNY decrease
- At prevailing GPL P₀, spending exceeds current production levels, leading to shortages in economy. GPL increases until shortage eliminated at higher equilibrium price level of P₁.
- **Exhaustion of raw materials: Shortages in oil in 1973, 1978 – rise in COP and large burst of cost-push inflations**
- **Import induced inflation: Weakening of currency**
- **Ageing population: number of workers exiting workforce due to retirement > number of new workers entering workforce. Older workers less productive in jobs requiring manual labour.**
- Profits push inflation: Large firms make bigger profits by increasing price
- Increased GST

Sustained rise in GPL: Wage-Price spiral

- As a result of inflation, workers expect prices to increase further, demand higher nominal wages to protect their purchasing power and SOL by protecting **real wages**
- Labour costs rise, price per unit output rises, COP rises
- Leads to persistent increase in GPL to maintain profitability

Benefits of Low and Stable Inflation

Investment

- Easier to predict potential COP and price from investment
- Greater certainty, firms more able to predict their expected rate of return (ERR) more accurately, or their marginal rate of return from additional units of investment
- More business confidence to undertake investments
- More willing to enter into long-term contracts
- Greater certainty on return in investment, increases inwards FDI and decreases outwards FDI. Improves KFA and BOP.

International competitiveness and BOP

- International competitiveness is the **price competitiveness** and quality of exports, attractiveness in attracting inwards FDI and foreign talent
- Domestic inflation < foreign inflation, domestic price level rises slower as compared to overseas price level
- Improves price competitiveness of exports as price of exports falls relative to price of foreign substitutes.

- X increase, M decrease, improves BOP and stimulates long-run AD.

EG and decreased unemployment

- Households expect prices to rise slowly
- No incentive to hold back purchases, healthy consumption
- Healthy C, increase in I and X-M, increased AD

Protects SOL

- Value of currency erodes slowly
- HHs able to predict inflation rate and take actions to protect their purchasing power against inflation and maintain their SOL
- Put funds into financial instruments that offer nominal interest rate equal to expected inflation rate
- Workers are able to negotiate contracts that ensure their nominal wage keeps up with inflation

Monetary policy (Inflation is easier to tackle than deflation)

- *Central bank can stimulate spending by lowering nominal interest rates below inflation rate*
- *COB < 0, stimulates borrowing*
- *Moderate level of inflation, interest rates are sufficiently above 0 so that they can be lowered to stimulate economy in the case of a recession*

High and unstable inflation

Decreased economic growth

- Since domestic inflation rates are higher than overseas inflation rates, prices of local exports rise faster relative to overseas goods. Leads to loss of CA and erosion of X-M
- Harder for firms to predict their marginal efficiency of investment, expected rate of returns less reliable than if the inflation rate and expected returns were stable → less willing to take risks and undertake investments.
- Minimise holdings of cash, decrease savings for fear of decreased real value of savings, leading to higher interest rates as lower supply and scarcity of loanable funds. Higher cost of borrowing, rational firms conducting cost-benefit analysis have fewer investments have $MEI > COB$, hence reduction in I
- Shoe leather costs – increased speculative activity and opportunity cost of the time and effort people spend trying to counter inflation
- Diversion of resources into **non productive assets**. to provide hedge against inflation, does not benefit economy as a whole → forgone production of G&S, lower productive capacity and potential growth
- Menu costs -- Updating computer systems, changing prices and strategies, hiring consultants
- Productively inefficiency

Income Inequality

- Fixed vs variable income earners.
 - o Nominal income does not increase with inflation. Pensioners and fixed-salaried workers without strong trade union backing experience erosion of real income.
 - o Could result in structural rigidities through greater trade union participation and less long-run economic growth
 - o Producers and businessmen who earn more will benefit due to rising prices; equity holders
 - o Greater disparity in purchasing power and SOL
- Debtors and creditors
 - o Benefits debtors at expense of creditors by **decreasing real burden of debt**
 - o Principal sum received lower in terms of purchasing power, \$1000 loan only worth \$500 if GPL doubled
- Physical asset holders (houses, land) benefit from inflation as price of assets increase with inflation. Financial assets (government bonds, cash) lose out as not adjusted for inflation

Deflation

Sustained decrease in GPL. Cause either by falling demand (bad) or falling COP

Consequences of Deflation

Deflationary spiral (Sustained falls in GPL)

- Households expect prices to fall in future, hold back purchases as PP in future > current PP, decreased consumption
- Firms reluctant to engage in investments
 - o Long term contracts, real value of commitment increases
 - o Purchases of machinery and equipment more risky as potential devaluation
 - o Future prices falling reduces revenue and hence marginal returns on investment
 - o Pessimistic business confidence
- Autonomous AD decrease, reverse multiplier effects: firms see **piling up of stocks and inventories** which signals them to cut back on production, resulting in hiring **less factor of production such as labour**. Households see fall in factor income from firms and fall in consumption expenditure, process of fall in income and induced consumption, until cumulative fall in withdrawals equals initial fall in autonomous aggregate demand
- EG decrease, unemployment increase, further fall in GPL

Increases real burden of debts as real debt amount increases

- Nominal interest rate of debt is fixed → real burden of debt increases as real interest rate rises, which is nominal interest rate – inflation rate
- Borrowers paying more as **value of money rises** during deflation
- More difficult for borrowers to repay debt, reduces consumption
- Disincentivises investments and consumption on big-ticket items as real cost of borrowing increases (reduction in AD)
- Also applies for government debt – real value of governmental debt worsens, which worsens the government's ability to pay off debts. Funds spent on interest of loan payments have greater real value and greater opportunity cost to society in terms of forgone governmental expenditure. Results in higher taxes and decreased spending in the future.

Harder to solve than inflation

- Central bank can raise nominal interest rates higher to combat high inflation
- However, cannot lower nominal interest rates below 0 as this would mean reducing savers' bank balances → prompt mass withdrawals from bank which results in a lack of supply of loanable funds, which makes loans for investment and consumption impossible
- Nominal interest will always be positive, hence real interest rate always positive. -3% deflation rate could result in > 3% real interest rate, deterring spending
- Expansionary exchange rate policy to solve deflation but results in imported inflation and unnecessarily higher prices for consumers

Benefits of deflation

Improvements in economic performance (BOT)

- Could be caused by technological advancements, which reduce cost of production and increases productivity → cause prices to fall
- Domestic goods and services more competitive as price of exports decreases relative to the price of goods and services from overseas. Overseas demand for SG goods increases, rise in exports improves balance of trade
- SGP trade balance makes up large part of AD → increase AD and could result in economic growth

Can eval against this if there is global fall in prices

AT – Not everybody hurt by deflation

- Fall in GPL, increase in purchasing power and ability to consumer more goods and services
- Standard of living improves
- Income inequality: As fixed earners tend to have lower wages (rather than entrepreneurs and equity holders in companies), this can help reduce income inequality

Exchange Rates and BOP

Breakdown of BOP

Current account: BOT, Primary and Secondary income balance

KFA: Direct investment (FDI), Portfolio investment (FPI), Financial derivatives and other investments

Favourable BOP position refers to achieving long-run BOP equilibrium or an avoidance of a large and persistent BOP.

Exchange rate is the price of one country's currency in terms of another currency or a basket of foreign currencies.

Freely floating exchange market rate – market exchange rate determined by interaction of market demand for and supply of a country's currency, with no intervention by central bank. Will always find equilibrium price such that $Q_d = Q_s$.

Changes in demand

- Economic expansion in trading partners → rise in purchasing power → rise in demand for SG's exports → rise in demand for SG currency in forex market. Extent of rise in demand dependent on YED → **more than proportionate rise in demand for singapore exports as largely non-necessities and $YED > 1$** → More than proportionate appreciation of SGD
- Interest rates fall relative to global interest rates → fall in returns to speculative investments in Singapore from perspective of overseas investors → more incentive to invest in speculative investments in other countries due to higher expected returns to investment → Sell more SGD and increasing supply of SGD in forex market (and hence depreciation)
 - o Interest rates rise relative to global interest rates → rise in returns to speculative investments (hot money) in SG from perspective of overseas investors → more incentive to invest in speculative investments in SG due to higher expected returns to investment → Demand more SGD
- Expectations of currency traders, if convinced SGD going to appreciate will sell USD and buy SGD. When SGD appreciate relative to USD, can sell SGD for USD and earn profits.

Change in Supply:

Government print money, SS curve increases. Price in foreign currency decreases as quantity of currency increases and supply of currency increases. Price of foreign goods rise and X-M increases, leading to cost-push and demand-pull inflation.

Fixed exchange rate system

In a fixed exchange rate system, the central bank intervenes in the forex market to control the exchange rate at a fixed rate by using its foreign reserves to influence the demand and supply of its domestic currency.

- Increase in demand for chinese exports → demand for chinese yuan to increase → demand shift from DD1 to DD2. Fix the exchange rate by increasing supply of Yuan in forex market by buying more USD in foreign market. Sells yuan, supply increases from SS1 to SS2. Prevents appreciation.
- Decrease in demand for chinese exports → demand for chinese yuan decreases → demand shift from DD0 to DD1. Fix exchange rate by using foreign currency reserves to buy back SGD in forex market, increasing the demand for SGD and shifting demand back from DD1 to DD0.

Managed float exchange rate system

Equilibrium exchange rates determined in foreign exchange market through interaction of demand and supply and is free to fluctuate within a band, and central bank intervenes to prevent excessive fluctuations in its ER.

Exchange rate stability

Exchange rate stability is the avoidance of excessive fluctuations in the exchange rates.

Positive

Improvement in KFA and improve EG

- Stable atmosphere for foreign investment as foreign investor will always know what his investment's value is
- Does not have to worry about daily fluctuations in ER, which could affect their returns on investment
- Greater certainty for business in planning investments and projection of profits
- More willing to enter into long term contracts without fear of real value of commitment increasing in terms of investor's domestic currency
- Lead to increase in inward FDI (AD + KFA)

Negative

Difficult to maintain in long run

- Keeping value of currency above actual value of currency results in central bank having to spend foreign reserves to buy back domestic currency to keep up demand
- Could no longer maintain because running out of foreign reserves, speculation and panic
- Investors scramble to get money out of currency, waves of currency depreciations
- Asian 1997 financial crisis, Thai Bhat had lost 50% of its value

Opportunity costs of foreign reserves

- Foreign reserves are invested in highly liquid assets such as short term financial bonds and government securities, allowing them to be quickly converted into cash for buying/selling in the forex market to maintain exchange rate stability
- Lower rates of returns as compared to alternative use
- Opportunity cost of funds (can also be used in G to improve M/NM SOL)

Can be inflationary if tries to maintain ER below free market

- In order to maintain external value of currency below the free market ER, central bank has to sell currency and buy more foreign currency
- Injecting liquidity (increasing money supply) into economy. If operating close to full employment, could aggravate inflationary pressures.
- Additionally, could result in imported inflation as imported FOPs cost more in domestic currency

Causes of CA Deficit and Surplus

Changes in RNY

- Changes in global demand due to business cycles
- Sustained Economic growth, increases X
 - o Rise in Y of trading partners
 - o Assuming Singapore's exports are normal goods, YED is positive and likely more than 1 as SG exports are generally non-essentials. Rise in income in trading partners leads to a more than proportionate increase in demand for SG exports, improving BOT
 - o If initial $X > M$, surplus increases, if $X < M$, deficit decreases or becomes a surplus

Structural changes

- Changes in comparative advantage
 - o Countries with lower COL have a comparative advantage, especially for labour-intensive goods. As their COL is lower, purchasing power gained from each unit of income is greater, hence workers are willing and **able to work for lower nominal wages**. As labour is a factor of production for goods and services, countries like Vietnam and China have CA as they can manufacture goods at lower costs.
 - o Global demand for low and medium end and manufactured exports shifted to neighbouring emerging countries as they had more price competitive goods
 - o Lower demand for SG exports, and SG citizens switch to cheaper imports, resulting in worsening of BOT.

- Singapore: New areas of comparative advantage, higher value industries like biomedical and financial services, boosting foreign demand. Increase export revenue to nullify effect of falling exports of low to medium end products
- Changes in T&P
 - Long term **structural changes** to **pattern of demand** for exports
 - Slow to adapt to changing tastes and preferences, demand for exports will be competed away by other countries
 - TV and KPOP shifting T&P from Japan to Korea

Changes in relative inflation rates

Changes in exchange rates

- Appreciation of SGD means more units of foreign currency required to purchase 1 unit of SG currency. SG exports become more expensive in foreign currency. Assuming the PED of SG's exports are > 1 , there will be a more than proportionate decrease in the quantity demanded of SG exports, resulting in a fall in export revenue.
- As less units of SGD needed to purchase 1 unit of foreign currency, imports become cheaper in SGD. Assuming PED of imports > 1 , there will be more than proportionate increase in quantity demanded of imports, and a rise in import revenue
- As long as Marshall-Lerner's Condition holds that sum of PED of exports and imports exceeds 1, there will be a worsening of BOT and thus BOP.

Protectionism

Exchange rate systems and effect on BOP

Freely Float exchange rate

- Balance of payments always in equilibrium because BOP surplus or deficit automatically eliminated via adjustments by the exchange rate mechanism.
- Interest rates in US rise relative to interest rates → short term capital inflow as people deposit money in US for higher returns & US citizens reduce short term overseas investments → reduce supply and increase demand for USD. Shortage of USD, BOP goes into surplus due to KFA surplus.
- Only temporary surplus and rise in interest rates, upwards pressure causes USD to appreciate. Exports more expensive, imports become cheaper. Assuming Marshall-Lerner, BOT worsens as USD appreciate. Adjustment until new eqm at e_1 and **CA deficit cancels out FA surplus.**

Consequences of BOP Deficit (Managed-float system)

Central Bank sells foreign currencies and buys domestic currency to prevent its domestic currency from depreciating.

Central bank running down on foreign reserves

- Countries over-valuing their exchange rate
- Depletion of foreign reserves or increase borrowing and debt
- Compromises country's ability to ward off potential speculative attacks on domestic currency in future.
- Reserves could run out, have to relax control of currency and let it depreciate. Reduce consumer ability to import consumer goods and services and producers ability to import raw materials. (AS shift)
- Could borrow foreign currencies from International Monetary Fund (IMF) but this creates external debt, and wastage of foreign reserves paying of interests

Macroeconomic Performance

- BOP due to fall in export competitiveness and rise in import expenditure → fall in net exports leads to fall in AD and RNY, leading to less actual economic growth
- Local firms get less revenue than they would have had it not been for international trade and fall in demand leads to a surplus of stocks and inventories. Firms may have to cut back on production in order to clear off surplus, leading to laying off of workers through labour shedding as firms hire less factors of production from households. This leads to a rise in cyclical unemployment.

- America's trade deficit seen to have huge impact on unemployment, that for every billion of net exports, the economy loses 9,000 jobs – leading to eventual protectionist policies

AT – BOP Deficit not actually bad

Investment

- BOP deficit could be caused by import of machinery and capital equipment → results in capital deepening and improvement of labour to capital ratio → Labour more productive. Results in both actual and potential economic growth

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- If BOP deficit is caused by rising affluence and purchasing of more imports → could mean that the standard of living is higher

Costs of avoiding BOT deficit may be high as it may require protectionist policy → imposition of tariffs or quotas to protect BOP → higher prices, inflation, reduced investment and could lead to trade wars

Consequences of BOP surplus (Fixed/Managed-Float)

Central Bank buys foreign currencies and sells domestic currency to prevent its domestic currency from appreciating.

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- Forgone opportunity for citizens to consume more imports and increase standard of living. Undervalued exchange rate, imports are relatively more expensive in domestic currency, quantity of imports that households are willing and able to consume decrease, resulting in a lower MSOL.

Protectionism

- Accused of being currency manipulator
- Trade balance improves at expense of worsening of trade partner's trade balance
- Trade balance zero-sum by definition, as one country's imports are another country's exports. Unless countries with persistently large surpluses take action to reduce surplus, deficit countries will not be able to reduce their deficits and may be forced to resort to imposing import controls. Reduce imports and reduce trade deficit, which is detrimental to world trade
- China blamed for unfair trade and currency manipulation by US. CA deficit in US attributed to large imports of cheap Chinese products as 47.2% of US trade deficit to China, and is said to be part of reason for US high unemployment rate. US had trade deficit of \$420 billion in 2018, with 540B in imports but only 120B in exports. Led to US-China trade war that affected global economy from 2018 to 21 and beyond.

Government budget deficit

Government expenditure exceeds government revenue

Consequences

Government borrowing and debt

- May have to borrow to fund expenditure, leading to government debt
- Opportunity cost of debt interest payment → fall in long term government expenditure as government budget redirected to servicing interest payments → Fall in AD as G is part of AD → Depended EG
- If government tries to raise taxes in long run → Fall in C and I
- Intergenerational inequality, future generations will be required to incur higher taxes or lower government expenditure to pay of debts of predecessors
- Lower Investor confidence (concerns of lower EG and possibly higher taxes) and investors less willing to invest in long term contracts without assurance of long term profitability → Reduction in foreign investment, local investors may choose to invest overseas → lead to long run fall in AS
- Eventually, as debt gets large and persistent, no foreign lender willing to lend money to country as there is loss of confidence that country is able to provide full and timely repayment. **Sudden stops in net capital flows trigger current account reversals.** Private consumption, investment and government expenditure curtailed, reducing actual and potential economic growth, reducing governments' future revenue and making future payments even more difficult. Austerity measures may be imposed. Happened in **Greek Financial crisis of 2009-16, unemployment rates rose as high as 27.9%.**

Crowding out effect

- Borrowing leads to increase in **demand for loanable funds** → rise in interest rates
- Crowding out effect leads to private expenditure falls (less willing and able to buy big ticket items because the cost of borrowing would be higher; rational firm undertaking cost-benefit analysis will have fewer investments with marginal efficiency of investment not less than cost of borrowing) → less C and I → Dampens rise in AD and could lead to long run fall in AS

Overheating of the economy

- Running budget deficit increases AD as G is part of AD
- Government competes with private sector for scarce resources, upbid prices and increase in general price level, worsening DD pull inflation

Antithesis

- CA deficits may not be bad if government using to fund imports that finance valuable investment such as building roads and railways that add on to country's capital stock to increase productive capacity and stimulate economic growth. **Philippines "Build Build Build" program.**
- Short term government budget deficit can be financed easily if it brings about future economic growth, or if government has sufficient reserves (past surplus)

Fiscal Policy (Government Expenditure)

Fiscal Policy is the deliberate management of government spending and taxation designed to influence the level of economic activity in order to achieve economic goals of the government.

Direct taxes – Incidence on individual (not easily shifted) – income, wealth, corporate

Indirect taxes – Incidence shared between producers and consumers - Expenditure/ Production of G&S (GST)

GST is a **regressive** tax if imposed on necessities. Necessities take up a large proportion of income of lower-income HH and thus higher % of income will be taken up by tax. Corporate tax (standard 17%) is a **proportional** tax while personal income tax is a **progressive** tax.

Impact of taxes as an EFP

Consumption (i.e. removal of inheritance tax in SG saw more people save and spend more)

- Households have greater after-tax disposable income, greater purchasing power, more W&A to consume and thus greater consumption expenditure
- Households also have greater willingness and ability to save, resulting in greater supply of loanable funds in banks, assuming a freely-floating interest rate, could lead to fall in interest rates

Investments

- As corporate taxes, or a proportion of profits collected by the government, decreases, firms will have greater after-tax profits. As a result their marginal efficiency of investment will increase across all investment projects.
- Rational firm conducting cost-benefit analysis will have greater number of investments with $MEI > COB$ that they are willing to undertake → thus stimulates investment

Impact of taxes as an SSP

Income effect (SSP)

- Increased taxes, cannot afford same amount of leisure and G&S
- Decrease C as **disposable income** decreases
- Work more hours to maintain C and SOL
 - a. **Productive capacity** expands

Resource allocation

- *Tax incentives for local R&D can influence production of various G&S which allos influence of allocation of resources.*
- *Allows for managements of market failures, maximises overall societal welfare, minimises DWL (i.e. tax on demerit goods, tax breaks for merit goods)*
- *Banking industry, high progressive income tax may trigger outflow talent to countries where taxes are lower.*
- *Changes equilibrium output in each of product markets and results in resource movement in and out of industries.*

Government Expenditure

Inclusive Growth

- Healthcare services, educational services, social welfare services, old aid pensions benefit poor
- Together with progressive income tax system where rich have a greater proportion of their income taxed, effect of inequalities and wealth distribution reduced
- Helps the poor ensure they are able to afford basic and merit goods, maximises societal welfare

Economic Growth

- Improvement and extension of transport and communication facilities improve productive efficiency
- Attract productive investments, lead to sustained economic growth
- For example, investment in 5G would allow large technology companies such as Amazon and Google to set up HQ in Singapore for faster network speeds

Multiplier effect due to autonomous G or through the reduction in T (through circular flow)

BOP Deficit

- Contractionary Fiscal Policy
- Decrease AD, RNY decreases, imports decrease (assuming YED of imports > 0), as reduction of imports that HHs are W&A to consume
- Decrease AD, GPL decreases. Exports relatively cheaper to foreign customers
- Quantity of exports demanded increases, export revenue increases (assuming PED > 1)
- Assuming ML conditions – overall BOT position increases.

Limitations:

Size of multiplier and State of the Economy (Fiscal Policy)

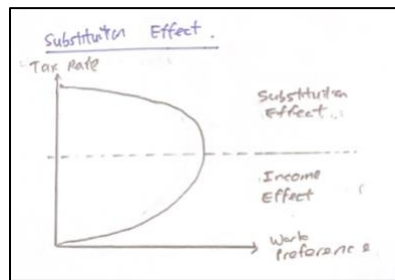
- Singapore – High MPM (about 40% of expenditure go out as imports, APM ≈ MPM) due to small and open economy due to small local market; High MPS due to culture of savings and compulsory government savings (Central Provident Fund, CPF)
- Smaller multiplier → Autonomous increases in AD from government expenditure quickly withdrawn from the circular flow, leading to smaller and fewer cycles of spending and re-spending. Increase in national income is not as significant
- Could also be worsened by **overheating of economy** in developed country. Economy is at or near full employment level, no or little spare capacity, firms competing for **scarce factors of production**, leading to **supply bottlenecks** that raise cost of production for firms. Results in firms passing on higher cost to consumers to remain profitable, rise of general price level, hence where nominal wages might rise but **real wages and purchasing power do not**. This would result in **increase in autonomous spending** not occurring and multiplier not working
 - *Eval: Government has to assess developed and developing country. Developed country with **spare capacity** should prioritise economic growth as it would not risk an overheating economy, developed country should make sure growth is **inclusive and sustainable**.*
- Government needs to pump in greater amount of G into economy to achieve desired increase in RNY
- *Eval: Talk about RediscoverSG vouchers, refer to PPPH (Focused on specific industry that needs help, as well as ensuring MPS)*

Expectations (Taxes)

- **Ricardian Equivalence theory** states that rational HH will have rational expectations (use all available information to make economic decisions forward looking), smooth out consumption over lifetime to maintain SOL
- Current tax cuts temporary measures, **expect future rates to increase** to maintain relatively neutral fiscal position
- Increase **precautionary savings** as **uncertain about future disposable income** and want to hedge against potential fall in standard of living.

Substitution effect (Taxes)

- Higher taxes, hour's work buys less consumption
- **Smaller sacrifice from consumer when chooses to forgo** 1 unit of time of work in exchange for leisure. Perverse incentive.
- Works less
- *Likely to dominate in countries with fewer financial commitments (children, rent, elderly dependents etc.)*
- If used to stimulate productive capacity as SSP:



Time Lag (Government Spending)

- Fiscal policy is a process, involving recognition of problem, administration of fiscal policy, operational lag (i.e. multiplier effect)
- Especially administrative lag, could involve having to debate budget, wait for multiple layers of checks and balances
- Operational lag: tax changes only take effect at end of calendar year (12 mo delay)
- **Eval: Could also be difficult in Eurozone countries with high public-sector debt, or in developing countries where degree of necessity (marginal benefit per unit of spending) of building basic needs like education and healthcare outweigh infrastructure and EG**

Tax incentive wars

- Competition between countries for foreign investment and talent
- Could require political stability and conducive business environment
 - Transparency in regulations, ease and availability of credits, protection of intellectual property rights)
- Tax cuts could be insufficient in some countries

Non-Discretionary Fiscal Policy/Automatic Stabilisers

Automatic stabilisers are **counter-cyclical measures** put in place to smooth out business cycle and prevent excessive fluctuations in the rate of economic growth, without any deliberate governmental action after the measures are put in place. They are not subject to time lags and will act immediately.

Progressive Income Tax Structures:

- Progressive tax structure is a tax structure where the marginal tax rate increases as the income increases, for each additional unit of income the amount of tax paid increases more than proportionally
- In times of economic growth, income levels are rising rapidly, more households move into higher tax brackets and now have to pay a higher percentage of income on personal income tax.
- Progressive corporate tax could also mean businesses who have higher profit levels have to pay a higher percentage of their profits in corporate tax
- Tax payments increases at a faster rate than rise in income, which serves to **slow down the rise in disposable income** which slows down rise in consumption and AD.

Unemployment Compensation

- Unemployment benefits are payments from governments to unemployed persons to ensure a basic standard of living.
- In times of economic boom, production levels are rising and more workers will be required as factors of production as labour is a derived demand for output, which reduces unemployment levels
- This automatically means that less unemployment benefits are paid out resulting in a fall in government expenditure in the form of transfer payments, which slows down the rise in disposable income and household consumption rises at slower rate. This is especially prevalent as much of the governmental expenditure on transfer payments will be quickly re-injected into the circular flow of income.

With unemployment benefits decreasing and tax revenue increasing during an economic boom, the rise in AD would be dampened. Instead of increasing from AD0 to AD2, it will only increase from AD0 to AD1, which ensures that income rises at slower rate from Y0 to Y1. Automatic stabilisers reduce pressure on general price level and keep inflation in check, which stabilise the economy experiencing high economic growth and reducing volatility.

Interest Rate Policy

Expansionary monetary policy

Consumption

- Lowers cost of financing loan, lowers COB → HH more likely to borrow to purchase big-ticket items or consumer durables such as cars, furniture, washing machine.
- Less incentivised to save as rewards from savings (opp cost of consumption) is lower (Reduce savings and increase C)

Investments

- Rational firms doing C-B analysis will have more investments where $MEI > COB$ due to lower COB, increase in investment expenditure

Balance of trade

- Interest rate falls **relative to other countries**. Outflow of hot money from country in search for higher interest rates. Increases **supply of country's currency in FOREX market**. Assuming no fixed exchange rate, **depreciation** on country's currency
- Exports more **price competitive** in international market, increase in exports and decrease in imports (due to foreign goods being more expensive, switch to local substitutes).

AD

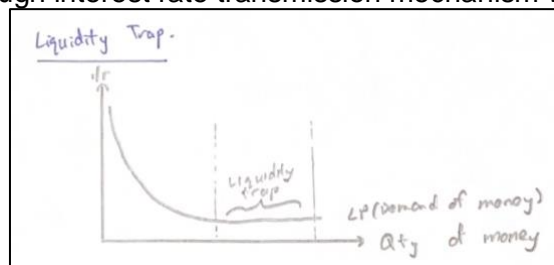
- Increased AD
- Autonomous increase in spending, mtp increase in equilibrium RNY due to multiplier effect if the country has sufficient spare capacity

Limitations:

State/Nature of the economy

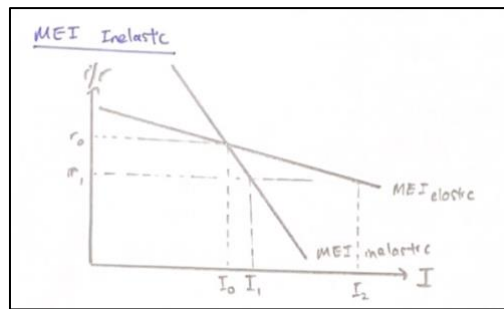
Liquidity trap (Interest Rate Policy)

- Very low interest rates, demand for money becomes **perfectly interest elastic** → unable to effectively affect interest rate by changing demand and supply of money
- Liquidity trap, increase in supply of money from MS_0 to MS_1 will not have any effect on the rate of interest since **nominal interest rates cannot fall below zero** as it would lead to the nominal value of savings being eroded and people would withdraw money from banks
- Monetary policy through interest rate transmission mechanism will be ineffective.



Interest Elasticity of Demand for Investment (Interest Rate Policy)

- Demand for investment can be interest inelastic in the Keynesian framework, less than proportionate increase in investment to change in interest rate
- Large proportion of economy's investments funded by FDI (i.e. small or developing countries)
- Foreign MNCs have **own sources of funding and may not borrow from local banks**. Fall in host country's interest rate may have little bearing on the foreign MNC's decisions to bring funds into host country for investment
- Firms have **poor economic outlook** and uncertainty about future profitability → unlikely to expand production facilities and purchase more machines despite lower cost of borrowing.
- Some firms could also relocate to other regions (globalised world)
- Significant reduction in i/r necessary to stimulate investment



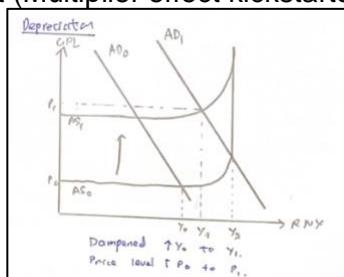
Unintended Consequences

- Cutting interest rates allow firms to acquire more capital assets
- May worsen unemployment through structural unemployment
- Inflation
 - Cost push inflation as a result of depreciation and hence imported inflation
 - Demand pull inflation for prolonged stimulation of economy

Exchange Rate Policy

Depreciation

- Imported FOPs more expensive, AS curve shifts upwards as price of raw materials increases
- Assuming that the PED of foreign imports is more than 1, the rise in prices of foreign imports will be accompanied by a more than proportional fall in quantity demanded and hence fall in import revenue
- Assuming the PED of local exports is more than 1, the fall in prices of local exports will be accompanied by a more than proportional rise in quantity demanded and hence rise in export revenue
- X-M improves, since BOT is part of BOP, BOP position improves
- X-M improves, AD shifts right (Multiplier effect kickstarted by autonomous increase in X-M)



- Dampened increase in RNY, decrease in unemployment, increased GPL

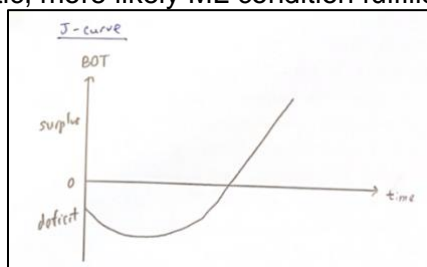
J-curve effect

Short run, price elasticities of demand for exports and imports low, ML condition may not be satisfied in initial period

- Consumers take time to change consumption pattern and preference from imported goods to domestically produced substitutes
- Time to find substitutes
- Producers may have to fulfill terms of prevailing contracts with respect to volume and price of imports and exports

Long run, more likely ML condition fulfilled

- Changes in consumption pattern take place and substitutes can be found
- Contracts binding importers and exporters expire
- Demand less price inelastic, more likely ML condition fulfilled



Conflicts

Depreciation

- Cost-push inflation from rising cost of imported FOPs
- Wage-price spiral and inflation
- Dampens increase in AD

Could affect MSOL

- Price of imported goods or people going on holiday(i.e. luxury goods) increases
- Students going overseas, work trips higher cost of living overseas in local currency

Appreciation (to relieve inflation)

- Local exports cost more in foreign currency, decrease in exports and corresponding increase in imports (people changing to foreign alternatives)
- Fall in X-M, Fall in AD
- CA and BOP worsens
- Output loss and higher cyclical unemployment

Low and stable appreciation – can **gain export competitiveness** while **minimising wage-price spiral**.

Singapore – value against trade-weighted basket of foreign exchange rate. Allowed to fluctuate within an undisclosed band, no intervention within the range.

Dutch Disease Effect -- Appreciation

Harms some sectors: Dutch disease effect

- Decline in Netherland's manufacturing sector as result of booming exports of natural gas when natural gas discovered in North Sea. Allowed Netherlands to turn BOP into surplus due to increased export revenues. BOP surplus led to appreciation of Dutch currency, Dutch exports more expensive and less price competitive.
- Results in inequitable growth and structural unemployment

Singapore's MP: Exchange Rate and not Interest Rate

Interest Rate Price Taker

If Singapore's interest rate higher than world interest rate,

- Higher **returns on speculative investment** in Singapore
- Hot money inflows, increasing domestic money supply (Depositors/HHs choose to place funds in higher i/r Singapore)
- Surplus of domestic money supply, downwards pressure on **interest rates**
- Interest rate decreases back to world interest rates, equilibrium level of i/r at world i/r

If Singapore's interest rate higher than world interest rate,

- Hot money outflow (Depositors/HHs choose to place funds in higher i/r countries overseas)
- SGD currency in forex market as depositors sell local currency. Surplus of SGD in forex, **downward pressure on exchange rate**. SGD depreciates
- As MAS can use foreign reserves to purchase SGD, eventually foreign reserves depleted and SGD depreciates (cannot sustain i/r)
- If $SD\ i/r < world\ i/r$, lose control of x/r

SG interest rate price taker, known as **open economy trilemma**

Applicable for resolving imported inflation

SG has large foreign sector, susceptible to imported inflation

x/r policy – **gradual and modest appreciation of SGD**

Demand-pull inflation

- Appreciate SGD – need more units of foreign currency to buy 1 unit of SGD
- P_x in foreign currency increase, mtp decrease in Q_{dx} assuming $PED_x > 1$
- P_m in SGD currency decrease, mtp increase in Q_{dx} assuming $PED_m > 1$
- X_{rev} decrease, M_{rev} increases. $X-M$ decreases. Since $X-M$ part of AD , AD decreases
- Gradually relieves demand-pull inflation and AD shifts leftwards.

Cost-push inflation

- Need less SGD to purchase 1 unit of foreign currency
- Imported FOP (oil from Saudi Arabia, timber and food from Malaysia – raw materials, textiles – intermediate goods)
- Decreased COP esp if firms use imported FOPs since no natural resource and many imported
- Decrease COP significantly
- Firms profits increase, **W&A to produce output at lower prices**, pass on cost savings to HH and decreases GPL
- Relieves cost-push inflation and AS shifts downwards

Movement away from full employment level

Increase in spare capacity and decrease overheating of economy

Less intense competition for scarce FOP, prices of FOP decrease and COP decreases

Cost savings passed on to HH, GPL decreases.

(Graph)

Avoids imported inflation

High dependence on external sectors

SG small domestic market due to small population

Assuming SG lowers interest rate to stimulate C and I to increase RNY ,

- Interest rate decreases, lowers COB, increases big ticket items
- Save less, spend more as returns on savings are lower (opp cost of consumption)
- $MEI > COB = i/r$, i/r decrease means more projects undertaken as satisfy criteria of profitability.

However increase in C and I do not increase AD significantly

- Heavily reliant on FDI, may not make investment decision based on SG interest rate as they would have other sources of capital (like overseas banks)
- C and domestic I make up small percentage of AD , do not increase AD significantly
- AD does not increase significantly, desired expansionary effect insignificant
- Interest rates not as effective in managing AD

Low and stable appreciation

- Relieves inflationary pressures and keeps exports price competitive in the long run
- Sustained economic growth
 - o Confidence in currency increased, expected profitability from investments tend to rise over time
 - o Modest and gradual appreciation → price stability, greater certainty for business in planning investments and projection of profits
 - o Autonomous increase in investment (FDI) → multiplier effect → magnified increase in economic growth
 - o Capital stock accumulation, increases productive capacity as maximum amount of goods and services produced rise. Foreign firms bring employment opportunities (reduce unemployment) for Singaporeans → improve worker's productivity and reduces cost per unit output (productive capacity)
- Price Stability: Achieving low and stable rate of inflation through gradual appreciation of value of exchange rate
 - o Able to relieve inflationary pressures
 - o Demand-pull inflation
 - Appreciate SGD – need more units of foreign currency to buy 1 unit of SGD
 - P_x in foreign currency increase, mtp decrease in Q_{dx} assuming $PED_x > 1$
 - P_m in SGD currency decrease, mtp increase in Q_{dx} assuming $PED_m > 1$
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 - Decreased COP esp if firms use imported FOPs since no natural resource and many imported
 - Decrease COP significantly
 - Firms profits increase, **W&A to produce output at lower prices**, pass on cost savings to HH and decreases GPL
 - Relieves cost-push inflation and AS shifts downwards
- AT: Appreciation could result in adverse effects on RNY and higher unemployment levels if MLC holds

Supply Side Policies

Market oriented SSP

Privatisation

- Sale of public enterprises to private sector
- Discipline of free market provides better incentive for businesses to be run efficiently than government employees with little stake in business (since they are not the one taking risks)
- Firm has to survive on its own while subjected to competitive pressure, **incentive to cut costs** in order to be profitable and survive the competition
- **Unit cost of production falls** and downward shift of AS curve
- Break-up of state monopolies and create more competition
- 1 November 2018 – Open electricity market extended to all Singaporeans to reduce monopoly of Singapore Power (SP) group. Gives households and businesses **ability to exercise their choice** at competitive prices.
- Firms have to have competitive pricing or risk being undercut by competitors and losing their market share
- Potential Problem: Replace public sector monopoly with private sector monopoly. Could potentially result in decrease in investment and large scale unemployment as businesses seek to cut their operating costs.

Pro-Competition Policies

- Tougher competition policy regime includes policies designed to **curb anti-competitive practices** such as **price-fixing** cartels and other abuses of dominant positions
- Reduces market power of large firms to raise prices and encourages competing firms to be more efficient.
- 2004 Competition Act, companies in Singapore may be prevented from merging if move substantially lessens competition or distorts it
 - o 2018, Grab and Uber were fined a combined \$13 Million for attempting a merger that would see Grab purchase Uber's local business and obtain a monopolistic share of ride-hailing business.
 - o Competition from new companies like Gojek ensures competitive pricing
- **Deregulation**, opening up of markets to greater competition. Remove **barriers to entry to new firms** by lifting legal restrictions to entry such as patents. Encourage **greater level of entrepreneurship**, which could lead to more firms being set up. Inject more competition into industry and bring new technology and methods of production to increase productivity and boost productive capacity.
 - o Government helps SMEs through **statutory boards and trade associations and chambers (TACs)**. For example, SPRING offers **tax incentives and grants** for productivity improvement expenses.
 - o Jointly offer loans with local banks under **Local Enterprise Financing Scheme**.
- Forces incumbent firms to become more efficient
- **Freer trade between nations** – competition with imports creates competition for domestic producers and **incentivise domestic producers to cut costs and lower prices**.
- Potential Problem: LR could be re-concentration of market as uncompetitive firms incur losses and leave industry. Larger firms gain at expense of small firms

Labour Markets – Reduce power of labour unions

- Barrier to free working of labour market as unions **push wage above market equilibrium** and are disruptive in terms of going on strike
 - o France 171 days not worked per 1000 employees in a 5-year window → Affects **productive capacity** as days spent on strike are **lost potential production**
- Labour unions also make it harder for firms to fire unproductive workers → workers have no incentive to work hard as their income is guaranteed regardless of their work ethic → lost potential productivity.
- Firms would face lower labour costs and prices will fall. Wage-push inflation reduces.
- Singapore – partnerships between trade unions and employers improve productivity and improve flexibility of workers in jobs.
 - o Flexible wages – wage increases in line with national productivity growth
 - o Annual wage supplement (13th month payment) and bonuses allow firms to vary **annual wages of employees**

- Monthly Variable Component introduced to allow wages to vary from month to month

Cuts in welfare benefits

- Overly comprehensive unemployment compensation or benefits and welfare programmes **reduce the incentive for unemployed labour to re-join the workforce and become economically active again**
- Worsens cyclical unemployment, as workers need significantly better terms from job offers for it to be make up for opp cost of work, unlikely to accept first job offer
- Could be especially true for structural unemployment, as the unemployed would be required to go through training to increase their employability
- Cutting programmes -> increases **willingness of unemployed of these people to work and accept jobs at lower wages**
- Problem: Inequity, unpopular

Interventionist SSP

Direct government intervention in markets.

Free market fails to achieve certain desirable outcomes such as low employment rate, incentive for education and training and investment and R&D.

Education and Training: Targest the **Development of human capital**

- Incentivise workers to **upgrade their skills and professional competencies**
- Workers become more **skilled and efficient** in their assigned responsibilities, ability to **work with machines to enhance productivity**
- Quality of workforce improves, productive capacity will expand and shift AS curve to the right. Labour productivity growth outpaces wage growth, unit cost of labour decreases and AS curve shifts downwards. COP decreases, combats inflation and lowers GPL.
- Doubles as Fiscal Policy due to government expenditure (G), such as through expenditure hiring firms to conduct skills retraining. Lower unit labour cost and well-educated workforce acts as **magnet for foreign investment** in economy. Improves BOP through KFA and stimulates economy through AD. Increased investment also can improve productive capacity in the long run.
- Wages of low-skilled workers grow faster than high skilled workers, **smaller wage gap**. This reduces income inequality and promotes **inclusive economic growth**.
- Continuity Education and Training (CET) 2020 masterplan – Developed by Singapore workforce development agency (WDA), Singaporeans and PRs enjoy 90% funding support for training programmes. Offer high quality and industry-relevant courses.
- SkillsFuture (2015), Singaporeans aged 25 and above given \$500 in credit to be spent on registered training and upgrading course.
- *Eval: Government can refine policy to ensure **cost-effectiveness**, for example by debursing subsidies in accordance with attendance and having methods to assess effectiveness of trainers to make them accountable.*

Limitation - Receptivity

- Effectiveness of skills upgrading largely depends on **mindset and receptivity of workers**
- Largely lowly-skilled workers may have difficulty trying to learn new skills as they may not have sufficient aptitude
- Ageing population: especially for low-skilled and older workers who may not actively sign up for retraining and skill upgrading due to **steep learning curve**. Cost-Benefit analysis of rational worker, cost (time, lost income, fees) against potential benefits. Fewer working years left, less potential earnings and less likely to undergo skills upgrading.
- (EU/US) Trade unions – workers have generous employment benefits and no risk of being fired by companies → no **incentive to undergo skills upgrading**.

Limitation – Opportunity Cost

- High risk of identifying wrong sunrise industry
- High explicit cost of funding and implicit cost (time of training)

Grants for R&D

- Innovative activities undertaken by corporations of governments to develop new products.
- Biggest barriers to innovation are **risk aversion**, uncertainty about outcome of R&D and lack of skilled workers.
- R&D may be **privately unprofitable for a firm** despite being **economically desirable to society**. Successful R&D efforts leading to technological breakthroughs help raise productivity in the economy and lower unit costs of production.
- Government may sponsor R&D in certain industries like aerospace or life sciences to spur more R&D efforts in those industries.
- 2016 Research Innovation Enterprise 2020 (RIE) plan with \$19 Billion commitment to support R&D efforts over next 4 years. Co-funding projects such as manpower, training, consultancy and software. Sustains R&D Spending at about 1-2% of GDP, similar to other research-intensive countries like US.

Limitation: High risk

- Projects that claim to be developing breakthrough or revolutionary technology get quick approval but results of R&D not guaranteed. R&D efforts with governmental support could still yield little results and long gestation periods.

Limitation: Moral Hazard

- Less stringent checks to ensure returns on R&D as full cost of the R&D not borne by private firm
- Less incentive for firms to weed out projects that may not seem to have much potential
- Overconsumption, deadweight loss and inefficient allocation of governmental resources

Antithesis

Low confidence (*Expansionary Fiscal and Interest Rate Policy*)

Poor consumer sentiments due to prolonged recession (C)

- Expects downturn to worsen
- Will not borrow and take on debt despite low interest rates
- No increased consumption

Risk and uncertainty, business confidence poor (I)

- Difficult to do **cost-benefit analysis** to **predict future expected rate of return** as firms are **uncertain about future economic outlook**
- Rational firm only invests if they are confident that expected rate of return is greater than the cost of borrowing and that it is worth investing in country
- Withhold/Delay investment, or take investments elsewhere
- Increase in investment does not happen, increase in AD does not happen
- **India tax cuts but still requires infrastructure and confidence**

Contractionary Policies – Irrational Exuberance (I) (overvalued investment due to high confidence, even if contractionary policy reduction may not occur)

Conflicts Between Macroeconomic Goals

Actual economic growth and Demand-pull inflation

- Economic growth is achieved through stimulation of the AD. For example, consider fiscal policy, reduction in personal income tax results in increased disposable income and purchasing power, hence increases in consumption; reduction in corporate tax gives firms greater expectations of returns after tax and thus a greater marginal efficiency of investment, hence increases in investment expenditure; government expenditure on infrastructure projects and building public transports; Since G,C,I are part of AD there is AD stimulus, and through the multiplier effect, results in a magnified increase in national income.
- However, if FP or MP is too aggressive, such as increasing government expenditure by too much or by keeping interest rates too long, demand pull inflation could occur. This is especially true due to the time lags of fiscal policies, as policies like tax changes or changes to government budget require large amount of time being debated through layers of the government. Thus, it takes time to take effect, and economy may already be recovering.
- If increase in AD occurs at or near full employment levels, firms have a lack of spare capacity and supply bottlenecks as firms compete for scarce factors of production and upbid prices. Prices of factors of production increase, raising cost of production, overheating the economy. Firms pass on cost increases to consumers to remain profitable, resulting in demand-pull inflation.

Potential economic growth vs structural unemployment

- Potential growth through Research and Development and automation. For example, firms can tap on funds and subsidies provided by enterprise SG when conducting R&D, such as the 2016 Research Innovation Enterprise (RIE) plan to commit \$19B to support R&D efforts over the next 4 years, or 400% tax breaks up to \$400,000 for businesses to conduct research through the IRAS Productivity and Innovation Credit Scheme (PIC).
- Automation reduces human error and encourages firms to substitute their labour with capital, resulting in capital deepening, or an decrease of human to machinery ratio. This results in quality of resources increasing and potential growth by increasing the productive capacity.
- However, it also results in structural unemployment as workers of manual labour are replaced by automation, and their skills become obsolete in the economic environment with prevalent automation. This results in structural unemployment due to the mismatch of skills these workers have to offer and what employers are looking for.

BOP deficit vs Cost-push inflation (Depreciation)

- In order to resolve a BOP deficit, depreciation might be used as a policy. This results in less units for foreign currency required for 1 unit of SGD, P of SG exports decreases in foreign currency. Assuming PED of exports is > 1 , quantity demanded of exports increases more than proportionally and export revenue increases. More SGD is required for 1 unit of foreign currency, increase in price of imports in SGD, more than proportionate decrease in quantity demanded if PED of imports is > 1 . As such, balance of trade position improves and this improves the balance of payments position through the current account.
- However, as more SGD is required to buy 1 unit of foreign currency, price of imported factors of production like oil, raw materials and capital machinery increases, resulting in rise in cost of production. This is especially prevalent in Singapore, where imported FOPs make up large part of economy (X+M 319%). Minimum price that producers are willing and able to produce at increases, horizontal AS curve shifts up. As firms pass on cost increases to remain profitable, GPL increases and cost-push inflation occurs.

Other conflicts

EG vs BOP (Through increase in induced imports)

Income inequality vs EG (increased taxes)

Minimum wage vs unemployment