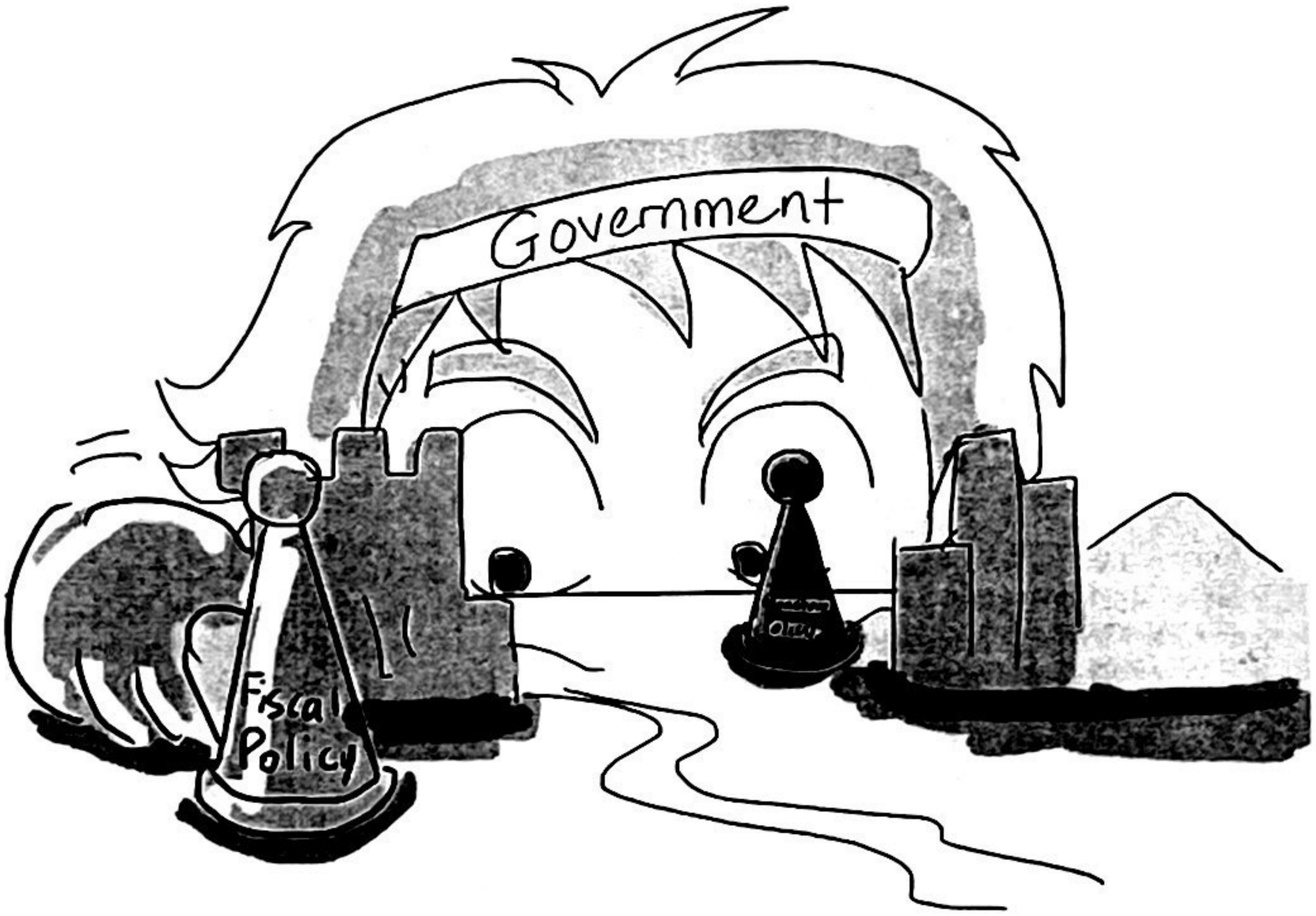
The National and International Economy II:
Part (b) Macroeconomic Policies



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HWA CHONG INSTITUTION
Year Two H2 Economics 2023
Chapter #7: The National and International Economy (II)
Part (b) Macroeconomic Policies

SYLLABUS CONTENT

3.2 Macroeconomic Aims and Policies

3.2.3 Macroeconomic policies to achieve macroeconomic aims

a) Policy measures and their effectiveness influencing AD/AS
   - Fiscal policy
     - Government expenditure and revenue
   - Monetary policy
     - Centred on interest rates
     - Centred on exchange rates (case of Singapore)
   - Supply-side policies
     - Policies to improve quantity, quality and mobility of factors of production
     - Policies to increase efficiency and remove barriers to competition and trade in product markets
     - Policies to give incentives and encourage enterprise

DECISION-MAKING PROCESS BY THE GOVERNMENT

A government will need to decide on the macroeconomic aims it wishes to focus on, and thereafter, decide on the policies that it deems can best achieve its chosen aim with all possible trade-offs considered.

- First, the government will need to decide which macroeconomic aim it wishes to focus on during a period of time. To make this decision, the government of a country will need to gather a broad range of **data** regarding the current state of the economy. By gathering data trends on variables such as the GDP and CPI, the government will be able to form a better picture of the current state of the economy and its accompanying trends in the past. The government can then use this information to help it decide on which aim to focus on. For example, in years of poor growth and low inflation, the government may decide to put greater weight on achieving growth.

- In addition, knowledge of how different aims are related to each other would be useful to gauge the **benefits and costs** involved in choosing to focus on the achievement of a particular macroeconomic objective over the others. For example, while achieving some aims can simultaneously fulfill other aims (for instance, attaining actual economic growth can lead to a reduction in demand-deficient unemployment), in times of high inflation, aiming for higher growth using aggregate demand management may exacerbate the problem of rising prices.

- The government should also note that achieving the aim of economic growth or inflation may not have a consistent effect across all groups in its population. It is therefore very important for the government to gather **perspectives** from different groups of its population when determining the aim to focus on. For example, the benefits of economic growth may not be evenly spread out across all groups, and increases in income may be skewed only towards high-income group. Such perspective-taking may motivate the government to embark on a slightly modified aim of inclusive growth, instead of only being interested in growth in the broad measure of real GDP.

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- Once the government decides on the macroeconomic aim it wishes to focus on, further decision-making must be undertaken to **select a suitable policy** to achieve its aim. For example, should the government wish to focus on inclusive growth as its macroeconomic objective, there will be several policy options available to it. One such option that the government can explore would be setting up a skills-upgrading programme to retrain current low-skilled workers in the economy. Similarly to the other decision-making processes mentioned earlier, the government will need to embark on a detailed study of the **benefits and costs** associated with such a strategy. It will also need to be cognisant of the **constraints** it faces. Some of the government's constrains include: the amount of revenue available, amount of reserves it currently holds, amount of government debt incurred from previous cycles of budget deficits, and budgetary policy of the government (i.e. how willing it is to run a budget deficit to fund essential progamme).

- In order to get a good estimate of the **marginal benefits** of intervention, the government must **gather information** from different industrial sectors on the potential for job-retraining in the various industries, and tap on information regarding the contribution of the affected industries to the economy's GDP. To measure the degree to which such programme will reduce income inequality, the government must take the **perspective** of the affected workers and possibly consult them to get a good sense of the take-up rate of such a programme.

- To measure the **marginal costs** of intervention, the government will also need to gather information from the **perspectives of different economic agents**. This would include the perspective of producers, who would be able to give an estimate of the amount of money required to fund job-retraining for different industries. The government may also need to take the perspective of high-wage earners should they choose to fund such a programme with an accompanying increase in income tax rates. Providing funds for such programme may necessitate the diversion of funds from other potential projects that can promote inclusive growth if the government wants to maintain a balanced budget. Therefore, the government will need to include **opportunity cost** of the use of funds in this manner in its computation of marginal costs.

- Should the government choose to enact such a programme, it will have to evaluate the **outcomes** of the job-retraining programme over the next few years. These outcomes can exist in both the short run and long run, and in both the local and international economy. In the short run, if firms are made to bear some of the costs of the job retraining scheme, and with workers taking them off from their work for training, there might be a decrease in productivity for the affected industry. This might have repercussions on the industry's international competitiveness and lead to a fall in the country's export revenue if the industry is an important export sector. However, in the long run, the programme might lead to a rise in export revenue should gains in productivity from the job-training be realised. If the government was thorough in its considerations of benefits and costs before enacting the programme, these outcomes are likely to be **expected consequences**. On the flipside, the degree of loss or gain of competitiveness in the industry may be under or over-estimated due to imperfect information, resulting in the industry gaining or losing more in the international market than was intended. Such **unintended consequences** especially if serious enough for an important industry to lose its comparative advantage, may require the government to restart its decision-making process for such job-retraining programme sooner rather than later.

- Another reason for the government to **reassess its programme and repeat the decision making process would be if changes in economic conditions** occur, such as the reactions of international competitors to the government's productivity push in a particular sector, or changes in the retraining costs due to technological changes in the affected industry.

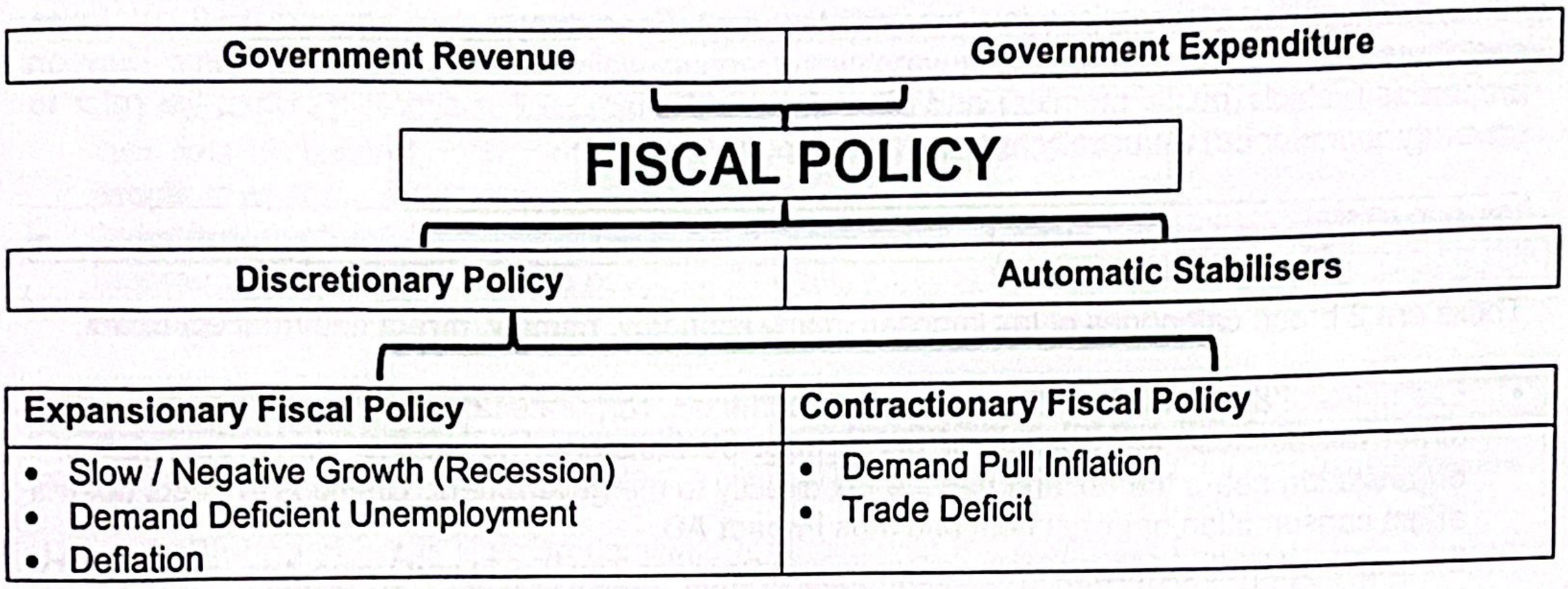
As illustrated, the decision-making process by the government in the macro-economy is often multifaceted and complex.

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PART 1: Public Finance and Fiscal Policy

Conceptual Outline



SECTION OUTLINE

7.1.1 GOVERNMENT REVENUE
- 7.1.1.1 Types of Taxation
- 7.1.1.2 Structure of Taxation
- 7.1.1.3 Microeconomic and Macroeconomic Impacts of Taxation

7.1.2 GOVERNMENT EXPENDITURE
- 7.1.2.1 Types of Government Expenditure
- 7.1.2.2 Microeconomic and Macroeconomic Impacts of Government Expenditure

7.1.3 FISCAL POLICY
- 7.1.3.1 Discretionary Fiscal Policy
  - 7.1.3.1.1 Expansionary Fiscal Policy
  - 7.1.3.1.2 Contractionary Fiscal Policy
  - 7.1.3.1.3 Expenditure Reducing Policy to Correct a Trade Deficit
- 7.1.3.2 Automatic Stabilisers
  - 7.1.3.2.1 How Automatic Stabilisers Work
  - 7.1.3.2.2 Limitations and Trade-offs of Automatic Stabilisers

7.1.4 AUSTERITY MEASURES
- 7.1.4.1 Background and Objectives
- 7.1.4.2 Unintended Consequences

Appendices
References

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7.1.1 GOVERNMENT REVENUE

The main contribution to most government revenue comes from taxation (e.g. corporate tax, personal income tax, goods and services tax, property tax, etc.). For example, in Singapore, in 2019, taxes contributed to around 83% of the government revenue while the rest are from stamp duty on properties, vehicle quota premium and other fees and charges. For simplicity, when we refer to government revenue, we usually refer to tax revenue.

7.1.1.1 Types of Taxation

There are 2 broad categories of tax imposed in any economy, namely, **direct** and **indirect taxes**.

- Examples of **direct taxes** include personal income tax, corporate tax, and property tax. It is called direct tax because the **burden of tax cannot** be transferred to another party. The person / organization bears the tax and pay the tax directly to the government. Changes in direct tax will affect consumption or investment and thus **impact AD**.
- Examples of **indirect taxes** include Goods and Services Tax (GST) and Value-Added Tax (VAT). It is called indirect tax because the **burden of tax can** be transferred to another party. Changes in indirect tax will affect average cost of production and thus **impact the AS**.

7.1.1.2 Structure of Taxation

- Most taxes are progressive or regressive in structure.
- **Progressive taxes** (e.g. personal income tax, corporate tax, and property tax) take up an **increasing** proportion of income as income rises while **regressive taxes** (e.g. GST and 'sin' taxes) take up a **decreasing** proportion of income as income rises.
- To mitigate the income and wealth inequality that naturally arises from the workings of the free market, **progressive taxes** are often used to achieve more **equitable** outcomes.
- However, governments sometimes also impose taxes which are regressive due to the need to deter production or consumption (e.g. tobacco and alcohol taxes) or because of their ability to generate large and stable tax revenues (e.g. GST).
- *For more information on progressive or regressive taxes, please refer to Appendix 1.*

7.1.1.3 Microeconomic and Macroeconomic Impacts of Taxation

MICROECONOMIC IMPACT:

(a) Impact on Resource Allocation (Efficiency)

Indirect taxes alter prices and hence resource allocation as resources will be diverted from the sectors which are more heavily taxed to sectors which are less heavily taxed. For example, taxes on specific goods or services will **shift consumer choice** and output in favour of the untaxed goods. Indirect taxes can also be used to **alter production methods** and address market failure from negative production externalities, e.g. taxing the pollution or more polluting production methods will encourage firms to adopt less polluting production methods.

(b) Impact on Income and Wealth Distribution (Equity)

As **direct taxes** such as personal income and corporate taxes tend to be **progressive** while **indirect taxes such** as GST tend to be **regressive,** a greater reliance on direct taxes tend to generate more **equitable** outcomes as compared to a greater reliance on indirect taxes. However, due to increasing global competition for talent and investments, many countries have been reducing direct taxes and raising indirect taxes to make up for the loss in revenue.

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(c) Work effort

The imposition of taxes produces 2 effects on work effort: the income and substitution effect.

- **Income effect:** With higher **personal income taxes, disposable income** which refers to the *income households have available to spend or save after paying income taxes and receiving transfer payments such as unemployment benefits*, falls and people cannot afford to consume the same amount of goods and services as before. People may work more in an attempt to maintain their existing level of consumption. Higher personal income taxes may thus encourage some people to work more.
- **Substitution effect:** With higher **personal income taxes**, an hour's work earns less **disposable income** than before, thus some people will be more willing to forgo that income in exchange for more leisure time.

The **income effect** is likely to outweigh the substitution effect for people who want to maintain their current standard of living or for people with long-term commitments, for e.g. those with families, with mortgages and other debts. Such people are likely to work more to maintain their disposable income.

The **substitution effect** is likely to dominate for those with few commitments, for e.g. singles and dual-income earners in families where that second income is not relied upon for essential consumption. If the tax structure is steeply progressive, high income earners may be discouraged from working as it may simply not be worthwhile seeking the next promotion by working harder.

MACROECONOMIC IMPACT:

(d) Impact on Consumption

- Higher **personal income taxes** reduce **disposable income**, which in turn discourages consumer spending. However, the extent to which consumption falls depends on the **marginal propensity to consume (MPC)**, where the higher the MPC, the greater the fall in consumption.
- As the poor tend to have larger MPCs than the rich, raising tax rates for the lower income tend to have a greater effect on reducing consumption than raising tax rates for the higher income.
- When comparing between countries, raising personal income tax rates for less wealthy developing countries is likely to reduce consumption more than raising tax rates for more wealthy developed countries.

(e) Impact on Savings and Investment

Raising **personal income taxes** reduces **disposable income**, thus reducing household's **ability** to save. Less savings means less funds for firms to borrow for investments. On the other hand, **higher corporate taxes** reduce **post-tax profits** which lowers the **incentive** for firms to invest.

Corporate Taxes in Singapore

It was announced in Budget 2009 that the corporate tax cut in Singapore to 17 per cent would take effect from 2010.This gives Singapore one of the most competitive rates in Asia, just a notch above Hong Kong's rate of 16.5 per cent. In fact, calculations have shown that companies with taxable income of $5.49 million or less will clearly pay less tax in Singapore than in Hong Kong. Besides, companies in Singapore are also given other tax rebates and exemptions.
A historic agreement was reached in 2021 where the minimum global corporate tax rate in 2023 is set at 15 per cent. Interested to find out how this will impact Singapore? Read https://www.straitstimes.com/singapore/politics/minimum-corporate-tax-rules-mean-singapore-is-in-for-tougher-competition-pm-lee

(f) Impact on Macroeconomic Stability

Taxation can be used as a tool to influence the level of economic activity. For example, during a recession, taxes can be cut to boost AD thereby stimulating output, income, and employment. When an economy is overheating, a higher taxation and hence lower AD can reduce the rate of inflation.

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7.1.2 GOVERNMENT EXPENDITURE

7.1.2.1 Types of Government Expenditure

Government expenditure can be classified in many ways, according to categories and functions.

- **Government consumption (or recurring expenditure)** refers to the day to day spending incurred which is recurrent e.g. wages of civil servants, maintenance costs of running existing capital assets, and transfer payments such as unemployment benefits.
- **Government investment (or development / capital expenditure)** refers to public spending on infrastructural development e.g. the building / renovation of hospitals, schools, roads etc.

7.1.2.2 Microeconomic and Macroeconomic Impacts of Government Expenditure

MICROECONOMIC IMPACT:

(a) Impact on Resource allocation (Efficiency)
By varying the types and extent of government expenditure, the government can affect the pattern of production. For example, if the government wants to encourage a move of resources away from labour intensive industries to capital, skill or technology based industries, it may give grants and subsidies to promote the latter industries.

(b) Impact on Income and Wealth Distribution (Equity)
Expenditure on health, housing, educational, social welfare and pensions primarily benefit the poor. Together with a progressive tax system, where revenue obtained from taxing the rich are used to fund these benefits, income and economic welfare can be redistributed more evenly thus reducing the extent of inequity in society

MACROECONOMIC IMPACT:

(c) Impact on Macroeconomic Stability
Government expenditure can be used as a tool to influence the level of economic activity. For example, during a recession, government expenditure can be raised to boost AD thereby stimulating output, income, and employment. When an economy is overheating, government expenditure and hence AD can be reduced to reduce the rate of inflation.

(d) Impact on Long Run Growth
Expenditure on infrastructure, such as transport and communications systems will improve the productive capacity or AS of a country, which will boost output, income, and employment in the long run.

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7.1.3 FISCAL POLICY

Fiscal policy can be defined broadly or narrowly.

- **Broadly defined**, fiscal policy can refer to any policy that involve changes in government spending or taxation
- **Narrowly defined**, fiscal policy refers to policies which aim to influence overall economic activity by altering the level of **aggregate demand** of an economy.
- The analysis for the this chapter will be based on the **narrow definition** because fiscal policy which aims to influence AS will be categorized and discussed under 'Supply-Side Policies"
- However depending on the expected scope of coverage, you may sometimes need to use the broad definition to organise your responses to certain essay or case study questions.

Fiscal policy can be categorised into **discretionary fiscal policy** and **automatic stabilisers** (non-discretionary fiscal policy).

Aim of govt when using supply-side FP: to ↑ to priced non-price competitiveness of the country's goods

7.1.3.1 Discretionary Fiscal Policy

As fiscal policy involves government spending and revenue, there is a need to understand the concept of a government budget. A **government budget** is an estimate of government revenue and expenditure for the coming year. The basic formula for a budget is "Tax revenue – Government expenditure" (T-G).

Balanced budget (T=G)	Estimated revenue = estimated government expenditure.
Deficit budget (T<G) i.e. "Expansionary budget"	Estimated revenue < estimated government expenditure. The resulting budget deficit must be financed by other methods (such as borrowing) and this is known as **deficit financing***. **The amount of borrowing required to finance a budget deficit is also known as the **Public Sector Borrowing Requirement (PSBR)**, which can be defined as the combined deficit of the central government, the local authorities and the public corporations/statutory boards. Refer to Appendix 2 for a write-up on National Debt.*
Surplus budget (T>G) i.e. "Contractionary budget"	Estimated revenue > estimated government expenditure. The extra funds from budget surplus is either used to pay off existing government debt or used to purchase assets that will form part of the government's / country's **fiscal reserves**.

Since fiscal policy involves manipulating the level of government expenditure and/or tax rates, this will have the effect of increasing/reducing the budget deficit/surplus.

Expansionary fiscal policy refers to the government's aim of increasing AD by running a budget deficit while a contractionary fiscal policy refers to the government's aim of reducing AD by running a budget surplus.

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DID YOU **KNOW** ?

The Singapore government planned for a **budget deficit** in 2015, 2016, 2018, 2019 and 2020 where the operating revenue was less than the total expenditure. This implies that the fiscal policy was expansionary in nature. However, as the Singapore government had accumulated huge reserves over the years due to budget surpluses, after accounting for the **Net Investment Returns Contribution** from investing the reserves, Singapore had an overall budget surplus, except in 2015, 2019 and 2020.

Table 1: Overall Fiscal Position for FY2014 to FY2020 ($ million)

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019 (Revised)	FY2020 (Budgeted)
Operating Revenue	60,838	64,823	68,964	75,816	73,738	74,727	76,010
Tax Revenue	54,110	55,647	58,699	66,363	66,203	67,877	69,273
Fees and Charges	6,405	8,674	9,760	9,075	7,106	6,381	6,255
Others	324	502	506	378	430	469	482
Total Expenditure	56,648	67,447	71,045	73,556	77,824	78,163	83,608
Operating Expenditure	42,685	48,090	52,129	55,581	57,561	59,546	64,599
Development Expenditure[1]	13,963	19,357	18,916	17,975	20,263	18,617	19,010
Primary Surplus / Deficit	4,190	(2,624)	(2,080)	2,259	(4,086)	(3,436)	(7,598)
Special Transfers[2]	12,356	10,369	6,372	6,122	8,989	15,265	21,982
Special Transfers Excluding Top-ups to Endowment and Trust Funds	3,856	4,369	2,772	2,112	1,689	1,697	4,662
Basic Surplus / Deficit[3]	334	(6,993)	(4,853)	147	(5,774)	(5,133)	(12,260)
Top-ups to Endowment and Trust Funds	8,500	6,000	3,600	4,010	7,300	13,568	17,320
Net Investment Returns Contribution[4]	8,738	8,943	14,577	14,724	16,413	17,048	18,632
Overall Budget Surplus / Deficit	571	(4,050)	6,125	10,861	3,339	(1,653)	(10,948)

Note: Negative figures are shown in parentheses.

[1] Development Expenditure excludes land-related expenditure.

[2] Special Transfers include Top-ups to Endowment and Trust Funds.

[3] Surplus / Deficit before Top-ups to Endowment and Trust Funds and Net Investment Returns Contribution.

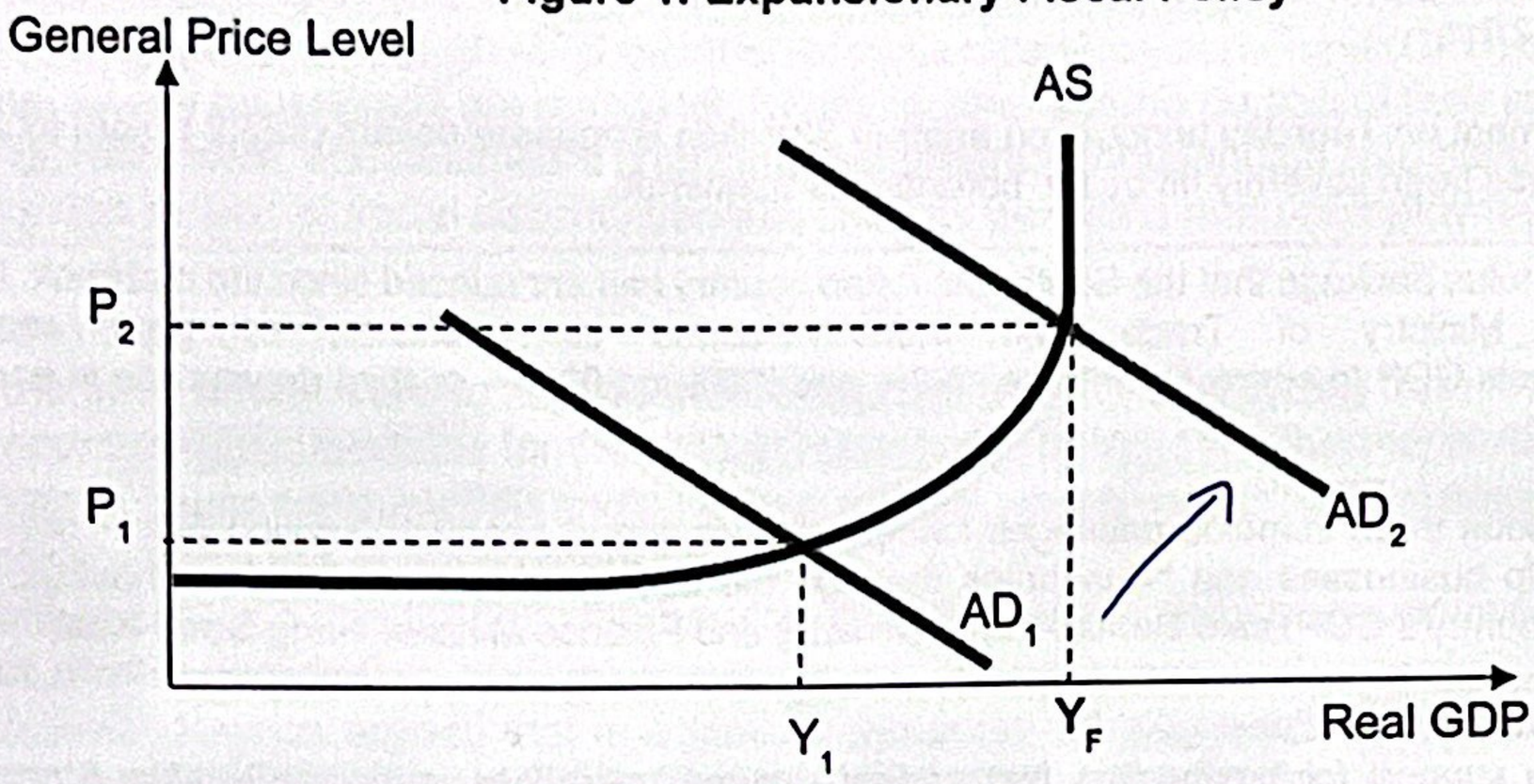
[4] Net Investment Returns Contribution is the sum of: (1) up to 50% of the expected long-term real return on the relevant assets specified in the Constitution; and (2) up to 50% of the net investment income on the remaining assets.

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7.1.3.1.1 Expansionary Fiscal Policy

Figure 1: Expansionary Fiscal Policy



- With reference to Figure 1, suppose aggregate demand is initially at AD_1. The existence of output gap ($Y_F - Y_1$) suggests that the economy is facing **demand-deficiency**, which can mean macroeconomic problems like slow growth, negative growth (recession), demand deficient unemployment and/or deflation. In such situations, expansionary fiscal policy can be used to resuscitate the economy.
- Expansionary fiscal policy involves running a budget deficit as government spending is raised while direct taxes are reduced. Higher spending by government organisations (e.g. on healthcare, education and infrastructure) will directly raise government demand (G). Reducing **personal income tax** or giving **more transfer payments** raises the **disposable income** of households while reducing **corporate taxes**[1] increases the **post-tax profits of firms**, thus further stimulating consumption (C) and investments (I).
- As the G, C, and I components of AD rise, output, and income will also rise. Households will spend part of the **additional income** causing consumption to rise further. However, as some of the income is saved, taxed, or spent on imports, each additional round of consumption will become increasingly smaller. The cycle stops when the rise in **income induced consumption** becomes negligible. Eventually, through this **multiplier process**, national income and output will rise several times more than the initial budget deficit. AD_1 shifts to AD_2, causing GPL to rise from P_1 to P_2, and real national output and income to rise from Y_1 to Y_F. Economic activity is restored back to its full employment level.

DID YOU **KNOW** ?

If the government spends on **transfer payments**, which are grants or other payments not made in return for a productive service, for example unemployment/ welfare benefits, GST vouchers, etc., such transfer payments will not lead to an increase in G component of AD as they do not lead to an increase in production of goods and services. However, when households who received these payments start spending, the C component of AD will rise as there is an increase in production of consumer goods and services.

[1] Sometimes, governments do not directly alter existing tax rates in the short term as it may be politically difficult to raise them in the future. Instead **tax holidays / exemption / rebates** are given so that funds can be injected into the economy while keeping tax rates unchanged

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https://www.cnbc.com/2020/05/26/singapore-plans-fourth-stimulus-package-for-coronavirus-hit-economy.html

Singapore plans $23.2 billion fourth stimulus package to support coronavirus-hit economy
TUE, MAY 26 2020

Singapore's government on Tuesday announced another 33 billion Singapore dollars ($23.2 billion) to support its economy which has been severely hit by the coronavirus pandemic.

That's the fourth stimulus package that the Southeast Asian country has announced since the outbreak. It came after Singapore's Ministry of Trade and Industry slashed its forecasts for gross domestic product. It now expects GDP to shrink by between 4.0% and 7.0% in 2020 — its third downgrade in economic projections this year.

Along with the previous three stimulus packages, Singapore will spend nearly 100 billion Singapore dollars ($70.4 billion) to help businesses and households manage the economic impact of the coronavirus. That's almost 20% of the country's GDP, said Deputy Prime Minister and Finance Minister Heng Swee Keat.

The latest stimulus measures include:

- Enhanced wage support for businesses that cannot resume operations immediately after Singapore's partial lockdown — or "circuit breaker" — is lifted next month, or those in hard-hit sectors;
- Waivers and rebates in foreign worker levy for companies in selected industries such as construction, as well as marine and offshore;
- Rental waivers and relief for small- and medium-sized enterprises;
- Expanding the number of opportunities in public and private sectors to more than 40,000 jobs.

The additional spending will push Singapore's budget deficit to 74.3 billion Singapore dollars ($52.3 billion), or around 15.4% of GDP — the largest-ever shortfall for a country known for its prudence.

To fund the stimulus, the government will once again draw down the country's reserves — a move that Singapore's President Halimah Yacob, in a Facebook post on Monday, said she has given "in-principle support" for.

Singapore was one of the earliest countries outside China to report cases of the coronavirus disease, which is formally named Covid-19. The country's health ministry said on Tuesday it has preliminarily confirmed 383 new coronavirus cases, bringing the tally to 32,343 — one of the highest in Asia.

Lockdown measures that many countries enacted to contain the spread of the virus have hit economic activity globally, including reducing the amount of trade worldwide. Several economists have named Singapore as one of the most vulnerable economies in the pandemic given its reliance on trade for growth.

Limitations and Trade-offs of Expansionary Fiscal Policy

LIMITATIONS:

(1) Size of multiplier

- The size of the multiplier depends on a country's **marginal propensity to consume** (MPC), which is in turn dependent on its **marginal propensity to withdraw** (MPW) i.e. k = 1/(1-MPC) = 1/MPW.
- MPW consists of the marginal propensities to save (MPS), tax (MPT) and import (MPM), **i.e. MPW = MPS + MPT + MPM.**
- Countries with high MPW due to high savings rates, income tax rates, or import dependence will likely have a small multiplier, which will limit the effectiveness of fiscal policy in raising AD. This is because at each round of the multiplier process, more will leak out and less will come back as consumption expenditure.
- Savings and tax rates are often determined by how much **welfare benefits** are being provided.
  - Households need to save less if welfare benefits are generous
  - Income tax rates tend to be higher to fund such generous welfare benefits
- In general, **small countries** tend to **lack natural resources** so they are more **import dependent** while large countries tend to be more resource abundant and hence less import dependent.

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Why does Singapore have a small multiplier?

Singapore has a **high MPM** because it is small and thus lacks natural resources. It not only needs to import food, fuel and almost all other raw materials for domestic use, but also to produce goods for exports. Singapore has a **high MPS** because of its Central Provident Fund (CPF) compulsory savings scheme, where households are mandated by law to save a large portion of their income for individual housing, retirement, and healthcare financing. Singaporean households also have high precautionary savings due to lack of social security benefits such as pensions and unemployment benefits.

(2) Crowding-out effect

- If the government were to finance their **budget deficit** by **borrowing** from financial markets, the amount of funds available for the private households and firms to borrow is reduced
- This will cause consumption and investment to fall, which may offset the expansion in AD arising from the initial rise in government demand
- Such a situation can be described as the crowding out effect (i.e. government demand **crowds out** private demand)
- However, Keynes argued that in a severe economic downturn, crowding out is unlikely because firms and households are **too pessimistic to borrow** in the first place
- Hence there will be **excess funds** in the financial market, which the government can easily tap on without depriving the private sector of any funding

(3) Size of government spending relative to total demand

- If government spending constitutes a small proportion of AD, then government spending may need to be raised more than proportionately to offset any fall in AD
- For example, if government spending only forms 10% of AD, should overall AD fall by 5%, then government spending needs to be raised to 15% of AD to close the output gap
- However, a rise from 10% to 15% of AD translates to a 50% increase in government spending, which may not be feasible for a government to carry out as it may not have enough reserves or may not be able to borrow that much to finance the resulting deficit

(4) Size of domestic demand relative to external demand

- Fiscal policy works by boosting government spending and by stimulating consumption and investment through transfers and cuts in direct taxes
- However, for **small export-oriented economies** (e.g. Singapore), external demand is likely to be substantially larger than domestic demand
- Should there be a substantial fall in external demand, it may be hard for fiscal policy to boost domestic demand sufficiently to compensate for this fall

(5) Time lags (Inflexibility of government expenditure)

- Should the government decide to raise its spending on infrastructural development, it will take some time for the various government agencies to decide on what infrastructural projects to spend on and how much to spend
- There is inflexibility of government's expenditure as the amount of money that the government is willing to spend would not be injected into the economy immediately
- Also, such projects take time to construct, payments will not be made upfront but will instead be spread over a prolonged period
- Economist have estimated that it can take up to 5 years for fiscal measures to take effect, which by then, the economy could have already recovered
- If the economy is at or near full employment, such spending may instead be **destabilising** as it will contribute to the overheating of the economy

(6) Tax insensitivity

- During an economic downturn, **consumer** and **business confidence is weak**,
- Even if the government provides more transfers or cut direct taxes, households and firms may still be reluctant to spend on consumption and investment
- Hence the impact of such cuts in direct taxes on raising AD may be limited

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TRADE-OFFS:

(7) Accumulation of national debt

- Expansionary fiscal policy involves running budget deficits which are typically financed from borrowing (e.g. issuing of government bonds)
- Thus generates government debt which needs to be paid back with interest in the future
- There are **opportunity costs / trade-offs** incurred as the tax revenue used to pay off such debt can instead be used for other productive purposes e.g. spending on education
- If a government were to accumulate so much debt (typically **more than 60% of GDP**) such that financial markets become concerned about its ability to pay back, it will be difficult to borrow more funds for further fiscal expansion
- Moreover, when the debt needs to be paid back in the future, it may result in less resources available in the future for the government to spend on social and developmental needs. This implies that there is an **intergenerational transfer of welfare from future generations to the present generation.**
- To convince financial markets of its ability to pay back its debt, the government may need to cut its spending and raise taxes to reduce its debt, or if not, at least reduce its deficits (**austerity**)
- This will not only have a **contractionary effect** on the economy, it may also harm the economy in the long run as direct taxes can **disincentive efforts to work, save and invest.**

(8) Inflation and Overheating

- **Excessive fiscal expansion** can cause AD to continue rising even when the economy has already reached full employment, thus resulting in overheating and demand pull-inflation
- In the case of recession caused by a **supply shock**, although fiscal expansion can boost output and income, the **trade-off** in terms of **higher inflation** is **inevitable**

TO SUM UP:

Despite its limitations and trade-offs, fiscal policy is still commonly used by governments to counter demand deficiency for the following reasons.

- Unlike monetary policy, which can be totally ineffective if economic outlook is poor, fiscal policy will definitely have some effect in raising AD as government demand will definitely increase, hence there is always hope that it can 'jump-start' an economic recovery.

- Even though the **direct impact** of the **fiscal expansion** may be **limited**, the **indirect effect** in terms of **boosting consumer** and **producer confidence** may spur investment and consumption, thus potentially creating a **'crowding-in effect'**

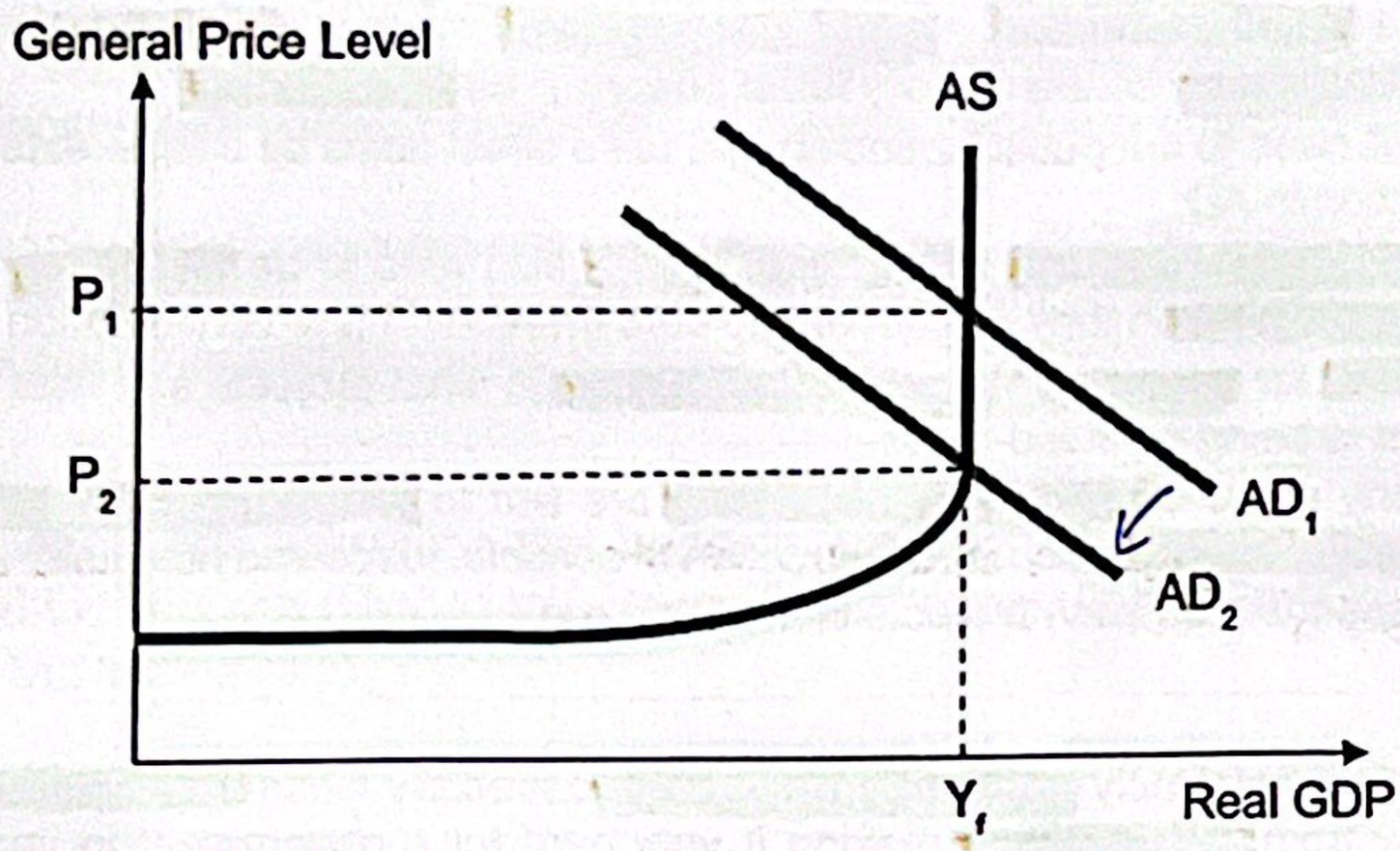
1. Which of the above limitations and unintended consequences are more applicable to Singapore and to the US? Justify your answer.

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7.1.3.1.2 Contractionary Fiscal Policy

Figure 2: Contractionary Fiscal Policy



- With reference to Figure 2, suppose aggregate demand was initially at AD_1 and the economy was facing **demand-pull inflation**. Contractionary fiscal policy can be used to prevent overheating.
- **Contractionary fiscal policy** involves running a **budget surplus** as government spending is cut while direct taxes are raised. Lower **spending by government organisations** will directly reduce government demand **(G)**. Raising **personal income** and **corporate taxes** will lower the **disposable income** of households and **post-tax profits** of firms, thus further dampening consumption **(C)** and investments **(I)**.
- As the G, C and I components of AD falls, **nominal income will also fall** causing households to cut back on consumption. However, only some of the reduction in income will translate to a reduced consumption as there will also be less income being saved, taxed, or spent on imports. Each additional round of consumption reduction will become increasingly smaller and this cycle will stop when the **fall in income induced consumption** becomes negligible. Eventually, through this **downward multiplier process**, nominal income and output will fall by a multiple of the initial budget surplus. AD_1 shifts to AD_2, causing GPL to fall from P_1 to P_2 with real national output remaining unchanged at Y_F.
- Although the diagram shows a fall in GPL, governments in reality do not aim for deflation as this is detrimental to the economy. Their aim is to instead lower inflation rates to below 2% or 3% (depending on their target level) so that the positive effects of low inflation can be reaped while the adverse effects of high inflation can be avoided. So instead of reducing AD, contractionary fiscal policy aims to **reduce the rate of increase in AD**.

Note: *Raising direct taxes to curtail private spending has a negative implication in the long run. High corporate taxes might discourage investment, reduce the incentive to work, and make it more difficult to attract foreign talent.*

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Limitations and Trade-offs of Contractionary Fiscal Policy

LIMITATIONS:

- Many of the limitations of expansionary fiscal policy also apply to contractionary fiscal policy
- If a country has a **small multiplier,** a **small government** sector or **small domestic demand relative to external demand**, contractionary fiscal policy will be **less effective**
- Such countries will need to cut public spending and raise direct taxes by a large extent to get any meaningful reduction in AD.
- Also, during an **economic upturn, raising direct taxes** also tend to be **ineffective** as **firms** are **households** are **optimistic** so they are unlikely to curb investment and consumption
- It will also **take time** for **government agencies to decide** on what projects and how much to cut when their budget is being curtailed
- Furthermore, many areas of **government spending** are tied to **long term contracts** and have important **long-term benefits**, such as construction of schools, roads and hospitals, which makes it hard to curtail spending on such projects in the short run

TRADE-OFFS:

- **Raising taxes** will be extremely **politically unpopular** especially when **households are already** suffering severely from **high inflation,** making it very hard for a government to implement and causing government to lose political votes if it were to do so.
- **Cutting welfare spending** is also difficult as it may cause **severe hardship** for those affected

Note: *As it is much harder to raise taxes and cut spending, governments almost always choose monetary policy over fiscal policy when it comes fighting inflation.*

TO SUM UP:

- Due to its **severe limitations** and **trade-offs, governments seldom adopt** contractionary fiscal **policy** on its own, though they may at times used it to **complement** contractionary monetary policy
- Nevertheless, both types of policies run the risk of forcing an overheating economy into a **'hard-landing,'** where economy suddenly transits from expansion to recession
- This happens when such policies are **excessively contractionary,** so the government has to be careful not to **over dampen AD**
- A **long-term policy** to minimise inflation is to ensure a **sustained increase** in the economy's **productive capacity** so that **long run non-inflationary growth** is achieved by enabling AS to grow in tandem with AD.

7.1.3.1.3 Expenditure Reducing Policy to Correct a Trade Deficit

Balance of Trade (BOT) = **Export Revenue** (Px*Qx) – **Import Expenditure** (Pm*Qm)

where the BOT and its components are measured in **domestic currency**

- A **trade deficit** (negative trade balance) arises when export revenue is less than import expenditure i.e. (Px*Qx) < (Pm*Qm) which is (Px*Qx) - (Pm*Qm) < 0.
- A trade deficit means that a country is not earning enough from its export to pay for its imports.
- The country thus has to finance its import spending from either (1) **borrowing** from overseas (2) **selling assets** to foreigners and/or (3) drawing on its **foreign exchange reserves.**
- A trade deficit suggests that the country is **sacrificing future welfare** for current consumption because all the methods of financing will incur **future opportunity costs.**
  - The borrowed funds and interests need to be repaid in the future to the foreign lenders.

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- Income generated by foreign owned assets will be paid out in the future to foreign entities.
- The reserves that have been depleted are unavailable for future use.

- Hence countries with **large and persistent** trade deficits may want to reduce such deficits.

- Trade deficits can be reduced through **expenditure reducing policies** which involve the use of contractionary fiscal policy or contractionary monetary policy or both.

- Contractionary fiscal policy reduces **government demand** (G) for goods and services as well as **private demand** by firms and households for investment (I) and consumption (C) through the cutting of **transfers** and the raising of **direct taxes.**

- The reduction in G, C and I causes AD to fall, via the multiplier process, the real national income would fall. Assuming that **imports are normal goods**, this will then cause the **demand** for **imports** (Qm) to fall. Hence import expenditure (Pm*Qm) will fall, leading to a fall in the trade deficit.

Limitations & Trade-offs

- A fall in national income may not lead to a significant fall in import expenditure if the **demand for imports is income inelastic,** which is likely the case if a large proportion of imports consists of basic necessities food and fuel
- As expenditure reducing policies are contractionary in nature, they will definitely be **trade-offs** in terms or **reduced growth** and **higher unemployment**.

7.1.4 AUSTERITY MEASURES

7.1.4.1 Background and Objectives

- In the aftermath of the global financial crisis, as a result of ballooning welfare pay-outs and efforts to fiscally stimulate their economies, many governments of European Union countries, ran large and increasing **budget deficits**[2]
- This gave rise to the **Eurozone Debt Crisis,** where countries like such as **Portugal, Italy, Ireland Greece and Spain (PIIGS)** accumulated so much debt that concerns regarding sovereign debt default arose[3]
- **Sovereign debt default** refers to situation where the government of a country owes so much that it is unable to redeem its bonds that have matured or pay-off the interest of existing bonds i.e. the government has gone **'bankrupt'**
- In such situations, the government is probably unable to fully fund the operations of various public institutions and organisations, thus severely affecting the economy's ability to operate efficiently and effectively, and also threatening the internal and external security of the country
- Should such a default occur, a major loss in investor confidence will inevitably arise, resulting massive **capital flight** which will severely destabilise the country
- To avoid the possibility of sovereign bankruptcy, many countries in the EU adopted **austerity measures** where they raised taxes and cut public spending to bring their budget deficits and rate of debt accumulation down to more **sustainable levels**

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[2] Budget deficit occurs when government expenditure exceeds government revenue over a period of a year.
[3] Debt is the accumulation of past budget deficits which have not been repaid. For example, in Year 1, the budget deficit for a country is $10 million. In Year 2, the budget deficit is $30 million. Thus, the national debt is $40 million for both years. If the government repays $5 million, the national debt is reduced to $35 million.

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- If successful, austerity should eventually lead to healthier debt positions, thus helping the country **restore investor confidence**, which will then **promote investment and economic growth.**

7.1.4.2 Unintended Consequences

(a) Reduction in material living standards

- In the short run, higher direct taxes reduces household disposable income, while higher indirect taxes reduces real income (due to higher prices of goods and services), thus directly reducing consumption and households' material living standards
- Austerity measures will also cause government spending, consumption and investment to fall, thus reducing a country's AD and economic growth
- If growth slows to a level where the rate of job creation is slower than the labour force growth, this will cause demand deficient unemployment to rise
- Falling real income, growth and rising unemployment will have an adverse impact on the material living standards of the country's residents

(b) Reduction in non-material living standards

- Reduction in public spending on merit goods like education, healthcare, and housing will lower the quality and accessibility of such services.
- Reduction in public spending on environment protection and public transport provision can result in increased environment degradation, traffic congestion and longer travel durations
- Reduction in public spending on maintaining law and order may result in higher crime rates and increased anxiety due to a lower sense of security

(c) Inability to achieve intended outcomes

- Should an economy contract as a result of austerity, income and consumption levels will fall, thus causing tax revenue from such sources to fall as well, so the government may end up collecting less taxes than before
- Moreover, the government will likely need to increase transfer payments/ social spending such as welfare benefits as unemployment/ retrenchment rises
- Hence, the shortfall between tax receipts and spending widens, making it harder to reduce an existing budget deficit.

To sum up: It is important for governments not to be overly aggressive in implementation of austerity measures. They should focus on cutting expenditure on non-essential projects and only raise taxes for those in the highest income bracket, so as not to discourage work for the masses.



2. Are austerity measures the same as discretionary contractionary fiscal policy? Why yes/no?

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APPENDIX 1: PROGRESSIVE VS REGRESSIVE TAX

To understand whether a tax is progressive or regression, we first need to understand the concepts of marginal rate of taxation and average rate of taxation.

Marginal Tax Rates (MTR) refer to the proportion of <u>additional</u> income that is paid in taxes

$$MTR = \frac{\text{Change in Taxes}}{\text{Change in Income}} = \frac{\Delta T}{\Delta Y}$$

Average Tax Rates or (ATR) is the proportion of <u>total</u> income that is paid in taxes

$$ATR = \frac{\text{Total Taxes}}{\text{Total Income}} = \frac{T}{Y}$$

(a) Progressive Taxes

- A tax system is **progressive** when the **ATR rises with income.**
- For **personal income taxes** (taxes imposed on the incomes of individuals) to be progressive, they are typically structured such that **MTR rises with income,** since rising MTR will cause ATR to rise.

Table 1: Progressive Tax System

Income ($)	MTR = ΔT/ΔY	Tax Paid Per Bracket	Total Tax Paid	Total Income	ATR = T/Y
0000 - 1000	10%	100	100	1000	100 / 1000 = 10%
1001 - 2000	30%	300	400	2000	400 / 2000 = 20%
2001 - 3000	50%	500	900	3000	900 / 3000 = 30%

Personal income tax rates in Singapore are one of the lowest in the world and it follows a progressive tax rate starting at 0% and ending at 22% for earnings above S$320,000. Filing a personal tax return is mandatory if one's annual income is S$20,000 or more. Those who earn an annual income less than S$20,000 are exempted from paying personal income tax.

Table 2: Singapore Personal Income Tax Rates (From Year 2017)

Chargeable Income	Rate (%)	Gross Tax Payable ($)	Chargeable Income	Rate (%)	Gross Tax Payable ($)
First $20,000	0	0	First $160,000	-	13,950
Next $10,000	2	200	Next $ 40,000	18	7,200
First $30,000	-	200	First $200,000	-	21,150
Next $10,000	3.5	350	Next $120,000	19	7,600
First $40,000	-	550	First $240,000	-	28,750
Next $40,000	7	2,800	Next $ 40,000	19.5	7,800
First $80,000	-	3,350	First $280,000	-	36,550
Next $40,000	11.5	4,600	Next $ 40,000	20	8,000
First $120,000	-	7950	First $320,000	-	44,550
Next $40,000	15	6000	Above $320,000	22	44,550

https://www.iras.gov.sg/IRASHome/Individuals/Locals/Working-Out-Your-Taxes/Income-Tax-Rates/

- Although **corporate taxes** (taxes imposed on firms' profits) are typically levied at fixed rates, they are generally progressive in nature because they are often imposed only on larger firms (based on revenue) which are typically owned by wealthier businessmen.
- Similarly, **property taxes** (taxes imposed on the value of a property or the income generated from it) and **capital gains taxes** (taxes are imposed on the monetary gains made from the selling of an asset) are also progressive. This is because the rich generally own more property, more expensive property and are also more likely to profit from the appreciation of property, stocks, and shares than the poor.
- Finally, **taxing luxuries more than necessities** is also progressive as the rich tend to spend proportionately more of their income on luxuries while the poor tend to spend proportionately more of their income on necessities.

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Scan and read the article (*Today*, 22 Nov 2017) on Singapore's progressive tax system

(b) Regressive Taxes

While most of the taxes mentioned so far are progressive in nature, some types of taxes are instead regressive. An example is a general sales tax like the **Goods and Services Tax (GST)** or the **Value Added Tax (VAT)**, which is a uniform rate tax that is imposed on the sale or purchase of all consumer goods and services. Such taxes are regressive because the poor tend to spend a greater proportion of their income on consumption than the rich as they have more unsatisfied needs and wants to fulfil. Similarly, as the poor tend to spend a higher proportion of their income on **vices** such as **gambling, tobacco** and **alcohol** as compared to the rich, **'sin' taxes** which are used to curb the consumption of such **demerit goods** are also generally regressive in nature.

APPENDIX 2: THE NATIONAL DEBT

When the central government's expenditure exceeds the central government's tax revenue, a budget deficit is incurred. The central government will need to borrow to finance this deficit. The budget deficit therefore refers to the debt the central government incurs **in one year.** If it runs persistent deficits over many years, these debts will accumulate. The accumulated budget deficits **over the years** are known as the ***national debt.*** Another term that is closely related to budget deficit is the public sector net cash requirement PSNCR (also known as public sector borrowing requirement PSBR). It is the deficit of the **entire public sector,** namely the central government plus the local government plus the public corporations. It is defined as the public sector expenditure minus public sector revenue for a given year.

Why does the government borrow instead of imposing enough taxes to finance its expenditure?

1. ***Depression and unemployment.*** During a depression, consumers and investment spending is insufficient to provide full employment and higher taxes will only reduce the spending by households and businesses further. Therefore, there is a strong case for government borrowing during a depression.
2. ***Non-recurrent expenditure.*** These expenditures do not arise regularly and tend to be spread over a many years e.g. building of overhead bridges, improvement of road system. Financing non-recurrent expenditure by taxation will create inequality between the present and future taxpayers as the projects will benefit both groups, but only the present taxpayers pay for them. Thus, it may be better to finance non-recurrent expenditure by borrowing so that future tax payers also finance some of such expenditure.

The National Debt comprises external debts and internal debts. The external debt includes foreign government loans, loans from international institutions and public borrowing from the capital markets of international financial centres. While external debt means that future income will be transferred abroad thus constituting a real burden on the country, internal debt only results in transfers of welfare within the country, which is less detrimental as there is no net welfare loss to the country as a whole.

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PART 2 : Monetary Policy

Conceptual Outline

MONETARY POLICY		
Monetary policy refers broadly to the instruments used by the Central Bank to influence the level of economic activity. The Central Bank could either pursue an expansionary monetary policy (i.e. monetary easing) or a contractionary monetary policy (i.e. monetary tightening). However, the instruments / tools used to carry out monetary policy vary across different countries.		
INSTRUMENTS OF MONETARY POLICY		
MAJOR ECONOMIES: The US, UK, EU (28), Japan and China		**SINGAPORE (special case)**
(A)Target MONEY SUPPLY	**(B)Target INTEREST RATE**	**(C) Target EXCHANGE RATE**
HOW IT WORKS		
The central bank regulates banks' ability to lend or give loans.	The central bank sets the official rate at which it lends to commercial banks.	The central bank intervenes to buy and sell the home currency in the foreign exchange market.
OBJECTIVES (link to macro-goals)		
Expansionary Monetary Policy/Monetary Easing		
Increase money supply to directly stimulate lending and spending	Cut interest rate to encourage borrowing for consumption and investment *(FOCUS OF THE A LEVEL SYLLABUS)*	Devalue the currency to stimulate exports and curb imports in times of a recession
Contractionary Monetary Policy/Monetary Tightening		
Decrease money supply to directly curb lending and spending	Raise interest rate to discourage borrowing for consumption and investment	Revalue the currency to curb exports and raise imports when the economy is overheating
LIMITATIONS & TRADE-OFFS OF MONETARY POLICY		

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SECTION OUTLINE

7.2.1 Introduction

7.2.1.1 Meaning and Objectives of Monetary Policy
7.2.1.2 Money Supply

7.2.2 Instruments of Monetary Policy

7.2.2A Managing Money Supply
7.2.2A.1 Traditional Methods
7.2.2A.2 Unconventional Methods

7.2.2B Managing Interest Rates
7.2.2B.1 Expansionary Monetary Policy
7.2.2B.2 Contractionary Monetary Policy

7.2.2C Managing Exchange Rate (Singapore Context)
7.2.2C.1 Reasons for Singapore's Choice of Managing Exchange Rates

References
Appendices

Note:

- *When a question asks for "Monetary Policy" in general, students should only focus on "traditional" interpretation of monetary policy which targets money supply and interest rate and not exchange rate.*
- *If the question is specifically on exchange rate-based monetary policy in the case of Singapore, students should focus on exchange rate.*

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7.2.1 INTRODUCTION

7.2.1.1 MEANING AND OBJECTIVES OF MONETARY POLICY

- The **central bank** is the official government institution entrusted to carry out monetary policy.
- **Monetary policy** refers to actions by the central bank to influence the level of economic activity so as to achieve various macro-objectives like actual and potential economic growth, low and stable inflation, full employment and favourable balance of trade.
- The central bank could either pursue an **expansionary monetary policy** (i.e. **monetary easing**) or a **contractionary monetary policy** (i.e. **monetary tightening**).
- The instruments used to carry out monetary policy vary across different countries. In general, the central bank can manage **money supply, interest rates** and/or **exchange rates.**

7.2.1.2 MONEY SUPPLY

- **Money supply** refers to the total amount of **purchasing power** of an economy.

- In a modern economy, money supply comes mainly in these two forms:
  - Notes and coins (currency or cash)
  - Bank credit or loans

- **Notes and Coins**
  - It is the most recognisable form of money which is held in our wallets and pockets and used generally for making small transactions involving cash payments such as paying for daily expenses like food, transport and groceries.
  - It is sometimes called physical money or printed/minted money because they exist in a form that we can see, feel and touch.
  - Such form of money or cash constitutes only a very small proportion of money supply in a modern economy (around 3%)

- **Bank Credit**
  - In a modern economy, the bulk of money supply used for transactions comes in the form of bank credit or bank loans.
  - Bank credit does not exist in physical form (i.e. cannot be seen, felt or touched) but they are created by banks and recorded in the bank's balance sheet.
  - Such forms of money are transferred from one person to another via the use of cheques or electronic fund transfers without the need to physically withdraw cash.
  - Transactions involving large sums of money e.g. purchase of homes, cars, large business deals are usually settled by cheques or electronic fund transfers on a daily basis because it is more convenient and secure.
  - Bank credit is considered money supply as it gives firms and households purchasing power.
  - Bank credit constitutes the main bulk of total purchasing power in a modern economy so it is usually more important than cash in the conduct of monetary policy.

<u>Note:</u> Refer to Appendix 1 for the details on 'Credit Creation' by commercial banks which forms the bulk of money supply.

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7.2.2 INSTRUMENTS OF MONETARY POLICY

- In general, a central bank conducts monetary policy by manipulating either money supply, interest rates, or exchange rates.
- Central banks in **large economies** such as US, UK and Japan where domestic demand tends to be larger than external demand usually prefer to **manage money supply or interest rates**
- Central banks in **smaller economies** such as Singapore where external demand tend to be larger than internal demand usually prefer to **manage exchange rates.**

7.2.2A Managing MONEY SUPPLY

<u>Note:</u> This section is more for your information as they are commonly used by Central Banks but the details are generally not required in exams.

7.2.2A.1 Traditional Methods

Required Reserve Ratio

- Central banks control money supply by altering the level of **bank liquidity**, which refers to cash reserves kept by banks to back up loans which they have created.
- For every loan that the bank provides, it must be backed by a certain amount of **cash reserves** to ensure that the bank has the ability to honour withdrawals made by depositors.
- Banks are usually required to keep only a small fraction of total loans as cash reserve e.g.
  - If the **cash reserve ratio** (r) is 5%, for every $100 of loans, banks need to keep $5 cash.
  - Assuming a cash reserve ratio (r) of 5%, if banks receive $100mil in cash deposit, they could, in effect provide or create loans amounting to $2bn, i.e. 1/r x $100 = 20 x $100m = $2bn.
  - The smaller the ratio the greater the ability of commercial banks to provide loans.
  - *For a more detailed explanation of the credit creation process, please refer to Appendix 1.*

- Instead of a strict cash reserve ratio, the central bank can instead impose a **liquidity ratio** which is the ratio of liquid assets to total deposits.
- Typically, **liquid assets** refer to cash, commercial banks' deposits with the central bank and short term (less than 1 year duration) government bonds, which are usually called **treasury bills.**
- When commercial banks are short of cash to meet withdrawals, they can easily acquire more cash by drawing on their deposits with the central bank or by selling their holdings of treasury bills in exchange for cash.

Open Market Operations (OMO)

- If the central bank wants to reduce money supply, it will sell treasury bills, which are issued by the government, so that the cash that is received as payment can be **withdrawn from active circulation**, which will then reduce the cash holdings of commercial banks and thus their ability to create credit.
- If the central bank wants to raise money supply, it will buy back treasury bills which means that cash is injected into the banking system, thus raising the cash holdings of commercial banks and their ability to create credit.
- OMO is the most widely used tool to manage money supply and it can also be used as a method to control interest rates as well.

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7.2.2A.2 Unconventional Methods

Quantitative Easing (QE)

- During the **global financial crisis** (starting from around Nov 2008), the **official interest rate** in US, UK and the Eurozone was **slashed to near zero** and **could not be lowered further.**
- Moreover, **commercial banks** were **unable and unwilling** to **lend** because of **bad debts incurred** during the crisis.
- **Firms and households** were also **unwilling to borrow** due to a **weak economic outlook.**
- As central banks needed to **find another way** to **boost liquidity** to **stimulate the weak economy,** QE was born.
- **QE** refers to **creation of money** to **purchase medium to long term government bonds** and possibly other **financial assets** like **private sector bonds, stocks and shares.**
  Note: *the purchase of short term (duration of 1 year or less) government bonds i.e. treasury bills are not considered QE as they a part of Open Market Operation.*
- By **purchasing financial assets** from the **general public,** the **central bank bypasses financial intermediaries** like commercial banks to **channel cash directly** to **firms and households** to **boost** their **purchasing power.**
- When the **newly injected cash** finds its way into the **banking system** as **cash deposits**, **banks** will also find themselves in a **better position** to **extend loans** and **create credit.**

Effectiveness of QE

- According to the IMF, the quantitative easing policies undertaken by the Central Banks of the major developed countries such as US, UK and Japan since the late-2000s financial crisis have contributed to the **reduction in systemic risks** following the bankruptcy of Lehman Brothers. *Systemic risk is the risk inherent to the entire financial market.*
- The IMF states that the policies also contributed to the **improvements in market confidence** which in turn contributed to increasing consumption and the bottoming out of the recession in the G-7 economies in the second half of 2009.
- This shows that the effectiveness of QE largely depends on the economic outlook of consumers and firms. If the economic outlook is weak, consumers and firms may be unwilling to spend, limiting the effectiveness of QE.

Trade-offs of QE

- Although QE did have some impact on alleviating the economic downturn in these countries, it failed to spark any real economic recovery as their growth still remained low for many years. Even with the moderate success, central banks still considered it as a policy of "last resort" as prolonged monetary expansion should eventually lead to **high inflation** due to the massive injection of money supply in the economy.
- Instead of spending in the domestic economy, QE led to asset bubbles due to **massive capital outflows** into **stock and property markets of other economies** like Singapore and Hong Kong. Ballooning property prices caused many residents in these countries to experience escalating accommodation costs while firms experience higher operating costs. The impact of asset bubbles bursting is also destabilising for an economy. On another note, such outflows could possibly explain why the impact of QE in stimulating the economies of the originating countries was less than expected, and also why these countries did not experience much inflationary pressures despite large and prolonged monetary expansion

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FOR YOUR READING PLEASURE

Quantitative Easing, *The New York Times, April 25, 2011*

Central banks usually strengthen the economy through a single, vastly powerful tool — lowering interest rates. When the Federal Reserve makes it cheaper for banks to borrow money, that stimulus generally flows through the entire economy, as the banks make loans that in turn stimulate economic activity.

But when times are so dire that banks are reluctant to lend or borrowers to borrow whatever the cost, interest rate cuts lose their punch. That happened in Japan after the bursting of its real-estate bubble in 1991, and happened again in the wake of the credit crisis that upended Wall Street in the fall of 2008. In those circumstances, central banks turn to what economists call "quantitative easing" — unorthodox methods of pumping money into an economy that central bankers do not usually control.

The most usual approach is large-scale purchases of debt. The effect is the same as printing money in vast quantities, but without ever turning on the printing presses. The Fed buys government or other bonds and writes down that it has done so — what is called "expanding the balance sheet." The central bank then makes that money available for banks to borrow, thereby expanding the amount of money sloshing around the economy thereby, it hopes, reducing long-term interest rates.

The Federal Reserve introduced a slew of lending programs in its effort to revive corporate and consumer lending. After the financial crisis of September 2008, the Fed's balance sheet ballooned from about $900 billion to more than $2 trillion as it created new money and lent it out through all its new programs. It brought the purchase program to an end in the spring of 2010, but as the recovery faltered Fed officials signalled in the fall that they were prepared to undertake a new round to try to fight persistently low inflation and high unemployment. (The plan became commonly known as QE2.)

First the central bank began to reinvest proceeds from its mortgage-related holdings to buy Treasury debt; it plans to purchase $250 billion to $300 billion worth in that way. Then, the day after the November 2010 elections, the Fed announced that it would purchase an additional $600 billion in long-term Treasury securities. The two moves would just about double the $800 billion or so in Treasury debt already on the Fed's balance sheet.

Most economists credit quantitative easing, along with near-zero interest rates, the stimulus bill and the federal bank bailout, with preventing a global depression. But they also made the Fed the focus of unusual scrutiny and criticism, with some critics warning it was ***sowing the seeds of future inflation.*** *In October 2010, Mr. Bernanke gave a detailed account of the measures he said the Fed could use to prevent such long-term damage.*

Other economists warned that quantitative easing may be of ***limited use when the problem is a lack of demand, rather than of liquidity — that consumers and businesses were uninterested in spending in the face of high unemployment no matter how much cheap money is around.***

Six months later the round of purchases began, a broad range of economists described the results of the asset purchases as disappointing. The program pumped up the stock market, reduced the cost of American exports and allowed companies to borrow money at lower interest rates. But most Americans did not feel a difference, in part because those benefits turned out to be surprisingly small.

While $600 billion sounds like a lot of money, the purchases have not even kept pace with the government's issuance of new debt, so in a sense the effort has amounted to treading water. And a growing body of research suggests that the Fed could have had a larger impact by spending more money on a broader range of debt, like mortgage bonds, as it did initially.

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7.2.2B Managing INTEREST RATES

Introduction

- To households and firms, interest rates represents the **cost of credit,** i.e. the price they have to pay to borrow money from the financial markets.
- In reality, different types of loans have different **market interest rates** where loans which are longer or riskier tend to require higher interest rates.
- However, all interest rates tend to rise or fall in the same direction as the **base interest rate** which is typically set by the central bank.
- Hence, when discussing managing interest rates in monetary policy, we are usually referring to this base interest rate, which is also known as the **official interest rate** set by the central bank.

Market vs official interest rates

- **Market interest rates** are rates that are determined by **market forces of demand and supply.**
- There are two different theories which can be used to explain how the market interest rate is determined: (1) Loanable funds theory (Classical theory) and (2) Liquidity preference theory (Keynesian theory).
- *Refer to Appendix 2 for the details on these two theories.*

- The **official interest rate** is the interest rate set by the Central Bank in the course of conducting monetary policy, which is not driven by market forces.
- Typically, the Central Bank raises the official interest rate to "cool down" an overheated economy and cuts this rate to stimulate borrowing and spending during economic downturns.

- The **official interest rate** is often known as the **discount rate,** which is the rate at which the central bank lends to commercial banks.
- If the discount rate is raised, commercial banks tend to raise market interest rates as they need to ensure that they do not make losses should they need to borrow from the central bank.
- If the discount rate is lowered, commercial banks tend to lower market interest rates as they can borrow more cheaply from the central bank if they need to.

Nominal vs real interest rate

- **Nominal interest rate** is the interest rate **before** making any **adjustment for inflation.**
- For example if the borrower has to pay an interest of $10 on a loan of $100, then the nominal interest rate is 10%.
- **Real interest rate** is the interest rate **after** making **adjustment for inflation,** hence:

Real Interest Rate = Nominal Interest Rate - Inflation Rate

- For example, if the nominal interest rate is 10% and the inflation rate is 2%, then the real interest rate is 8%.
- Real interest rate can be negative if the inflation rate exceeds the nominal interest rate.

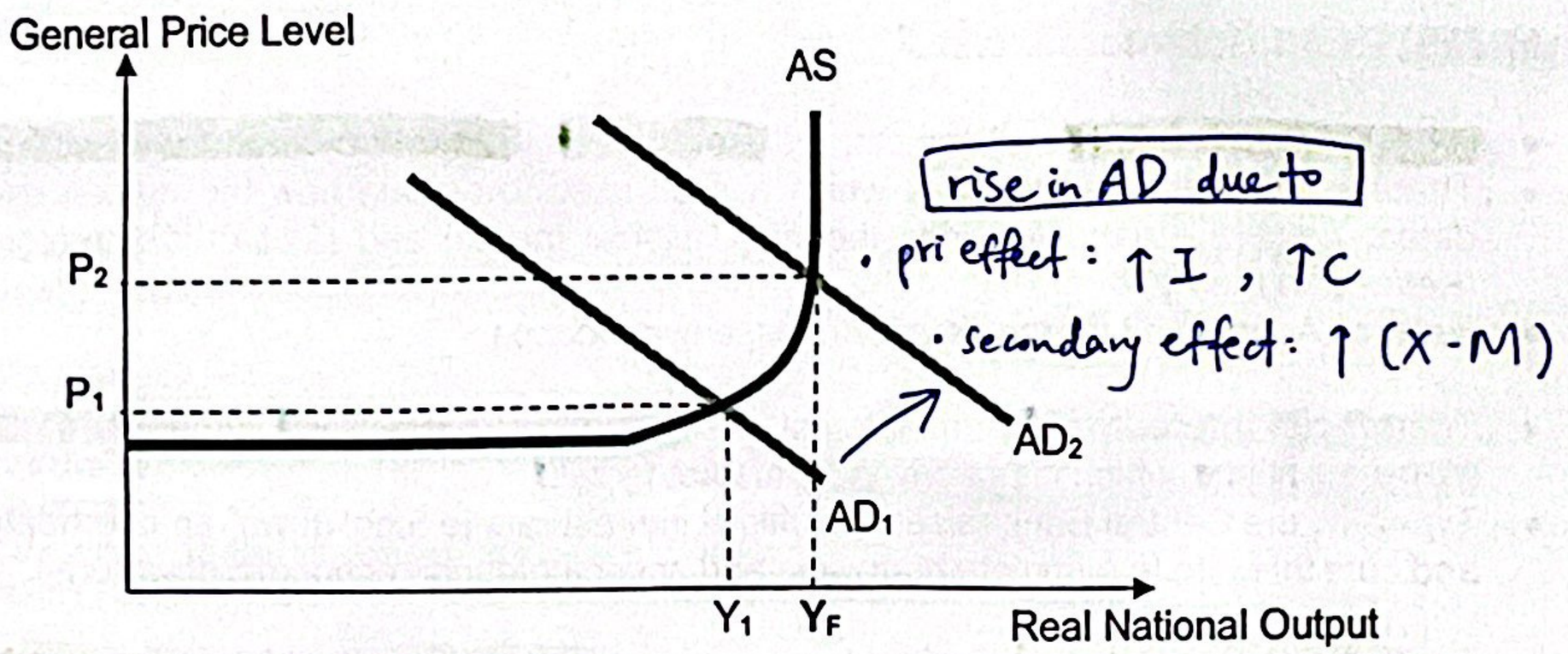
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7.2.2B.1 Expansionary Monetary Policy

- Primary effect: By lowering interest rates, the central bank reduces the cost of credit, thus causing firms and households to borrow more for investment (I) and consumption (C).
- Secondary effect: In addition, if there is free capital flow, the lowering of interest rates also raises the outflow and reduces the inflow of short-term capital (hot money), which raises the supply and reduces the demand for the domestic currency in the foreign exchange market.
- This causes the currency to depreciate which raises the demand for exports (X) and causes domestic firms and households to switch from more costly imports (M) to relatively cheap domestically produced goods. These changes are reflected by a rise in net exports (X-M) component of AD.

Figure 1: Expansionary Monetary Policy



- As the C, and I, (X-M) components of AD rise, output, and income will also rise. Households will spend part of the additional income causing consumption to rise further. However, as some of the income is saved, taxed, or spent on imports, each additional round of consumption will become increasingly smaller. The cycle stops when the rise in income induced consumption becomes negligible.
- Through the above multiplier process, national income and output rises several times more than the initial rise in AD.
- Eventually AD_1 shifts to AD_2, causing general price level to rise from P_1 to P_2 and real national output and income to rise from Y_1 to Y_F.
- As output rises, firms will need to hire more workers, thus causing demand deficient unemployment to fall.

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Limitations and Trade-offs

(1) Interest insensitivity

- During an economic downturn, **economic outlook is weak** as firms are pessimistic regarding future business opportunities while households are worried about job losses and reduced wages
- Even with lower interest rates, most firms and households will still be unwilling to borrow for investment and consumption as they are not confident of paying back their loans in the future.

(2) Inability and unwillingness of commercial banks to lend

- During an economic downturn many firms and households will face financial difficulties and are hence unable to repay their loans and interests on time.
- Such non-performing loans deprives commercial banks of funds, which then limits their ability to make new loans to other firms and households.
- Commercial banks are also unwilling to lend money to struggling debt-ridden firms and households as they are perceived to have potentially high default risk.

Credit Crunch during the Financial Crisis

In the aftermath of the sub-prime mortgage crisis in 2007, many banks in USA were saddled with non-performing loans because borrowers defaulted. Similarly, in Japan when the property bubble burst in the late 1990's, some big Japanese banks went bust and many were saddled with bad debts. In such a scenario, the banks do not have adequate liquidity to provide loans, even when interest rates or cost of borrowing is low. Many households and firms were also unable to borrow as they were highly in debt that they were not considered credit worthy to banks which are generally reluctant to lend to them for fear of possible default.

(3) Zero lower bound

- It is traditionally believed that nominal interest can at most be reduced to zero, after which there is no further room for interest rate to be cut.
- Economist have thus assumed that there is a natural zero lower bound for interest rate reduction which limits the use of interest rate based monetary policy.
- For example, The US Federal Reserve kept the federal funds rate, a benchmark for interest rates on a variety of consumer and business loans, at historic lows near zero from December 2008 till December 2015. This made it cheaper for banks to borrow money, which helped stimulate the US economy.

Negative Interest Rates

In recent years, central banks of Japan, the EU, Sweden, Denmark and Switzerland have been setting negative interest rates i.e. depositors may have to pay to keep their money in the bank and those who purchase and hold government bonds to maturity will make losses. The intention is for them to withdraw and spend on goods and services, boosting growth. However, growth remains weak and deflation remains a threat in these countries so there is limited evidence to show that negative interest rates can do much to stimulate these economies.

(4) Crash in property and stocks markets

- Instead of borrowing for consumption and investment, low interest rates often encourage firms and households to borrow for **speculating in property and stocks.**
- This creates **asset bubbles** as stock and property prices balloon over a short space of time.
- Not only do such bubbles cause residential and commercial property to become increasingly less affordable to genuine home buyers and businesses, they may also trigger another round of economic downturn should such bubbles eventually burst resulted a collapse of prices in the property market.

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- The resulting crash in stock and property prices will not only deter consumption and investment due to falling wealth and economic confidence, but also due to the debt and cash-flow difficulties faced by those who had speculated in such assets.

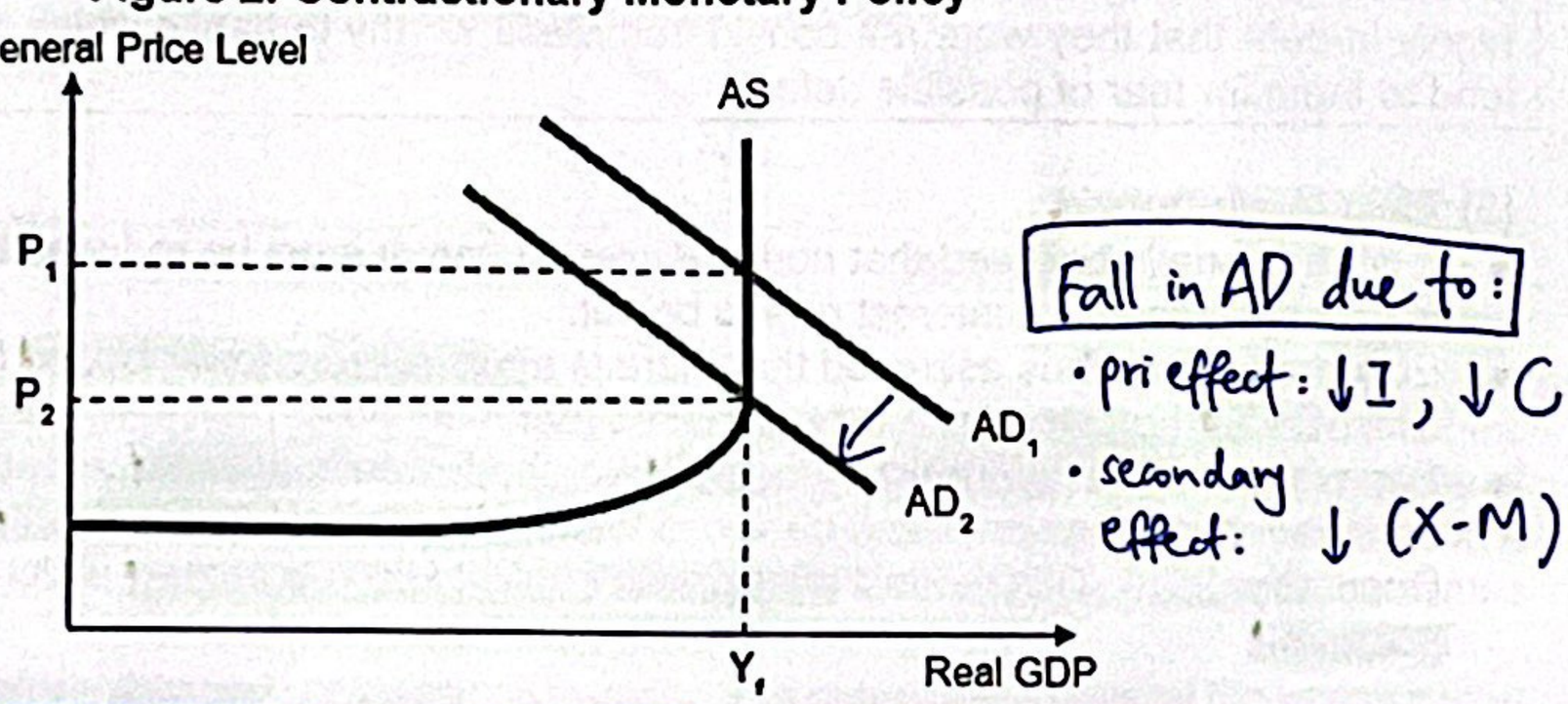
(5) Demand-pull inflation

- In theory, if the central bank were to lower interest rates too aggressively, this might **over stimulate the economy** and cause excessive demand-pull inflation.
- In reality, such actions are unlikely as central banks are typically quite cautious and will only cut interest rates gradually in response to economic data like growth and unemployment, which are typically consolidated and released on a quarterly basis.
- Nevertheless, the extra money created will eventually generate inflationary pressures when economic recovery occurs.

7.2.2B.2 Contractionary Monetary Policy

- Primary effect: By raising interest rates, the central bank raises the **cost of credit**, thus causing **firms and households** to **borrow less for investment (I)** and **consumption (C)**.
- Secondary effect: In addition, if there is free capital flow, the higher interest rates will **reduce the outflow** and **increase the inflow** of **short-term capital (hot money)**, which **reduces the supply** and **raises the demand** for the **domestic currency** in the foreign exchange market.
- This causes the currency to **appreciate** which **lowers the demand for exports (X)** and causes **domestic firms** and **households** to **switch from locally produced goods** to **cheaper imports (M)**. These changes are reflected by a **fall** in **net exports (X-M)** component of AD.

Figure 2: Contractionary Monetary Policy



- As the C, and I, (X-M) components of AD fall, output, and income will also fall. Households will cut back on consumption. However, as some of the income is saved, taxed, or spent on imports, each additional round of reduced consumption will become increasingly smaller. The cycle stops when the fall in **income induced consumption** becomes negligible. As the **autonomous components**, C, I and (X-M) of AD falls, **nominal income** will also fall causing households to cut back on induced consumption.
- Through this **multiplier process**, nominal income and output will fall by a multiple of the initial fall in AD.
- AD_1 eventually shifts to AD_2, causing general price level to fall from P_1 to P_2 with real national output remaining unchanged at Y_F.
- Although the diagram shows a fall in general price level, governments in reality do not aim for deflation as this is detrimental to the economy. Their aim is to instead lower inflation rates to below 2% or 3%, (depending on their target level) so that the positive effects of low inflation can be reaped while the adverse effects of high inflation can be avoided.
- So instead of reducing AD, contractionary monetary policy aims to **reduce the rate of increase in AD.**

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Limitations and Trade-offs

(1) Interest Insensitivity

- During an economic upturn, economic outlook is highly positive as firms are optimistic about future business opportunities while households are expecting higher income and better job opportunities.
- Even with higher interest rates, firms and households may still want to borrow for investment and consumption as they are confident of being able to pay back their loans in the future.
- Also, during an economic upturn, loan default rates tend to be low, hence banks tend to be more willing to take risks and lend to borrowers which are financially less stable.
- Banks may tend offer promotions like the giving of freebies and cashback to entice borrowers, which makes borrowers more willing to take up loans despite having to pay higher interest rates.

(2) Crash in property and stock markets

- Economic booms are often accompanied by rising property and stock prices as rising incomes and economic confidence creates greater ability and willingness for firms and households to speculate in such assets.
- Raising interest rates to curb borrowing for consumption and investments will also curb borrowing for such asset speculation.
- This might cause the bubbles in these asset markets to burst, which can trigger and economic downturn if stock and property prices were to crash.

(3) Demand-deficient unemployment

- If the central bank raises interest rates too aggressively, this may cause AD to fall excessively.
- The economy may then face a 'hard landing' where growth rates plunge, causing demand deficient unemployment.

7.2.2C Managing EXCHANGE RATE (Singapore Context)

- Most countries rely on interest rate or bank liquidity to conduct monetary policy.
- The management of exchange rate is often regarded as a policy by itself and is not used in the name of monetary policy.
- However, unlike most countries that manage interest rate or bank liquidity, Singapore's Central Bank, The Monetary Authority of Singapore (MAS) instead manages its exchange rates as a form of monetary policy and targets a **gradual and modest appreciation of the Singapore dollar**.
- The primary objective of MAS's exchange rate management is to promote **price stability** as a sound basis for actual and potential economic growth.

7.2.2C.1 Reasons for Singapore's Choice of Managing Exchange Rates

(1) To fight inflation (MAIN Objective)

- Given Singapore's high import dependence, due to a **lack of natural resources**, large and sudden increases in prices of imported inputs will result in severe **imported inflation**.
- By managing of exchange rates, MAS is thus able to directly influence the costs of imported inputs, hence prevent or **reducing imported inflation**.
- Revaluing the Singapore Dollar (SGD) also helps to dampen net exports and AD thus **curbing demand pull inflation** as well.
- Inflation is thus kept low and stable which promotes savings and investments, thus providing the foundation for **strong actual and potential economic growth.**

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(2) To fight recession and unemployment (gradual and modest appreciation)

small & open economy

- With a **small population** and hence **small domestic market**, Singapore is **highly export dependent** as it has to **rely on external demand** to drive the economy.
- A **large and sudden appreciation** of the Singapore Dollar (SGD) can **destroy Singapore exports competitiveness**, thus causing **AD to fall substantially**, resulting in **recession** and **demand deficient unemployment**.
- By managing the SGD, MAS is able to **prevent the SGD** from **appreciating to quickly** thus helping to **stabilize economic growth** and **employment.**

(3) Trilemma of international finance

- Due to her choice of being an **international financial center** and to **depend on foreign direct investments** for economic growth and development, Singapore needs to **allow for free international capital mobility.**
- **Without** free capital mobility, **foreign investors** will be **unwilling** to place their **funds or build production facilities in Singapore** if they are **not fully assured** of being **able to withdraw their funds and profits** without restriction.
- However, it is **not possible** to have **free capital mobility** and **manage both interest rates** and **exchange rates** at the **same time** (this is known is the **impossible trinity** or the **trilemma of international finance**).
- Given that Singapore's **external demand** is **much larger** than **domestic demand** and also her **high import dependence**, its total trade i.e. the value of exports plus imports is about 3 to 4 times of its GDP, MAS has decided to **manage exchange rates** rather than interest rates.

Explanation of the trilemma of international finance

- Suppose Singapore has free international capital mobility and tries to manage both interest rates and exchange rates.
- If MAS were to **raise interest rates,** hot money will flow in causing the SGD to appreciate.
- If MAS wants the SGD to remain unchanged, it will need to sell SGD in the foreign exchange market.
- Foreigners would buy SGD denominated assets sold by Singapore's banks, firms or households, this means that additional SGD are being injected into domestic circulation through the foreign exchange market.
- Domestic money supply will rise which will then cause domestic **market interest rates to fall.** (See Appendix 2 if you want to know why increase in money supply reduces market interest rates – Liquidity Preference Theory)
- We can therefore see that with free capital mobility, it is impossible for MAS to change its interest rate and expect exchange rates to remain stable and vice versa.

- Only countries like China which impose capital controls can manage both interest and exchange rates independently.
- Other economies like the US and the EU choose to manage interest rates and forgo control over exchange rates as they also allow for free capital mobility.
- For these large economies, managing interest rates is more important than exchange rates as their import dependence is low and internal demand is substantially larger than external demand.

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Trade-off of Appreciation (but mitigated)

- If there is a 10% appreciation of the SGD, this will initially cause the prices of Singapore's exports to rise by 10% making them relatively expensive.
- However, if 80% of the cost of such exports come from imported components, overall production costs and hence export prices will subsequently fall by ~ 8%.
- Nevertheless, export prices are still overall ~ 2% higher than before the SGD appreciation.
- Hence, the reduction in cost of imported inputs will not entirely offset the initial rise in export prices unless import cost is 100% of the total cost of production, which is impossible as there will always be domestic value added in any good that is produced. As a result, Singapore has to invest in technology, training to improve productivity that could reduce other costs effectively and offset the rise of export price due to appreciation.

Does MAS devalue its currency?

- In general, MAS **does not devalue** the SGD, **unless** there is a **severe economic downturn.**
- As Singapore's exports has very high import content, any depreciation of the SGD will have limited impact on boosting export competitiveness as production cost will rise substantially, **partially** offsetting the gains enjoyed from the initial depreciation.
- On the other hand, the trade-off experienced by households in terms of escalating prices of imported food, fuel and consumer goods is high.
- Hence the benefit in terms of improved export competitiveness gained from devaluing the SGD usually does not outweigh the trade-off incurred in terms of imported inflation.

Mechanics of Singapore's managed float exchange rates
Refer to Section 7.3.3 for illustration.

- MAS manages the SGD by **setting a band** which the Singapore dollar can fluctuate within.
- It will intervene to prevent the SGD from fluctuating out of the band.
- MAS thus operates a **managed float** rather than a fixed exchange rate regime.
- This band is **not publicly disclosed** so as to deter speculation from foreign currency traders.

- To enable the SGD to **appreciate gradually,** MAS typically allows the **band** to **slope gently upwards**, where the slope can be altered to quicken or reduce the rate of appreciation.
- When **economic performance or outlook is weak**, the **band** is often kept **horizontal** so that there is an overall **zero appreciation** of the SGD to help maintain short run export competiveness.
- During periods of **high economic volatility** the band can be **narrowed** or **widened** depending on whether MAS believes there is a need to protect the economy and its ability to do so without excessively depleting its foreign exchange reserves.

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Appendix 1: Commercial Banks and Credit Creation

Commercial banks are privately owned profit-seeking institutions whose main activities are to **accept deposits** and **make loans**, which thus provides them the power to create money. Although commercial banks cannot issue currency and notes, they are able to influence money supply.

Money supply consists of notes and coins in circulation and bank deposits, which are created by the **commercial banks**.

When a bank makes a loan, the amount is credited into the borrower's account. A deposit is created and the money supply increases by the **amount of the loan.**

The ability of the banking system to create money is based on the fact that at any moment in time, most of the banks' depositors do not withdraw all of their deposits at the same time. People who deposit money with a bank for safekeeping will withdraw them only when they need the funds. The bank must have enough cash at hand (also known as cash reserves) to meet such withdrawal demands so that depositors will have confidence in the viability of the bank. However, these reserves are but a small fraction of its deposits. This is sometimes known as the **Fractional Reserve Banking.**

To safeguard customers' interests as well as reduce the likelihood of a **bank run**, the monetary authorities or central banks require banks to keep a fraction of their deposits in cash reserves.

The *cash ratio*, is the ratio of cash reserves required to back up the total deposits of the bank. It is expressed as follows:

$$\text{Cash Ratio} = \frac{\text{Cash Reserves}}{\text{Total Deposits}}$$

Thus if the cash reserve ratio is 10% and a bank has $10 million of deposit, it must have a cash reserve of $1 million.
The central bank can vary the cash reserve ratio to increase or decrease the credit-creating capacity of commercial banks.

Illustration of Credit Creation

	New Deposits	New Loans	Cash Reserves
	$1000	$900	$100
	$ 900	$810	$ 90
	$ 810	$729	$ 81
	$ 729	$656.10	$72.90
	:	:	:
Total	$10,000	$9,000	$1,000

When a bank receives a $1,000 cash deposit, it will keep $100 as its cash reserves and lend out $900. Suppose the loan of $900 is withdrawn and re-deposited into another bank. This bank now gains another $900 cash reserves and is able to lend out 0.9 of it. This is equivalent to $810. If this $810 is again drawn out and is re-deposited into another bank, that bank will again be able to lend out 0.9 of the increase in reserves. That is, it can lend out $729. The process will continue for many rounds. When the process has worked itself out, total deposits in the banking system will be:

$$\text{Total deposits} = \$[1000 + (0.9)1000 + (0.9)^2 1000 + (0.9)^3 1000 + ...] = \$10{,}000.$$

The $1,000 increase in reserves cheques is able to support demand deposits up to 10 times its size (with a cash ratio of 10%).

Mathematically, the credit creation formula is:

$$\text{Total deposits} = \frac{1}{r} \times C$$

Where r = fixed cash ratio and C = initial cash deposit

The extent of credit creation thus depends on:

- **Opportunities for investment and the level of consumer confidence:** This affects firms' and households inclination to take up loans to do business or finance consumption of durables.
- **Availability of collateral assets:** Banks take risk in granting loans. To reduce the risks and to protect themselves against default, most banks require some kind of collateral security which may be turned into cash if the loan is not repaid.
- **The amount of cash deposits:** Banks are limited by the amount of cash deposits they can attract as they can only lend more if they have more cash to serve as a base.
- **The cash reserve ratio:** The cash reserve ratio puts a ceiling on the bank's expansion of credit. Central banks usually mandate a certain reserve ratio to prevent commercial banks from unexpectedly running out of cash to meet withdrawals, which can trigger bank runs and destroy confidence in the banking system.

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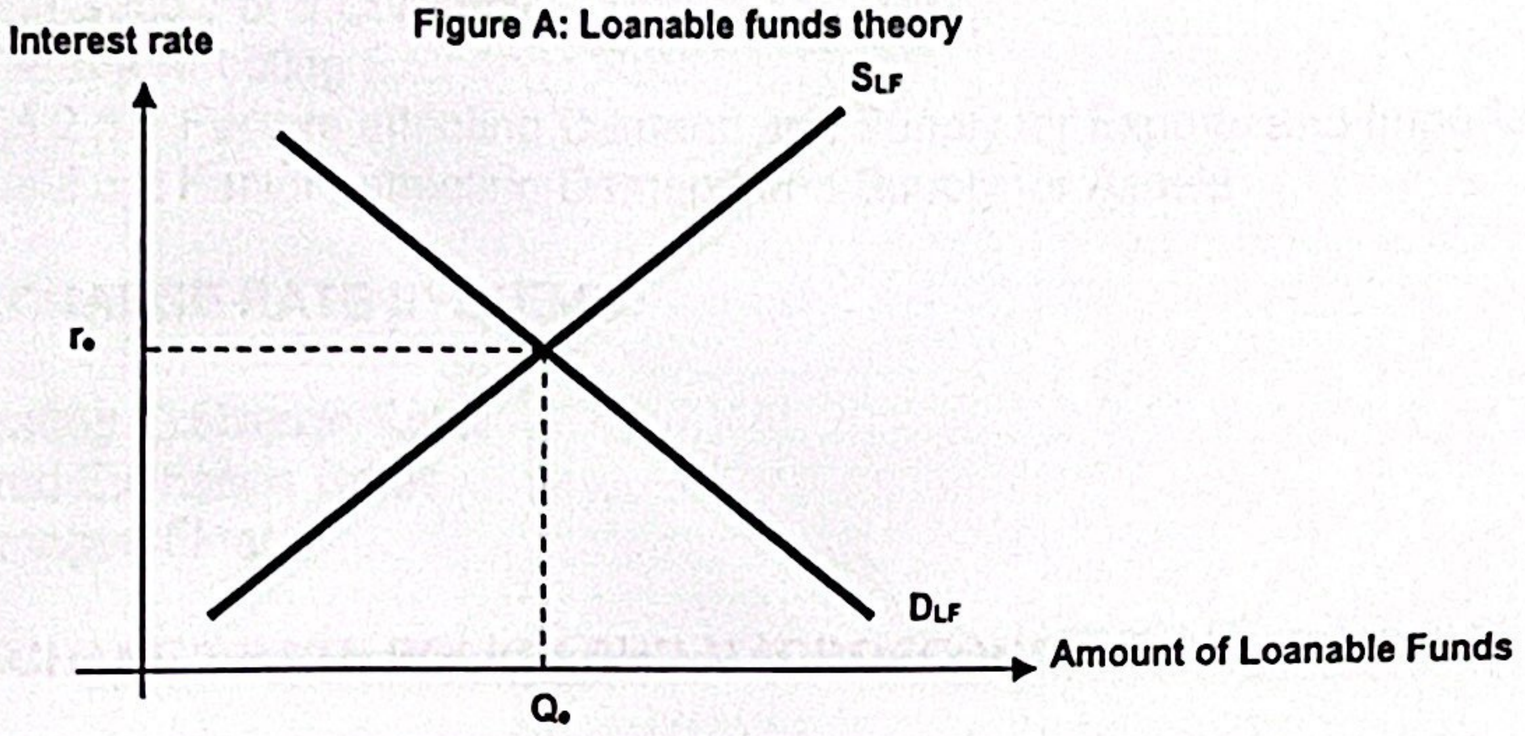
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Appendix 2: Loanable Funds and Liquidity Preference Theories

Loanable Funds Theory

- The market interest rate according to the Classical loanable funds theory, is set by the demand for and supply of loanable funds, which refer to funds that is available for loans.
- The demand for loanable funds is determined by the demand for loans by households for consumption, business for investments and the government to finance a budget deficit
- The supply of loanable funds is determined by the level of savings by households, firms and the also the government (when it runs budget surpluses)

Figure A: Loanable funds theory

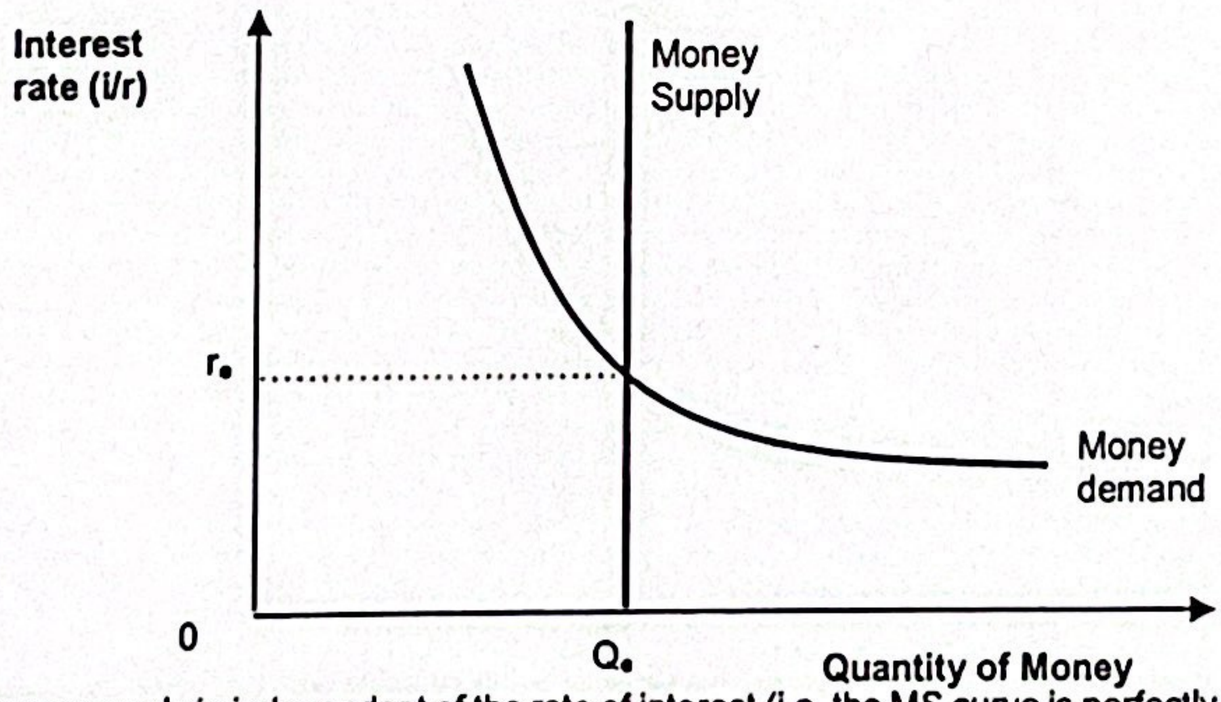


- With reference to figure A, the market interest rate, r, is determined by the intersection of the demand curve and supply curve for loanable funds.
- Interest rate will change when demand or/and supply of loanable funds change.

Liquidity Preference Theory

- This theory was formulated by the famous economist John Maynard Keynes.
- Keynes' key idea was that interest rate is determined by the demand to hold cash balances, i.e. the liquidity preference (LP) or money demand and the money supply (MS).

Figure B: Liquidity preference theory



- In this model, the money supply is independent of the rate of interest (i.e. the MS curve is perfectly interest inelastic or vertical), whereas, the money demand is inversely related to the interest rate
- The market interest rate is determined at the point of intersection of MS and LP curves.
- Interest rate will change when demand or/and supply of money change.

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Part 3: Exchange Rate Determination & Policy

SECTION OUTLINE

7.3.1 INTRODUCTION

7.3.2 DETERMINATION OF EXCHANGE RATE

7.3.2.1 Exchange Rate Equilibrium
7.3.2.2 The Demand for a Currency
7.3.2.3 The Supply of a Currency
7.3.2.4 Factors Affecting Exchange Rate
7.3.2.3.1 Factors affecting Demand and Supply for Exports and Imports
7.3.2.3.2 Factors affecting Demand and Supply for Assets

7.3.3 EXCHANGE RATE SYSTEMS

7.3.3.1 Floating Exchange Rates
7.3.3.2 Fixed Exchange Rates
7.3.3.3 Managed Float

7.3.4 EXCHANGE RATE POLICY AND MACROECONOMIC STABILITY

7.3.4.1 Reducing Inflation
7.3.4.2 Boasting Growth and Reducing Unemployment & Trade Deficit

References

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7.3.1 INTRODUCTION

- The exchange rate shows how much foreign currency is required to exchange for a unit of local currency, e.g. S$1: £0.55 and S$1: USD$0.75 where the S$ is the domestic currency.
- As the exchange rate shows **price of the domestic currency in terms of foreign currency**, it can be used to measure the **external value** of a country's currency.

Different Types of Exchange Rates

Nominal exchange rate	• It is the exchange rate based on the nominal value of the currency, before making adjustment to price changes.
Bilateral exchange rate	• It refers to the exchange rate between the currencies of two countries. **Table 1: Value of Singapore Dollar (per unit of Euro, Pound and US Dollar)** * Yearly, monthy and weekly figures are end period values. (https://secure.mas.gov.sg/msb/ExchangeRates.aspx)
Trade weighted exchange rate / Nominal Effective Exchange Rate (NEER)	• It measures the value of a currency against a 'basket' of currencies of its major trading partners. • A weight is given to each of these currencies in the basket and the size of these weights depends on the relative importance of that country as a trading partner. • For example, if Singapore total trade with Malaysia is 15%, China 12% and US 10%, then the weighting of Ringgit, Chinese Yuan and the US dollar would be 15%, 12% and 10% respectively in trade weighted exchange rate

End of Period	S$ Per Unit of Euro	S$ Per Unit of Pound Sterling	S$ Per Unit of US Dollar
2004	2.2243	3.1455	1.6338
2005	1.9754	2.8717	1.6642
2006	2.0176	3.0102	1.5336
2007	2.1252	2.8798	1.4412
2008	2.0258	2.0769	1.4392
2009	2.0163	2.2541	1.4034
2010	1.7120	1.9887	1.2875
2011	1.6835	2.0048	1.3007
2012	1.6151	1.9752	1.2221
2013	1.7452	2.0852	1.2653

Foreign exchange is required for **international trade and finance:**

- To buy imports and overseas assets, the residents of a country will need the currency of the country which the imports or assets come from.
- Conversely, if foreigners want to buy exports or assets of a country, they will need the domestic currency of that country.
- Exchange rates are therefore important because it shows how much one currency can be exchanged for another in order to facilitate international trade and finance.

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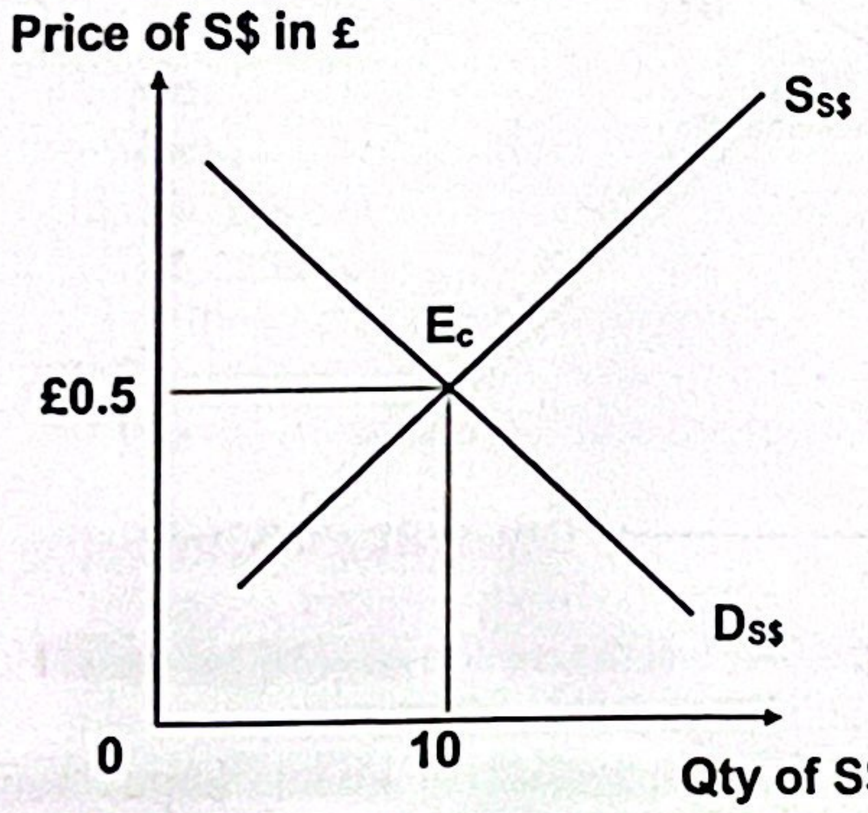
7.3.2 EXCHANGE RATE DETERMINATION

- The determination of a currency's exchange rate depends on **demand and supply** of that **currency** in the **foreign exchange (FOREX) market.**
- When a currency depreciates / appreciates
  - Prices of exports and domestic assets in local currency will be unchanged but their prices in foreign currencies will be lower / higher.
  - Prices of imports and foreign assets in foreign currency will be unchanged but prices in local currency will be higher / lower.
- In the following explanations, we illustrate the value of S$ (which is domestic currency) in terms of £, i.e. pound sterling (which is the foreign currency).

7.3.2.1 Exchange Rate Equilibrium

- As with the determination of equilibrium prices of other goods and services, the equilibrium exchange rate (ER) of a currency is obtained at the intersection of its demand and supply curves.

Figure 1a: Equilibrium exchange rate of S$ against £

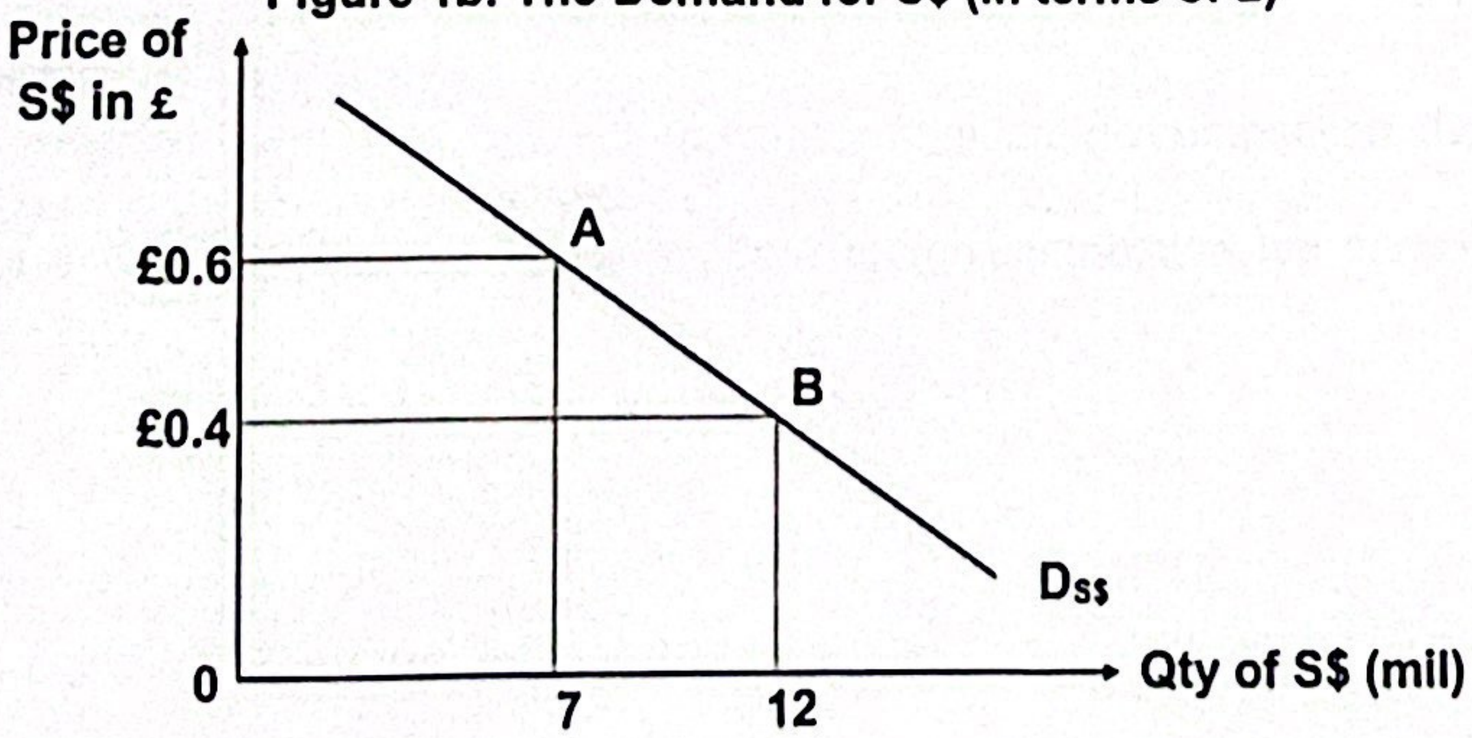


- We see that the equilibrium exchange rate of S$ in £ is given by S$1= £0.50 in Figure 1a.
- At these equilibrium, there is neither surplus nor shortage of S$ in the FOREX market.

7.3.2.2 The Demand for a Currency

- The demand for a country's currency in the FOREX market is **derived** from foreigners' demand for the country's **exports** (of both goods, services) and **assets** (both **physical assets** like property and **financial assets** like shares). Eg. If an MNC wishes to build a factory in SG, they will demand SGD in order to pay local labour, materials, etc

Figure 1b: The Demand for S$ (in terms of £)



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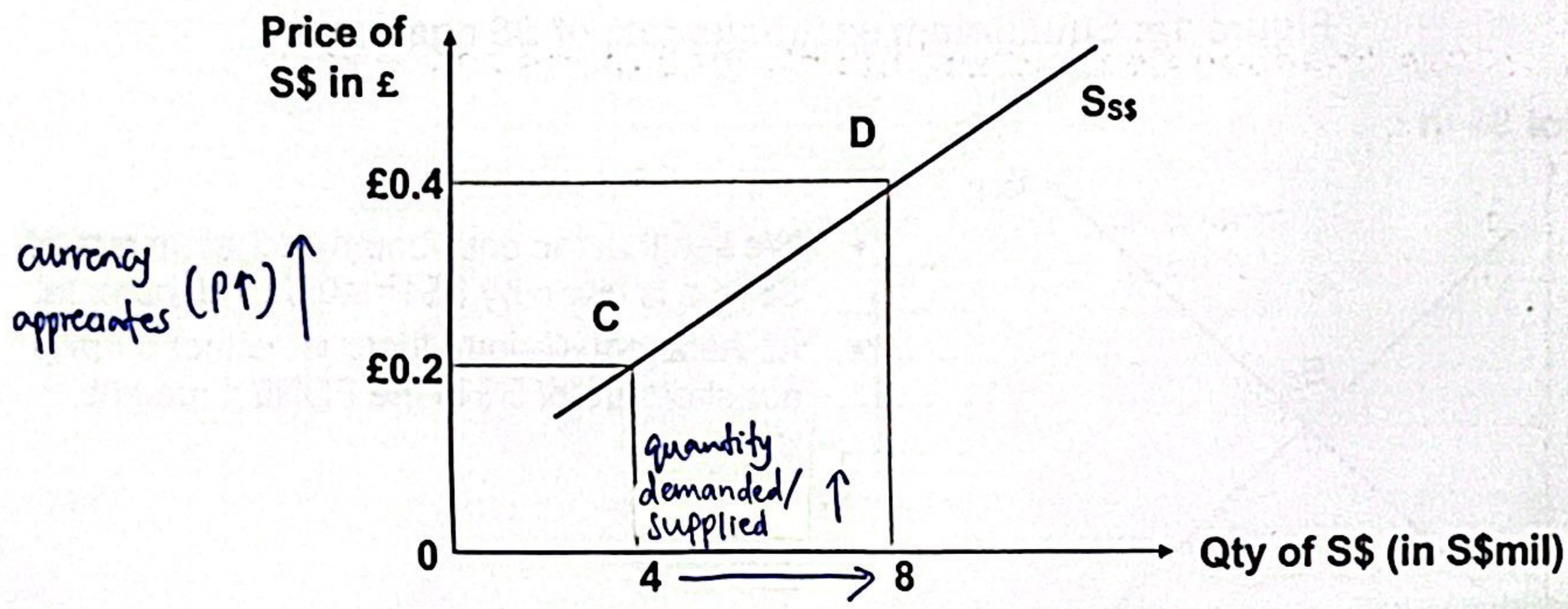
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- From Figure 1b, a fall in the price of the S$ from £0.6 to £0.4, will cause the quantity demanded for S$ to rise from S$7 mil to S$12 mil i.e. movement from point A to B.
- This means that when the S$ depreciates, Singapore's exports and assets will become cheaper to British residents, thus raising their quantity demanded of such exports and assets, which will then raise their quantity demanded for S$ in the FOREX market.
- Conversely, if the S$ appreciates, then Singapore's exports and assets will become more expensive to British residents, hence lowering their quantity demanded for Singapore's exports and assets, which will then lower their quantity demanded for S$ in the FOREX market.
- Thus demand curve for S$ in the FOREX market is therefore downward sloping.

7.3.2.3 The Supply of a Currency

- The **supply for a country's currency** in the FOREX market is **derived** from the **demand** by **domestic residents** for **foreign imports and assets.**

Figure 1c: The Supply for S$ (in terms of £)



- From Figure 1c, an **appreciation of the S$** from £0.2 to £0.4, will cause the **quantity supplied** for **S$ to rise** from S$4 mil to S$8 mil i.e. movement from point C to D.
- When the **S$ appreciates, British imports and assets** will **become cheaper for Singaporean** residents, thus **raising their quantity demanded** for such **imports and assets.**
- Singapore residents will then want to **change more S$ for £,** which will **raise the quantity supplied of S$** in the FOREX market.
- Conversely, if the S$ depreciates, British imports and assets will become more expensive for Singaporean residents, thus lowering their quantity demanded for such imports and assets.
- Singaporean residents will then want to change less S$ for £ which will then lower the quantity supplied of S$ in the FOREX market.
- Thus supply curve for S$ in the FOREX market is upward sloping.

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7.3.2.4 Factors Affecting Exchange Rates

- Diagrammatically, the equilibrium exchange rate changes when the demand or supply of the country's currency in the FOREX market shifts.
- The demand and supply of a country's currency are affected by changes in international transactions, which includes: trade and capital flow. Any factors that affects the demand and supply of the country's exports and imports, FDIs and short-term capital flow will affect exchange rates.
- **A rise in foreign demand for a country's exports and assets will raise the demand for its currency in the FOREX market.**
- **A rise in a country's demand for foreign imports and assets will raise the country's demand for foreign currency, and hence raise the supply of the country's currency in the FOREX market.**

Note: *It is very important to explicitly explain the last two points at the start of your question response so that such analysis does not have to be repeated again and again when you are explaining the factors affecting exports, imports and assets.*

7.3.2.4.1 Factors Affecting Demand and Supply for Exports and Imports

- **Income**
  - Rising income in other countries will lead to a rising demand for a country's exports.
  - Rising income in a country will instead lead to rising demand for foreign imports.
  - The assumption here is that the income elasticity of imports and exports are overall positive i.e. the goods are normal goods.
  - The higher the magnitude of the income elasticity the larger the change in demand.
  - The main indicator of income is GDP growth.

- **Price of related goods**
  - Relative inflation rates
    - If a country's inflation rate is higher than that of other countries, its
      - Exports will become relatively expensive causing export demand to fall.
      - Imports will be relatively cheap causing import demand to rise.

- **Taste and preference**
  - If other countries develop an increased preference for a country's goods and services, the latter's export demand will rise.
  - If a country develops increased preference for other countries' goods and services then the former's import demand will rise instead.
  - Besides unexplainable fads and trends, the main factor affecting preferences is product quality, which is often most affected by technological improvements.

- **Protectionism (government policy)**
  - If other countries were to protect their own industries from foreign competition, the demand for a country's exports to these countries will fall.
  - If a country were to protect its own industries from foreign competition, her demand for foreign imports will fall.

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7.3.2.4.2 Factors affecting Demand and Supply for Assets

- **Short term financial assets (hot money)**

  - The main types of financial assets are deposits, bonds and equities (aka stocks and shares) which are affected by changes in interest rates, stock market performance and capital controls
  - Interest rates
    - A rise in local interest rates will raise foreign demand for a country's deposits & bonds
    - A rise in foreign interest rates will raise a country's demand for foreign deposits & bonds
  - Stock market performance
    - A boom in the local stock market will raise foreign demand for its equities
    - A boom in foreign stock markets will raise local demand for foreign equities
  - Capital controls
    - Some countries impose capital controls to reduce capital flows as they can cause asset bubbles and large exchange rate fluctuations which can destabilize the economy
    - The impact on capital controls on the exchange rate depends on whether it is imposed on inflows or outflows, which vary depending on economic aims of the country
    - Controls on inflow will reduce the foreign demand for local financial assets while controls on outflows will reduce local demand for foreign financial assets

- **Long term physical assets**

  - The main types of physical assets are **properties** which can be industrial (e.g. factories), commercial (e.g. shopping mall) or residential (e.g. apartments) in nature and also **foreign direct investments** (e.g. production or retail facilities built or acquired by foreign firms)
  - Property market performance
    - A boom in the local property market will raise foreign demand for local properties
    - A boom in foreign property markets will raise local demand for foreign properties
  - Foreign direct investments (FDI)
    - FDI has two objectives (1) to sell goods and services to the domestic market and (2) to use the country to produce goods and services for export → usually to neighbouring countries if the MNC is a regional headquarter
    - Income and demographics are the main factors affecting the first objective e.g. high / rising GDP or population growth will attract more of such FDI
    - Economic competitiveness is the main factor affecting the second objective
      - Competiveness can be defined as the ability of a country to produce a product more cheaply or of better quality than other countries
      - Competitiveness varies depending nature of product
        - A labour abundant country will be more competitive in producing labour intensive goods like textiles
        - A capital, knowledge and technology abundant country will be more competitive in producing high end goods like high-tech components and complex services like R&D and financial intermediation
      - Factors which affect overall competitiveness include social, political and macroeconomic stability, and infrastructure like transport and telecommunications
    - Factors affecting FDI also affects the demand for properties
      - More inflow of FDI raises foreign demand for local industrial & commercial properties
      - As FDI usually requires some foreign workers like managers and engineers, this will also raise the demand for local residential properties

- **Protectionism (government policy)**
  - Government may want to protect local entities from foreign competition and thus prevent foreign purchases of businesses or properties, which will then reduce foreign demand for such local assets.
  - If foreign governments engage in such protectionism, then local demand for such foreign assets will fall instead.

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7.3.3 EXCHANGE RATE SYSTEMS

- There are in general three types of exchange rate systems / regimes
  - Floating exchange rate
  - Fixed exchange rate
  - Managed float or 'dirty float'

Note: A comparison of exchange rate systems is not required in the syllabus but knowing it will enhance your appreciation of how Singapore uses the managed-float exchange rate system.

7.3.3.1 Floating Exchange Rates

- The **floating** exchange rate system is also known as the **flexible** exchange rate system, and freely fluctuating exchange rate system.
- It is a system in which the rate of exchange of one country's currency is **determined freely by market forces** (i.e. no central bank intervention) as explained in the previous section.
- If the demand for the country currency rises / falls or the supply of its currency falls / rises, then the currency will **appreciate / depreciate.**

7.3.3.2 Fixed Exchange Rates

- Under the fixed exchange rate system, the government of the country fixes the official price of its currency in terms of other foreign currencies.
- Under this system, the government maintains the fixed exchange rate by buying or selling its currency in the foreign exchange market using foreign exchange reserves to exactly offset any changes in market demand and supply.
- Most countries in the world operated under this system from 1945 to 1972 where they pegged their currencies at fixed rates against the US dollar where the US dollar is in turn is pegged to gold at the rate of US$1 to 35oz of gold". (This was known as the **Bretton Woods** agreement).
- If prevailing market conditions change such that the current exchange rate is undesirably or unsustainable, the central bank can unilaterally **devalue or revalue** its currency against the USD

Table 2: Examples of fixed exchange rate regimes, 2017

Currency	Pegged Currency	Exchange Rate
Bruneian Dollar	S$	1S$ = 1B$
Hong Kong Dollar	US$	1US$ = 7.8 HK$
Saudi Arabian Riyal	US$	1US$ = 3.75 Riyal

7.3.3.3 Managed Floats

- When a central bank allows small fluctuations of its country's currency but steps in to prevent large fluctuations, such an exchange rate regime is known as a 'managed float' or a 'dirty float'.
- This system combines features of both floating and fixed exchange rate systems.
- The band for fluctuation is "undisclosed" to deter speculation.
- Singapore and more recently China are two countries that officially adopt a managed float exchange rate system.
- In reality, other than the US and the EU, all other countries do intervene on occasions (often secretly) to manage their currencies. This is evident as the central banks for all countries except for the US Fed and the European Central Bank do possess foreign exchange reserves.
- Such reserves are acquired when the central bank steps in to sell the domestic currency in exchange for foreign in order to depress its value.
- Such reserves are also required for the central bank to buy its domestic currency with foreign currencies in order to prop up its value.

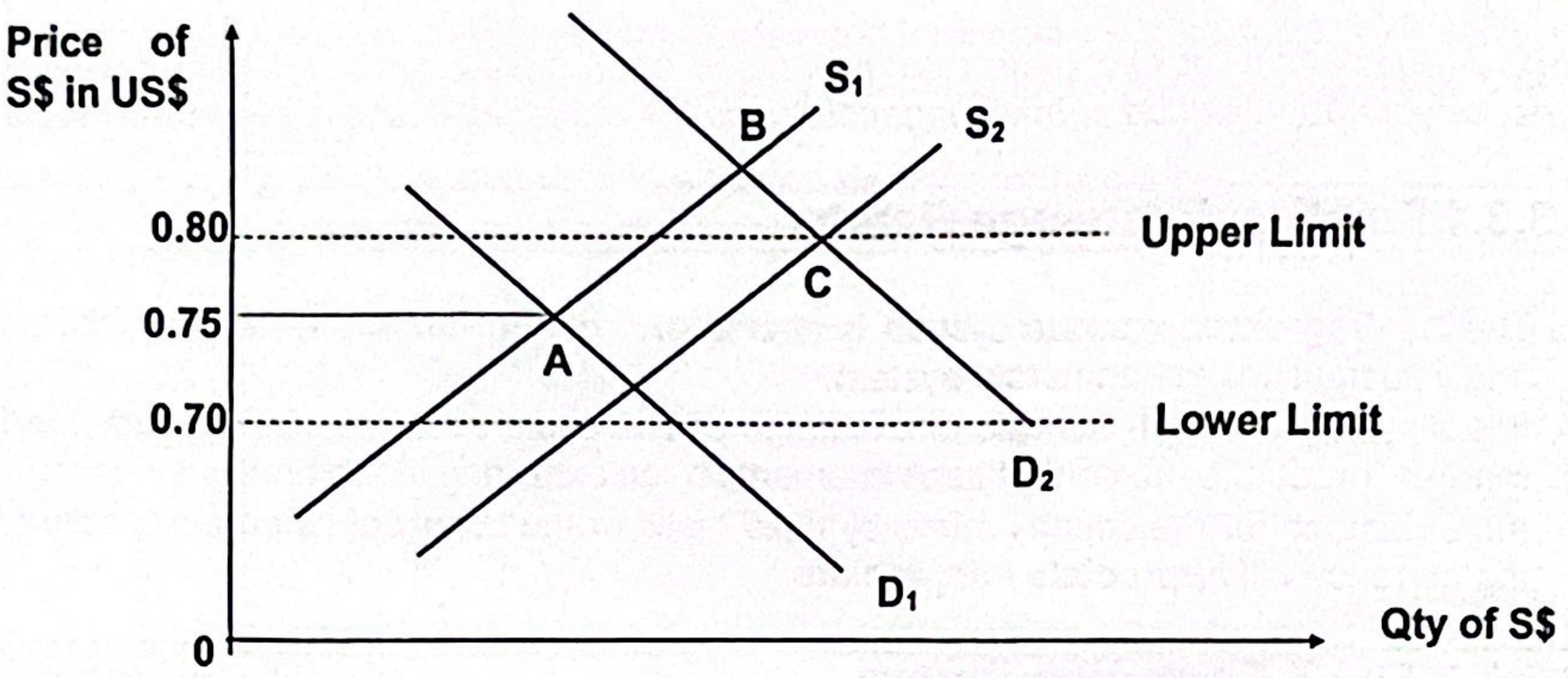
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How a managed float works?

- In a managed float, the central bank will set an **upper and lower limit** to which the exchange rate is allowed to fluctuate and it will intervene once the exchange rate moves beyond the band.

Figure 2: Exchange Rate Band System



Referring to Figure 2,

- The exchange rate of S$ against the US$ is set between US$0.80 and US$0.70, representing the lower and upper limits of the exchange rate band respectively.
- Initially, the exchange rate was S$1 = US$0.75, (point A).
- A rise in the demand for S$ causes it to rise in value to point B beyond the upper limit.
- The Monetary Authority of Singapore (MAS) intervenes by selling S$, thus increasing the supply from S_1 to S_2 and bringing the external value of S$ to a point such as C on the upper limit of the band.
- On the other hand, if supply increases substantially such that the exchange rate falls below the lower limit, MAS will step in to buy back S$ (↑Dd S$) till the exchange rate is on the lower limit of the band.

7.3.4 EXCHANGE RATE POLICY FOR MACROECONOMIC STABILITY

7.3.4.1 Reducing Inflation

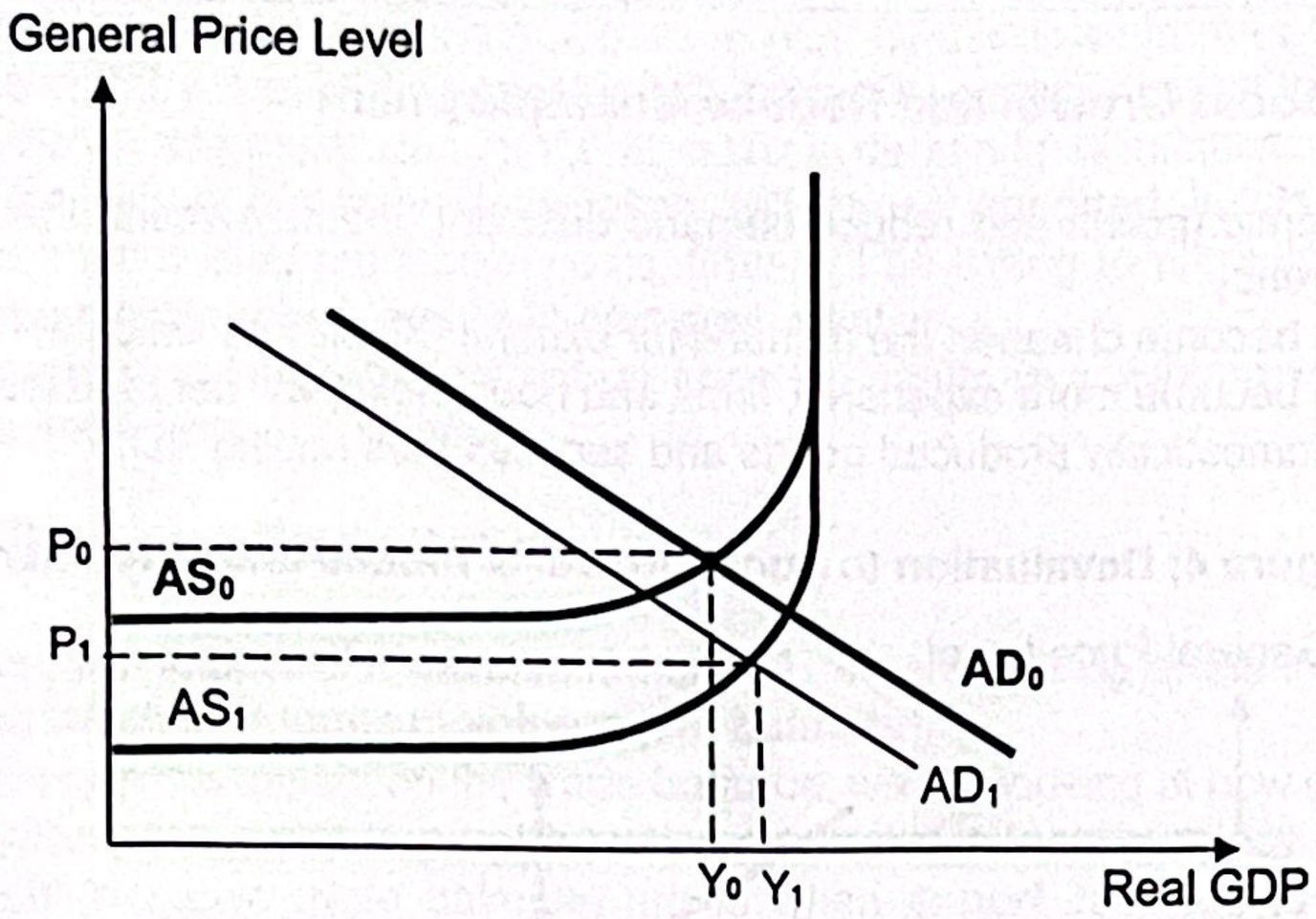
- To fight inflation, the central bank should intervene to revalue its currency
  - As exports become more expensive, the demand for exports falls which directly curbs AD.
  - As imports become cheaper, firms and households will demand less of domestically produce goods and services thus lowering AD as well.
  - The above changes are reflected by a fall in the net exports (X-M) component of AD.
  - Finally, as imported inputs become cheaper, average cost of production is reduced, so firms are willing to produce more, hence causing AS to shift downwards.

Note: *In general, exchange management is more about shifting AD rather than AS. Only in special cases where there is extremely high import dependence like Singapore, then the focus changes from managing AD to managing AS.*

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Figure 3: Revaluation to reduce inflation



- Referring to Figure 3, when AS_0 shifts to AS_1 and AD_0 falls to AD_1, GPL falls from P_0 to P_1
- While Figure 3 shows deflation (i.e. a fall in GPL), in reality, central banks aim to reduce inflation and not induce deflation which has serious adverse consequences on the economy.
- So what central banks aim to do is merely **dampen the growth in AD or reduce the rate at which the cost of imported inputs** are rising so that prices rise more slowly.

Limitations and trade-offs

- **Limited by FOREX reserves**
  - To revalue the currency, the central bank needs to use its foreign currency reserves to buy back the domestic currency in the foreign exchange market.
  - This policy cannot be sustained indefinitely as foreign reserves will eventually be depleted so it is at best a short-term solution.

- **Low price elasticity of exports**
  - If the price elasticity of the country's exports is low, then the **extent** to which a currency revaluation can curb the demand for exports will be low as well.
  - The low price elasticity could be due to limited close substitutes produced by other countries, the exports having a high degree of necessity, or forming a small proportion of income for consumers or total production costs for producers.

- **Lack of import substitutes**
  - If there is a lack of import substitutes, there will be limited switching from domestically produced to imported goods and services following a currency revaluation.
  - The lack of such expenditure switching will reduce the ability of a revaluation in curbing AD.

- **Adverse impact on growth and employment**
  - In figure 3, real output rises from Y_0 to Y_1 because the rise in SRAS is more than the fall in AD, hence there is likely to be a positive impact on growth and employment
  - However if AD falls more than the rise in SRAS, then real output will fall, which suggests that a currency revaluation can instead have an adverse effects on growth and employment.
  - This may occur if the demand for the country's exports and/or imports are highly price elastic and/or when imported inputs constitute a small proportion of total costs.

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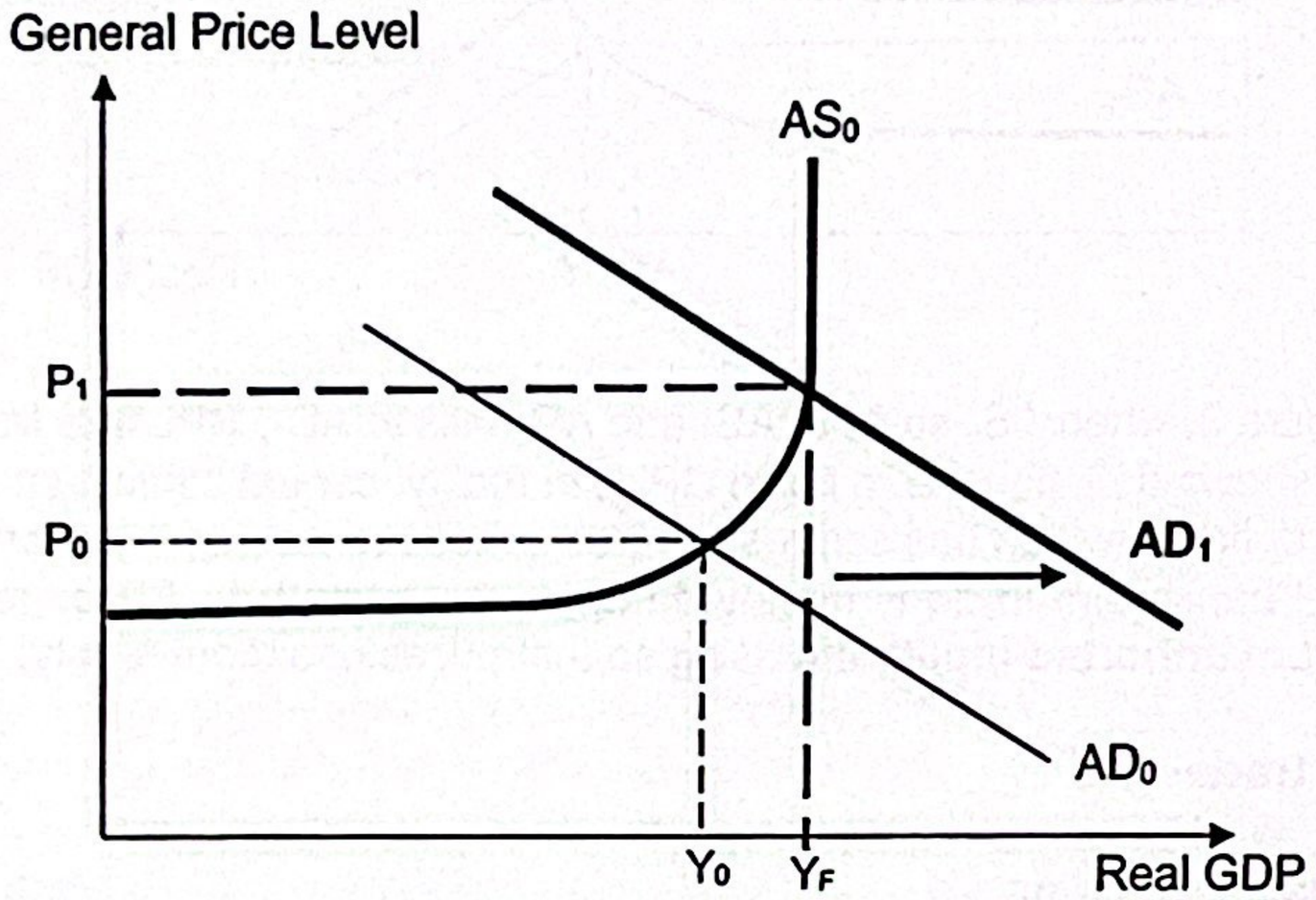
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7.3.4.2 Boosting Growth and Reducing Unemployment & Trade Deficit

Devaluation to Boost Growth and Reduce Unemployment

- To boost economic growth and reduce demand deficient unemployment, the central bank may devalue its currency.
  - As exports become cheaper, the demand for exports (X) will rise which will directly boost AD.
  - As imports become more expensive, firms and households will demand less imports (M) and switch to domestically produced goods and services thus raising AD.

Figure 4: Devaluation to boost growth & reduce unemployment



- With reference to Figure 4, when AD_0 rises to AD_1, real national output rises from Y_0 to Y_F.
- The resulting economic growth will generate more employment, thus causing demand deficient unemployment to fall.

Limitations and trade-offs

- **Low price elasticity of exports**
  - If the price elasticity of the country's exports is low, then the **extent** to which a currency devaluation can raise the demand for exports will be low as well.
  - The low price elasticity could be due to limited close substitutes produced by other countries, the exports having a high degree of necessity, or forming a small proportion of income for consumers or total production costs for producers.

- **Lack of domestic import substitutes**
  - If a country lacks domestically produced import substitutes, there will be limited switching from imports to domestically produced goods and services despite a currency devaluation.
  - The lack of such expenditure switching will reduce the ability of a devaluation in raising AD.

- **Retaliation and competitive devaluation**
  - A country which devalues its currency may invite retaliation (in the form of trade barriers) and/or competitive devaluations from its trading partners.
  - This is because a currency devaluation (as well as other expenditure switching policies like protectionism) is a **'beggar-thy-neighbor'** policy where the initiating country benefits at the expense of its trading partners, thus inducing the latter to get back and punish the former.
  - When such retaliatory actions occur, the initiating country will suffer from a subsequent loss in external demand, which may negate the expansionary effects of the initial devaluation.

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- **Inflation**
  - With reference to Figure 4, when AD_0 rises to AD_1, GPL will rise from P_0 to P_1.
  - Unless the country is operating substantially below full capacity i.e. on the horizontal portion of the AS curve, any expansion in AD will result in demand pull inflation.
  - Furthermore, as a currency devaluation will cause imported inputs to become more expensive, thus raising production costs, firms will be willing to produce less, thus causing AS to shift upwards, which results in cost push inflation.
  - A country which is highly dependent on imported inputs (e.g. Singapore) is likely to suffer from substantial imported inflation.

Devaluation to Reduce a Trade Deficit

- When analysing the impact of a devaluation on **AD**, we are looking at the impact of export and import demand which is in terms of **volume** (i.e. **quantity**).
- However, to analyse the impact on the **trade balance**, we are looking at how export **revenue** and import **expenditure** (i.e. **price x quantity**) when measured in **local** currency are affected.
- A **trade deficit** (negative trade balance) arises when **export revenue is less than import expenditure** i.e. $(Px*Qx) < (Pm*Qm) \rightarrow (Px*Qx) - (Pm*Qm) < 0$.
- To reduce a trade deficit, there is a need to either **raise export revenue** or **reduce import spending**.

- When the central bank devalues its currency
  - Impact on export revenue
    - Exports become cheaper in foreign currency causing export volume to rise.
    - Since export prices in local currency is unchanged, export revenue will definitely rise.
    - The price elasticity of demand for exports (PEDx) only affects the extent of change but not the direction (i.e. export revenue will definitely rise regardless of PEDx).
  - Impact on import expenditure
    - Imports become more expensive in local currency causing import volume to fall.
    - Whether overall import spending rises or falls will depend on the price elasticity of demand for imports (PEDm).
    - If PEDm > 1 (price-elastic), the fall in import volume will be proportionately more than the rise in import prices hence import spending will fall.
    - If PEDm < 1 (price-inelastic), the fall in import volume will be proportionately less than the rise in import prices hence import spending will rise.
    - Hence for a devaluation to reduce a trade deficit, demand for imports should be price-elastic, otherwise the trade deficit may rise instead.
  - The Marshall-Lerner Condition
    - The **Marshall-Lerner condition** states that for a **devaluation of domestic currency to improve the balance of trade**, the **sum of the price elasticities of demand for exports and imports must be greater than one.**
    - If PEDm > 1 (price-elastic), the import spending will fall (as explained above). Export revenue will definitely rise regardless of PEDx. The increase in export revenue and the decrease in import spending will improve the balance of trade. This means the trade deficit would be reduced.
    - If PEDm < 1 (price-inelastic), the import spending will rise (as explained above). However, if PEDx>1, the increase in export revenue will be greater than the increase in import spending, hence there will be an improvement in the balance of trade. This means the trade deficit would be reduced.
    - Hence if the Marshall-Lerner condition holds, a devaluation will improve the balance of trade i.e. reduce the trade deficit.

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Limitations and trade-offs

- The limitations and tradeoffs are largely the same as that of a devaluation used to boost growth and reduce unemployment.
- The key difference *(highlighted in italics)* is that the focus should be on **export revenue/import spending** and not export/import volume.

- **Low price elasticity of exports**
  - If the price elasticity of the country's exports is low, then the **extent** to which a currency devaluation can raise *the volume and hence revenue from exports* will be low as well.
  - The low price elasticity could be due to limited close substitutes produced by other countries, the exports having a high degree of necessity, or forming a small proportion of income for consumers or total production costs for producers.

- **Lack of domestic import substitutes**
  - *If a country lacks domestically produced import substitutes, then it is likely that PEDm < 1.*
  - *As the fall in import volume will be proportionately less than the rise in import prices, import spending will rise rather than fall, and raise rather than reduce the trade deficit.*
- **Retaliation and competitive devaluation**
  - A country which devalues its currencies may invite retaliation (in the form of trade barriers) and/or competitive devaluations from its trading partners.
  - This is because a currency devaluation (as well as other expenditure switching policies like protectionism) is a **'beggar-thy-neighbor'** policy where the initiating country benefits at the expense of its trading partners, thus inducing the latter to get back and punish the former.
  - When such retaliatory actions occur, the initialing country will suffer from a subsequent loss in external demand, which *will reduce export volume and hence revenue, this causing the trade deficit to subsequently rise again.*

- **Inflation**
  - Explanation is identical to that of a devaluation to boost growth and reduce unemployment.

Gradual appreciation rather than depreciation of the Singapore Dollar

In Singapore's context, MAS normally resists the pressure from exporters to depreciate S$ to help them gain a competitive advantage on the grounds that a weak currency is against the interest of the domestic economy due to import price-push inflation. The MAS stand is to slow-down the appreciation of the S$ to mitigate its effect on export price competitiveness. Moreover, the government prefers to encourage exporters to improve their product attractiveness to foreign buyers by improving quality, productivity, product innovation, marketing and branding. In other words, the aim is to make demand for exports more price inelastic so that foreigners would buy them, not because they are cheap, but because they are value for money.

Exchange rate policy still relevant for S'pore: MAS chief Not allowing Sing$ to appreciate would have worsened inflation

Published on May 22, 2013 By Aaron Low, Assistant Money Editor

Even as the exchange rate policy remains Singapore's most potent tool against inflation, the Government is relying more on special policy tools to nip bubbles in the bud before they form. The use of such **macroprudential policies**, including the recent property cooling measures, is becoming increasingly important in an era of cheap money, said Monetary Authority of Singapore (MAS) managing director Ravi Menon.

Speaking at a dinner at the opening of an economic research institute yesterday, he said Singapore faces significant challenges in the new era of slow growth and easy money. "Externally, Singapore is facing a wall of money and rock-bottom interest rates that could potentially set off asset market bubbles that could in turn have knock-on effects on consumer price stability and financial stability," he said. At home, the economy is facing a "demographic cliff" of an ageing workforce, even as the economy undergoes a difficult restructuring period, he said at the Asian Bureau of Financial and Economic Research dinner.

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The combination of easy money and a tight labour market resulted in inflation rising to an average of 4.2 per cent between 2010 and last year, which prompted calls for a switch away from the exchange rate policy. Laying out a stout defence of the policy, Mr Menon noted that if the MAS did not allow the Singdollar to appreciate, headline inflation would have been about 2.5 percentage points higher than the 4.6 per cent rate last year.

He also pointed out that global oil prices have risen by an average of 16 per cent per year between 2010 and last year. But with a strong local currency, local petrol pump prices have increased by only 8 per cent over the period.

The alternative of raising interest rates will attract higher capital inflows and exacerbate asset price inflation even more, he said. In such a scenario, interest rates hikes would have to be very aggressive to dampen higher asset prices, which could see a jump in the currency and hurt the wider economy. But even as the exchange rate policy remains effective, the Government has embarked on macroprudential policies to prevent asset bubbles.

Mr Menon noted that residential property prices in Taiwan, Hong Kong and Singapore have increased by 52 per cent on average since 2009. Here, a soaring property market saw mortgages surge 70 per cent between 2009 and last year amid the low interest-rate environment.

While there was little danger to financial stability - with household balance sheets remaining robust - there was the fear that a hike in global interest rates could leave households vulnerable. To address this risk, the Government used measures which specifically target property prices. To date, eight rounds of measures have been introduced, with each more aggressive than the previous. "Property prices finally appear to be stabilising," he said. He stressed that Singapore's fundamentals remain strong. "Fiscal prudence, financial discipline, minimising debt and living within our means will provide us (with) policy space and a buffer to weather whatever comes ahead. This is an advantage most countries do not have."

REFERENCES: *J. Sloman, Economics, Prentice Hall, 7th Edition, Chapter 25*

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Part 4: Supply Side Policies

SECTION OUTLINE

INTRODUCTION

7.4.1 Short Run Supply Side Policies

7.4.2 Long Run Supply Side Policies

7.4.3 Limitations and Trade-offs of Supply Side Policies

7.4.4 Relationship between Fiscal and Supply Side Policies

7.4.5 Policies to Tackle Structural and Frictional Unemployment

References
Appendix

INTRODUCTION

Supply-side policies are policies designed to influence the **production costs, productive capacity, factor mobility** and **efficiency** of an economy

- Policies that primarily aim to influence the **average production costs** or **productive capacity** will shift the **AS** and such policies are considered supply side policies.
- If the primary aim is to influence AD, but the policy also has impact on shifting AS, e.g. expansionary fiscal spending on infrastructure, then such policies should be considered as **demand management policies with secondary supply side effects**. Example expansionary fiscal policy with supply side effects where government spends on infrastructure, leading to increase in G and AD to tackle recession. However, the spending on infrastructure will increase productivity and increase AS too.
- Supply side policies also include policies which aim to facilitate **factor mobility** so as to reduce structural unemployment and changes to legislation (e.g. removal of minimum wages) to improve the **efficiency of resource allocation.**

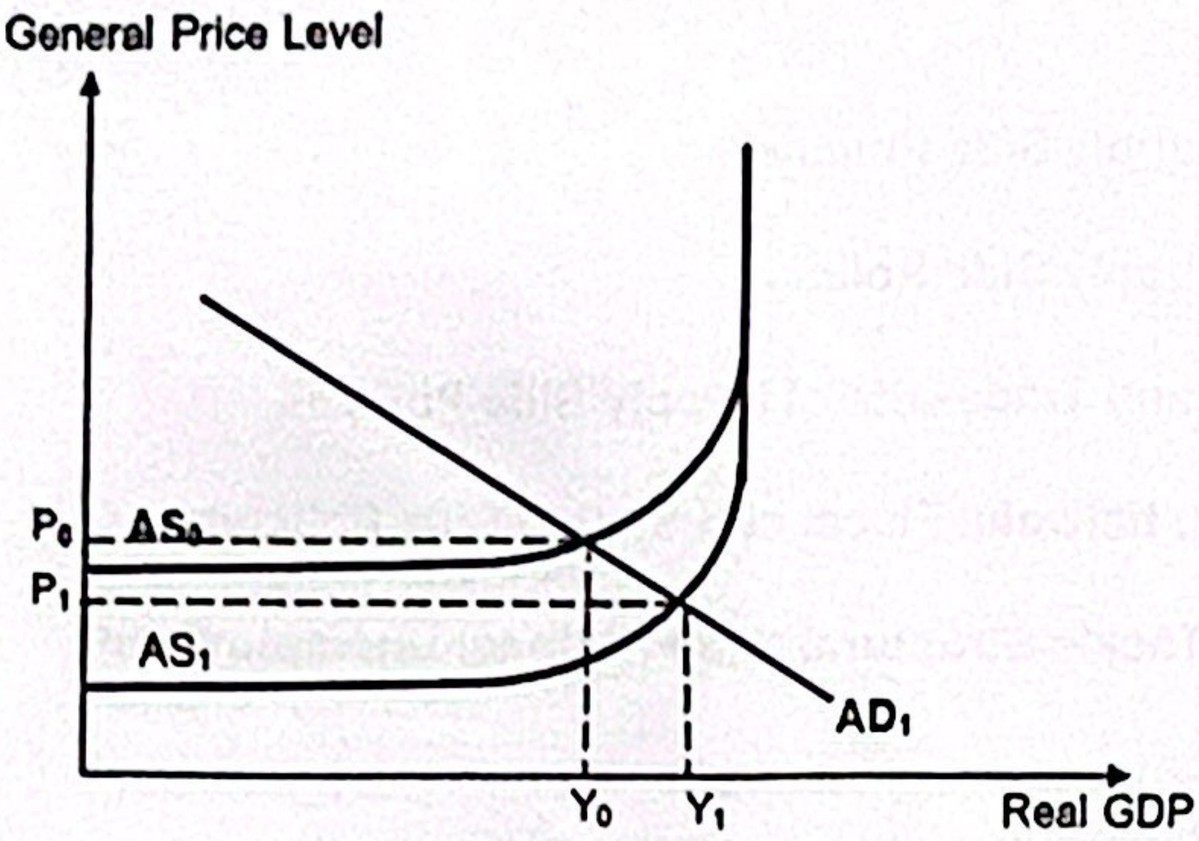
In the N2014 Case Study Question 2, there is a question that requires the understanding of the difference between market oriented/ free market policies and interventionist policies. Please refer to Appendix 1 for the details.

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7.4.1 Supply Side Policies to lower the cost of production

Figure 1: Supply-side policies to lower the cost of production



- When the economy is facing cost-push inflation, referring to Figure 1, the government could implement policies that can **reduce unit production costs** to increase AS and this shifts AS_0 down to AS_1. General prices level (GPL) will fall from P_0 to P_1, **curbing inflationary pressures**
- During a recession, the fall in production costs will increase AS and help to increase real output from Y_0 to Y_1, **boosting economic growth** and job creation, thus **reducing unemployment**
- Unlike demand management policies where there are trade-offs between price stability, growth and employment, supply side policies to lower the production costs **do not face** such **trade-offs**

- Specific examples of such supply side policies to lower the production costs and their limitations include:

  - **Subsidies for inputs for firms** (to fight recession and inflation)
    - E.g. subsidies for wages (commonly used by the Singapore government during the COVID19 induced recession), rentals and utilities
    - *Limitations: Usually very costly and may not be affordable for many governments who lack reserves or who already have large fiscal deficits and debt*

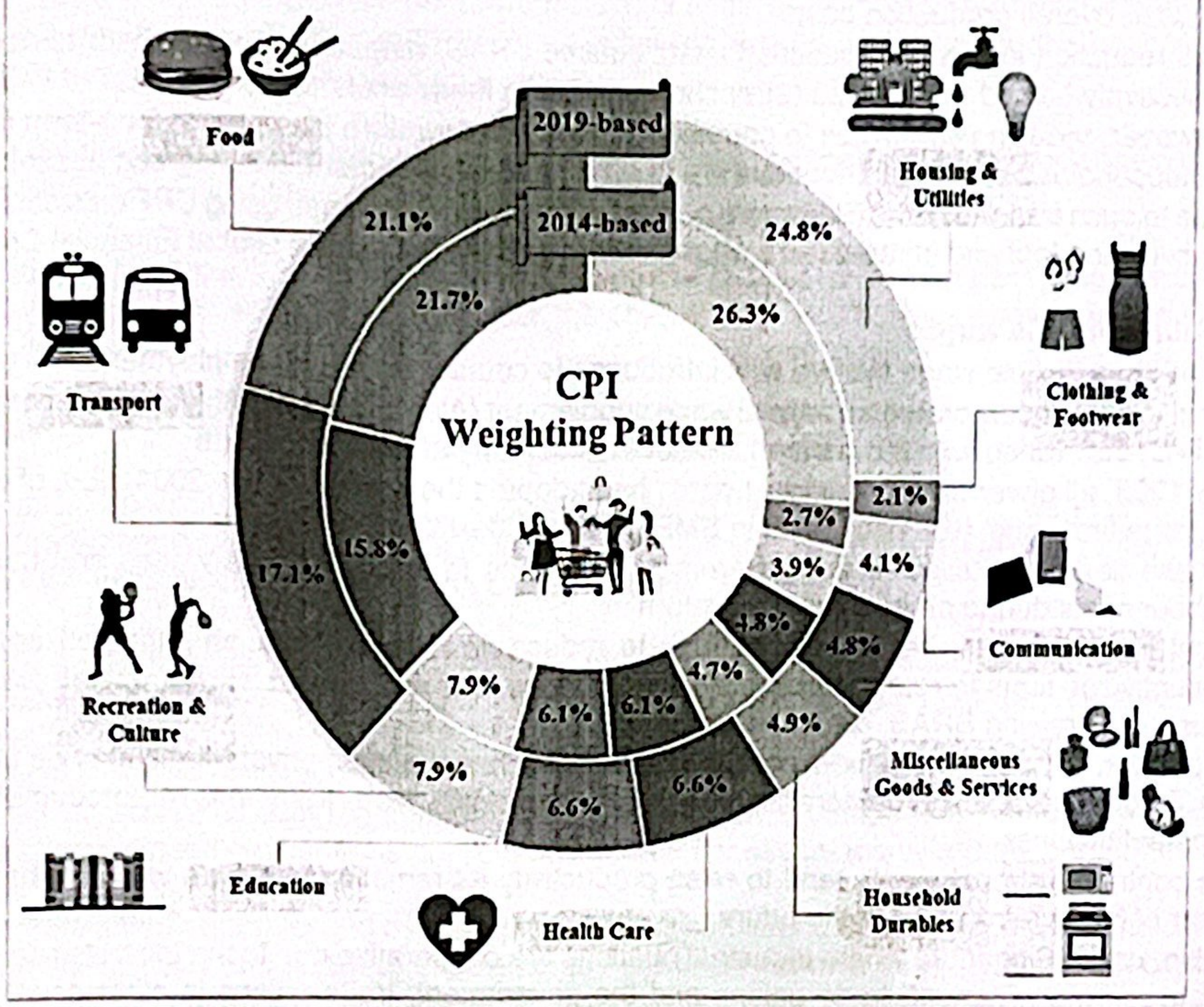
  - **Reduction in government related payments** (to fight recession)
    - E.g. cuts in social security contributions (e.g. CPF rates), cuts in rentals for government owned properties and cuts in charges for government provided services to help reduce business costs
    - *Limitations: May not be feasible for governments which lack the relevant policy instruments and can disrupt the long term finances of households (for CPF cuts) and viability of social security Insurance schemes*

- Overall short run supply side has many binding limitations or they tend to be **highly costly in nature** so they can at best be used as **short term measures** to temporality stabilise the economy

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- Sometimes, inflation can be due to rising prices in a **specific market**, which has a **high weight** in the calculation of the **Consumer Price Index (CPI)**.
- Recall: The CPI is designed to measure the average price changes of a fixed basket of consumption goods and services commonly purchased by the resident households over time. It is widely used as a measure of consumer price inflation. For example, in Singapore, about 6,800 brands/varieties from 4,200 outlets are selected in the 2019-based CPI.
- The **CPI weights** reflect the relative importance of each good or service in the basket. For example, in Singapore, Housing and Utilities takes up 24.8% of the weights and Food takes up 21.1% of the weights in 2019. Refer to Chart below.



- If inflation is due to significant increase in prices in a specific market (e.g. housing), it is not appropriate for the government to implement macro short run supply side policies to reduce the cost of production for the entire economy to tackle the micro problem. Instead, a more targeted approach would be to implement micro supply side policies to tackle the problem for the specific market.

- Specific examples of such **micro supply side policies** and their **limitations** include:
    - **Prices and incomes policies** (to fight inflation)
        - E.g. price controls (price ceilings) on wages, rentals and necessities
        - Limitations: Wage freeze is politically unpopular as it harms households who may already be suffering from high inflation. Price controls on rentals and necessities create shortages, where prices can be even higher in the resulting black markets

<u>Note:</u> Other micro-prudential policies that target specific markets (not FP or SSP) such as Additional Buyer Stamp Duty (ABSD) and Total Debt Servicing Ratio (TDSR) are used to curb the demand for properties in Singapore.

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Specific Examples of Supply Side Policies to lower the production costs in Singapore

Reduction of employers CPF contribution rates (to prevent increase in unemployment)

- The CPF is a compulsory savings policy that requires both employees and employers to make monthly contributions to each employee's CPF account
- To counter economic downturns, the Singapore government cut the employer's CPF contribution during the 1985 recession, 1999 Asian Financial Crisis and 2003 SARs Epidemic, before restoring these rates once the economy had recovered
- Such CPF cuts enabled firms to enjoy an immediate reduction in labour costs, thus providing firms with additional cash flow to help them tide though the recession and preventing firm closure
- The reduction in labour costs also directly incentivised firms to retain their workers as well as reduced overall production costs
- This reduction in overall production costs causes SRAS, output and employment to rise which collectively helped to minimize retrenchments during those economic downturns
- However, reducing CPF rates to counter an economic downturn disrupts the long-term finances of households as CPF contributions are used to finance retirement, housing and healthcare
- Due to such trade-offs, the Singapore government has since stopped using CPF cuts as a macro-stabilisation tool and instead used wages subsidies during the 2009 Global Financial Crisis

Promoting flexible wages

- In 1988, a flexible wage system was introduced to counter cyclical unemployment
- This system incorporated an annual wage supplement (AWS) and a monthly variable component (MVC) that varied with the performance of the economy as well as the firm
- By 1993, all government statutory boards had adopted the system and in 2004, 80% of workers in large firms and 40% of workers in SMEs are on a flexible wage system
- These flexibilities allowed the government and firms to quickly reduce wages and hence cut labour costs during an economic downturn
- Just like CPF cuts, flexible wages help to reduce firm closure through improved cash flow, incentivizes firms to retain rather than retrench their workers, and also lower overall production costs thus raising SRAS, output and employment
- However, although the government may initiate such wage cuts, private firms may be unwilling to follow for fear of demoralizing workers which will lead to a loss in productivity and competitiveness
- In contrast, retrenchments tend to raise productivity as remaining workers will work harder for fear of being retrenched in the future
- Also, unlike Singapore where industrial relations are cooperative due to the tripartite relationship between management, trade unions and the government, trade unions in other countries are definitely more combative and are unlikely to accede to any form of wage cuts for their members

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https://www.channelnewsasia.com/news/singapore/national-wages-council-guidelines-pay-cuts-retrenchments-13290520

Companies may consider temporary wage cuts to minimise retrenchments: National Wages Council

16 Oct 2020

SINGAPORE: Companies that have already exhausted other cost-saving measures should consider implementing temporary wage cuts, but only to the extent needed to minimise retrenchments, said the National Wages Council (NWC) on Friday (Oct 16).

The pay cuts should depend on the performance and outlook for the company as well as the industry it is in, with the burden of wage reductions not falling on any particular group, the council said. It added that management should lead by example.

"Wage cuts accepted in good faith by employees should also be restored when business conditions allow," NWC said in its guidelines issued on Friday.

The updated guidelines, which will apply from November to the end of June next year, are aimed at sustaining businesses and saving jobs under the challenging circumstances posed by the COVID-19 crisis.

GUIDELINES FOR IMPLEMENTING WAGES CUTS

The council set out several key principles for companies implementing wage cuts, which include having employers adopt the Flexible Wage System and utilise the range of flexibility provided for under the variable components of the wage structure.

Under the system, variable components should make up 30 per cent of the annual wage package for rank-and-file workers, 40 per cent for middle management and 50 per cent for senior management.

Employers can consider using the annual and monthly variable components to adjust wages, said the NWC, recommending that firms only cut basic pay if necessary to avoid retrenchments.

It also urged management to lead by example by taking earlier and deeper wage cuts, and called on companies which pay annual wage supplements - commonly known as the 13th-month bonus - to continue doing so if possible.

WAGE FREEZE INSTEAD OF CUTS FOR LOWER-WAGE WORKERS

The council repeated its call for special consideration to be given to low-wage workers, and said that employers who are cutting salaries should implement a wage freeze instead of pay cuts for workers earning a basic monthly wage of S$1,400 or below.

It noted that while it had considered calling for a reduction in employers' Central Provident Fund (CPF) contributions, the consensus was not to do so.

It added that such cuts were a "blunt move" which would not take into account the different circumstances of individual companies and employees, and would also have a disproportionate impact on local workers.

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7.4.2 Supply Side Policies to raise productive capacity

Figure 2a: Supply-side policies to raise productive capacity (increase in *quantity* of resources)

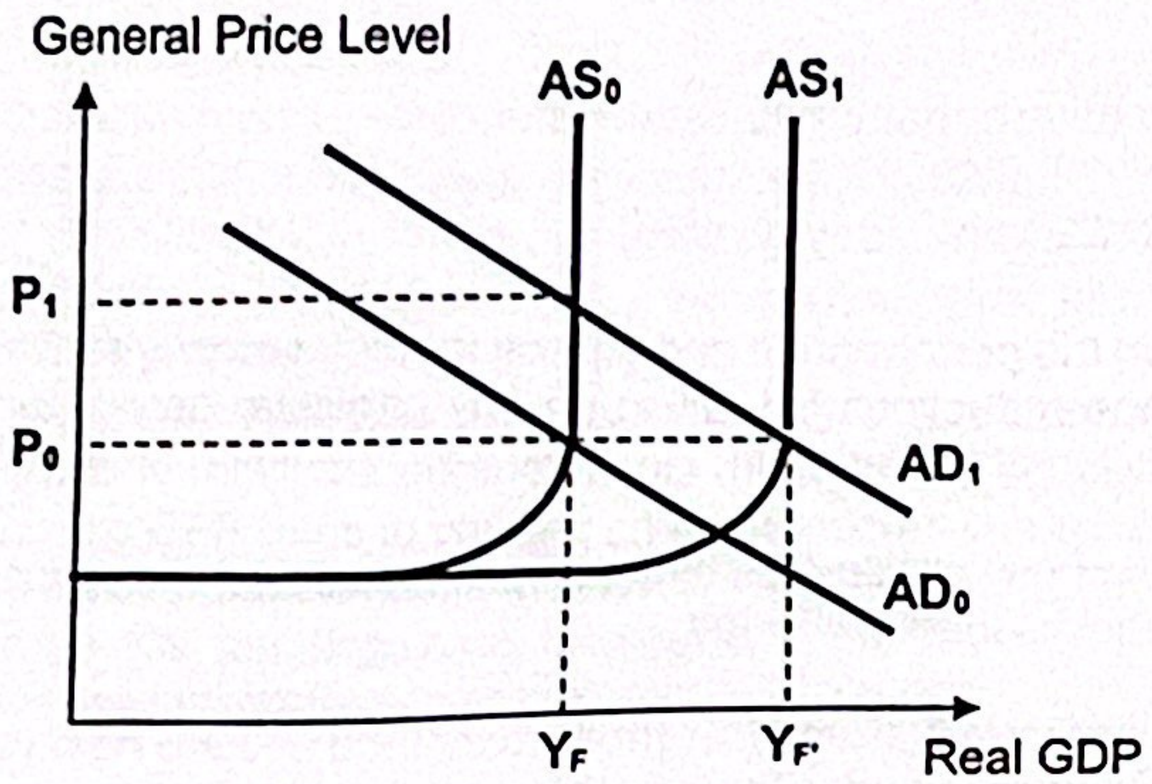
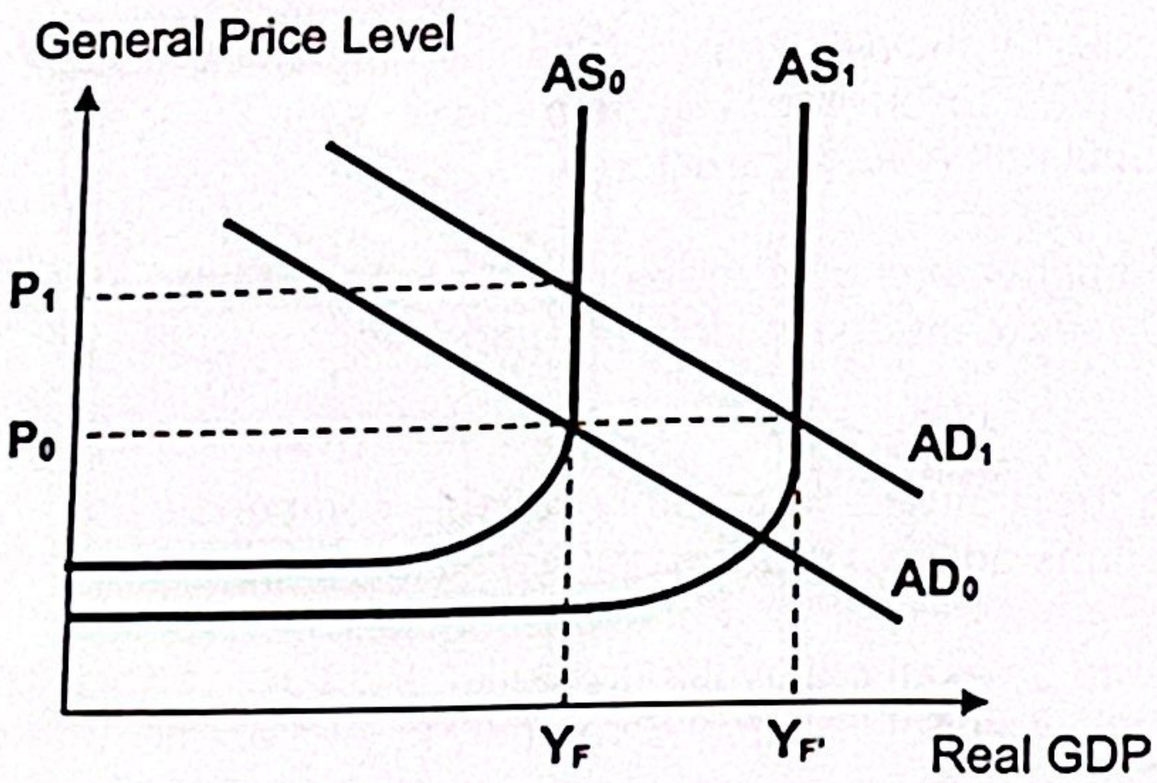


Figure 2b: Supply-side policies to raise productive capacity (increase in *quality* of resources)



- Referring to figures 2a and 2b, if the **economy is already at the full employment** output of Y_F where AD_0 cuts AS_0, a rise in AD from AD_0 to AD_1 will **only result in inflation** of P_0 to P_1 without any corresponding increase in real output
- For **non-inflationary long run growth** to be achieved, supply-side policies to raise productive capacity are required to shift the AS curve from AS_0 to AS_1 such that real output rises from Y_F to Y_F' while general price levels remain at P_0

- Supply-side policies to raise productive capacity are mainly designed to **improve the productive capacity of an economy** and thereby contribute to a faster rate of growth of real national output.
- Basically, such supply side policies aim to enhance one of the following areas
  - **Quantity of labour** which involves efforts to raise birth rates (**pro-natal policies**) and encourage inflow of foreign labour (**pro-immigration policies**)
  - **Quality of labour** which involves efforts to encourage **education and training**
  - **Quantity of capital** which involves efforts to develop **public infrastructure** as well as **private savings and investments**

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- **Quality of capital** which involves efforts to encourage **technological innovation** which results in improved production process

- Attracting **foreign direct investments (FDI)** is a growth strategy that has been proven to be very effective for countries like Singapore and China because it enables **them to enhance both the quantity and quality of both labour and capital in a relative short space** of time
- FDI not only brings in foreign capital to set up production facilities but often also better foreign technology, high-skilled labour (e.g. managers, analyst and engineers) and business practices
- Supply-side policies to raise productive capacity will take a long time to implement and bear fruit **(long gestation period)** and are therefore meant to be used for long run economic development and not for short run macroeconomic stabilisation.

Specific Examples of Supply Side Policies to raise the productive capacity in Singapore

Foreign worker policy

- Singapore has a large foreign workforce which makes up about a third of its labour supply
- The government controls the size of the foreign labour force through foreign worker levies and by controlling the approval of work permits (for low skilled labour) and employment passes (high skilled labour) based on industry specific ratios between local to foreign labour
- During an economic upturn, allowing more foreign labour enables the AS to shift right, thus raising capacity and output as well as reducing inflationary pressures
- During a downturn, raising levies and reducing ratios gives greater incentive for firms to employ or retain domestic workers, thus reducing demand deficient unemployment
- Hence the government uses the policy to not only enhance long run growth, but also for macroeconomic stabilisation.

Policies to encourage automatic and/or R&D

- To remain competitive and increase productivity, the Singapore government provides many different types of grants and subsidies to encourage automatic and/or R&D.
- National Productivity Fund (NPF) provides grants to help enterprises in all sectors, with special emphasis on sectors where there is potential for large gains in productivity. ICT for Productivity and Growth (IPG) Programme seeks to accelerate the adoption of ICT solutions among SMEs and boost their productivity by providing subsidies for ICT-based productivity solutions. Productivity Solutions Grant (PSG) helps firms adopt off-the-shelf technology. The Automation Support Package (ASP) supports firms to deploy impactful, large-scale automation, such as robotics, Internet of Things solutions, and other Industry 4.0 technologies

Policies to increase the skills of workers

- To increase productivity and reduce structural unemployment, the Singapore government has implemented programmes and provide subsidies to encourage workers to retrain and pick up new skills in areas like language, IT, management as well as entrepreneurship
- Examples of such courses include those provided by the Continuing Education and Training Centres (CET) which is accredited by Singapore Workforce Development Agency (WDA).
- There is also the Employment and Employability Institute (e2i) which is a one-stop, skills-based institute for job seekers, employers and training providers where employment and career coaching as well as employability and skills training are provided for all segments of workers ranging from rank and file to professionals, managers, executives and technicians (PMETs)
- Initiatives such as the Skills Development Fund (SDF), as well as the Lifelong Learning Endowment Fund and Workfare Training Support Scheme provide subsidies to firms who send their workers for re-training or upgrading courses to retain their employability
- In 2015, SkillsFuture Credit was also introduced to encourage individuals to take ownership of their skills development and lifelong learning, where all Singaporeans aged 25 and above will receive an opening credit of S$500 and this amount will be topped up periodically.

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7.4.3 Limitations and Trade-offs of Supply Side Policies

LIMITATIONS:

- **Accuracy and availability of information**
  - Although governments need relevant and accurate information to make good decisions, access to such information is often lacking
  - For example, while governments do know that subsidies are required for the production or consumption of merit goods, exactly how much subsidies to give is hard to ascertain
  - Subsidizing too little will mean that the desired outcomes are not achieved while subsidizing too much will result in overconsumption and wastage (i.e. there is government failure)

- **Time lags**
  - Unlike monetary policy, supply-side policies generally require more time to implement
  - For example, while the central bank can change interest rates overnight, it takes years for infrastructure to be build
  - However, some supply-side policies can be implemented quite quickly e.g. subsidies and cutting tax rates

- **Political acceptability**
  - As governments need to win elections, it may be hard for them to implement economically beneficial policies if such policies are highly politically unpopular
  - For example, many countries tend to highly restrict the inflow of foreign labour even though it can substantially enhance their economic competitiveness as the local populace is unwilling to compete with foreigners for jobs

- **Policy conflicts**
  - As there are various economic objectives relating to growth, employment, price stability, efficiency and equity, pursing one goal sometimes come at expense of another
  - For example, while the cutting of direct taxes can stimulate economic growth, consumption taxes may need to be raised to maintain government revenues, which will worsen income inequality as the poor tend to spend proportionately more of their income on consumption

7.4.4 Relationship between Fiscal and Supply Side Policies

- As fiscal and supply side policies are closely related, students tend to confuse one with the other
- For example, when the government **spends more on education**, should this be considered as fiscal policy, supply side policy or both?
- The choice of classification **depends on the main aim of the government**, which is in turn related to the **economic situation**
- If such spending was meant to stimulate the economy during a **recession**, then it should be classified as **expansionary fiscal policy** even though there are **secondary supply-side effects** in terms of raising labour productivity and AS over time
- However, if such spending were to occur in **normal times** such that the main aim is to **raise the productive capacity** of the economy, then such actions should be classified as **supply-side policies** even though there are **secondary demand side effects** in terms of raising AD in the short run.
- ***Note:*** *Not all fiscal policies have supply-side effects and vice versa e.g.*
  - *Fiscal transfers such as unemployment benefits will not have any impact in enhancing the quantity or/and quality of resources and hence productive capacity*
  - *Supply-side policies such as price controls will also not have any impact on boosting AD*

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For Singapore:

- With a small fiscal multiplier and with domestic demand being much smaller than external demand, expansionary fiscal policy is likely to have limited impact on raising Singapore's AD
- Although the Singapore government run expansionary budgets during economic downturns, the aim has never really been to pump prime the economy, but more for supply side reasons
- Firstly, as construction firms typically experiences substantial spare capacity during an economic downturn, the speeding up of infrastructural projects will provide them with much needed cash to tide over the recession, thus helping to preserve the capacity of the construction industry
- Secondly, as infrastructural projects can also be built more cheaply during a downturn because construction companies will be more desperate for business, the speeding up of infrastructural development during a recession is actually fiscally prudent
- In conclusion, even though we would still classify increased infrastructural spending during economic downturn as expansionary fiscal policy, there undoubtedly is a **strong supply-side intent** to such actions when we are looking at the Singapore context.

Note: The policies mentioned in this section target specific types of unemployment rather than AS.

7.4.5 Policies to Tackle Structural and Frictional Unemployment

7.4.5.1 Policies to Tackle Structural Unemployment

Structural unemployment is unemployment that arises from

- **Occupational immobility** due to the **mismatch of skills** between employers and job seekers
- **Geographical immobility** caused by workers being **unable or unwilling to relocate** to areas where jobs are available

- Supply side policies to reduce structural unemployment involves efforts to make the supply of labour **more adaptable** to demand or to **create jobs in economically depressed areas**
- This can be done by
  - **Equipping the workers with the education and skills** that are being demanded by
    - Providing **fiscal incentives** (tax and subsidies) for firms to retrain their workers
    - **Coordinating** or **directly providing** relevant education and training facilities or manpower
  - **Improving infrastructure** to facilitate geographical mobility involves
    - Developing **transport** infrastructure to facilitate workers in their job search and migration
    - Developing **communications** infrastructure to help workers maintain ties with their family and friends should they need to migrate to another area
    - Providing affordable **housing** in areas where jobs are available
  - **Amending legislations** that hampers geographical relocation
  - **Bringing in investments** and hence jobs to areas where jobs are lacking
  - Refer to page 7 for the policies that the Singapore government uses to tackle structural unemployment.

Note: besides supply sides policies, structural unemployment can also be reduced though protectionist policies which raises the demand for labour in sunset industries

- **Limitations and trade-offs**
  - **Training can be very time consuming**, thus workers may be reluctant to undergo training while firms may be reluctant to provide training
  - A **lack of education** for some workers may hamper their ability to acquire higher level skills especially if they are highly technical in nature
  - **Older workers** tend to find it harder to learn new skills and adapt to new working environments because they are more set in their thinking, beliefs and habits

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- Firms may not be willing to give their workers time-off for formal training as this translates to a **loss in current output**
- **Smaller firms** often **lack scale and capacity** to be able to provide formalised training
- The cost of financing training can impose a huge **burden** on the **government budget**

7.4.5.1 Policies to Tackle Frictional Unemployment

- In a free market, employers typically look for workers by **putting up advertisements** in newspapers, job portals and on their company websites
- Such efforts are quite inefficient as it is **highly time consuming** for jobseekers to search and apply each individual job opening and also for firms to look through these applications for shortlisting
- Some employers and job seekers will instead employ the services of **private job matching agencies** to help them find suitable workers and jobs respectively
- However, competition between such job matching firms inevitably results in **market fragmentation**, which then limits the efficiency of job matching

- Policies to reduce frictional unemployment therefore involve efforts by the government overcome such information failures which can take the following forms
  - **Direct provision of job matching services**
    - Employers and job seekers are more likely to register with an officially endorsed job agency or online portal as they are typically perceived to be more reputable and trustworthy, or if their services are provided free or at a very low cost
    - This enables the pool of employers and jobseekers to be combined and consolidated into a larger single market, thus raising the likelihood of successful job matching
  - **Organisation of career / job fairs**
    - Job fairs enable potential employers and jobseekers to have face to face interaction, which can help both parties better understand each other's requirements and expectations
    - However, private firms may find it unprofitable to organise such job fairs, especially if they are conducted on a large scale as massive coordination is required
    - Government agencies tend to be more willing and able to hold such fairs because they do not need to maximize profits, have access to government funding and have direct connections with large employers like other government linked agencies and companies

- Finally, **reducing unemployment benefits** will give the frictionally unemployed greater urgency to re-enter the work force.

REFERENCES

Interested to find out more?
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2. Singapore Economy in the 21st Century, McGraw-Hill Education, Chapters 2, 16, 19

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Appendix 1: Market Oriented vs. Interventionist Policies

Economists classify supply-side policies (SSP) into 2 main categories

- **Market-orientated** SSP refer to actions by the government to alter regulations which adversely affect the free market's ability to allocate resources efficiently
- **Interventionist** SSP refer to efforts by the government to actively channel and reallocate resources to different economic activities

Market Orientated Supply Side Policies

- In general, the **microeconomic aims** of a government are to promote **efficiency** and **equity**. Governments often **subsidize, nationalize,** or **regulate** industries like healthcare, education, transport, utilities, and telecommunications to achieve the aims.
- However, the government may over time realise that some of these efforts to promote efficiency and equity are **outdated, poorly implemented or misguided**, thus adversely affecting the ability of markets to function efficiently
- Thus **market-oriented policies** are enacted to improve the efficiency of markets and hence promote economic growth and development

- **Examples of such market-orientated supply-side policies include:**
  - **Privatisation:** the selling state-owned assets to the private sector because the latter is often more efficient as the profit motive incentivizes them to reduce costs and develop better services
  - **Liberalisation:** reducing internal barriers to entry to make markets more competitive, which should lead to lower prices and improved product quality
  - **Deregulation:** simplification of complex and onerous administrative procedures so that it is easier for firms setup, operate and innovate
  - **Reforming taxes and benefits:** reducing various taxes, subsidies and benefits, which should help remove distortions and restore the incentive work, save and invest
  - **Labour market reforms:** reducing minimum wages, curbing of trade unions and easing of restrictions on the hiring and firing of workers so that labour mobility can be improved
  - **Easing of protectionism:** reducing taxes and restrictions on foreign imports and investments so that domestic firms are forced to become more efficient to compete

Interventionist Supply Side Policies

- For long run growth to be enhanced and sustained, governments may need to actively intervene to reallocate resources to raise the **quantity or quality of labour and capital** because the private sector may lack the incentives for such actions to be achieved on its own
- Intervention can take the form of **subsidies, direct provision (nationalisation)** and **regulations** (e.g. intellectual rights protection and anti-monopoly laws)

- **Examples of interventionist supply-side policies include giving support to:**
  - **Infrastructural development** for transport, utilities and telecommunications as such markets exhibit substantial positive externalities, require complex coordination between many government agencies and tend to be natural monopolies
  - **Infant industries, start-ups** and **small to medium size enterprises (SMEs)** which have the potential to drive growth and employment if given the time and space to grow
  - **Innovation** as knowledge generated from R&D is non-rival and exhibits positive externalities
  - **Education and training** as the full cost of education is often too costly for households to bear, banks may be unwilling to provide education loans as it is hard to determine potential default risks, and firms may be reluctant to train their workers as they may leave after the training
  - **Immigration and higher birth rates** as economic development will increase the opportunity cost of raising children, hence resulting in declining birth rates and aging populations

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(1) Part 5: TRADE-OFFS IN POLICIES OBJECTIVES

CHAPTER OUTLINE

7.5.1 INTRODUCTION

7.5.2 TRADE-OFFS IN POLICY OBJECTIVES
- 7.5.2.1 Macroeconomic Internal Objectives Trade-offs
- 7.5.2.2 Macroeconomic External versus Internal Objectives Trade-offs
- 7.5.2.3 Macroeconomic versus Microeconomic Objectives Trade-offs
- 7.5.2.4 Microeconomic versus Microeconomic Objectives Trade-offs

7.5.3 TRADE-OFFS AND PRIORITISING

(2) 7.5.1 INTRODUCTION

By now, you should realise that the government has 4 macroeconomic and 2 microeconomic goals.

Macroeconomic Objectives
- The macroeconomic role of the government could be summed up as the pursuit of **actual & potential economic growth**, **full employment**, **price stability** and **favourable BOT position**.
- These objectives could be broadly categorised as Internal versus External goals.

Microeconomic Objectives
- The microeconomic goals of the government could be summed up as the pursuit of **efficiency** in resource allocation and **equity** in income distribution.
- As the overseer of the economy, the role of the government is not to replace the market, but to help markets work efficiently so as to deliver the best possible level of welfare or living standards for everyone in the economy.

TRADE-OFFS (Conflicting Policy Objectives)
- However, in practice, the government's role in managing the economy is often complicated by conflicts that exist in terms of pursuing these goals. There are **TRADE-OFFS**. In other words, it is not always possible to simultaneously pursue and achieve all the desirable goals at any given time. To achieve one goal might come at the expense of another.
- Thus, governments often have to balance trade-offs and **set priorities**.
- One example to illustrate the conflict between economic goals is the case of present-day China. The Chinese government's top priority is to ensure rapid economic growth to avoid massive unemployment, and potential social and political upheaval. However, the pursuit of this goal has come with a heavy price for the economy in terms of overheating, environmental pollution, widening income gaps and persistent trade imbalances with its trade partners, in particular the USA.

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Summary of economic goals (split into microeconomic and macroeconomic goals):

Economic Objectives	
Macroeconomic Objectives	**Microeconomic Objectives**
Internal Objectives • Actual & Potential economic growth • Full employment • Price stability **External Objective** • Favourable BOT position and exchange rate stability	• Efficiency • Equity

Note: *If actual & potential economic growth and equity is achieved, there is inclusive economic growth. If actual & potential economic growth is achieved without significant environmental problems and/or severe depletion of natural resources, then sustainable economic growth is achieved.*

(3) 7.5.2 TRADE-OFFS IN POLICY OBJECTIVES

i. 7.5.2.1 Macroeconomic Internal Objectives Trade-offs

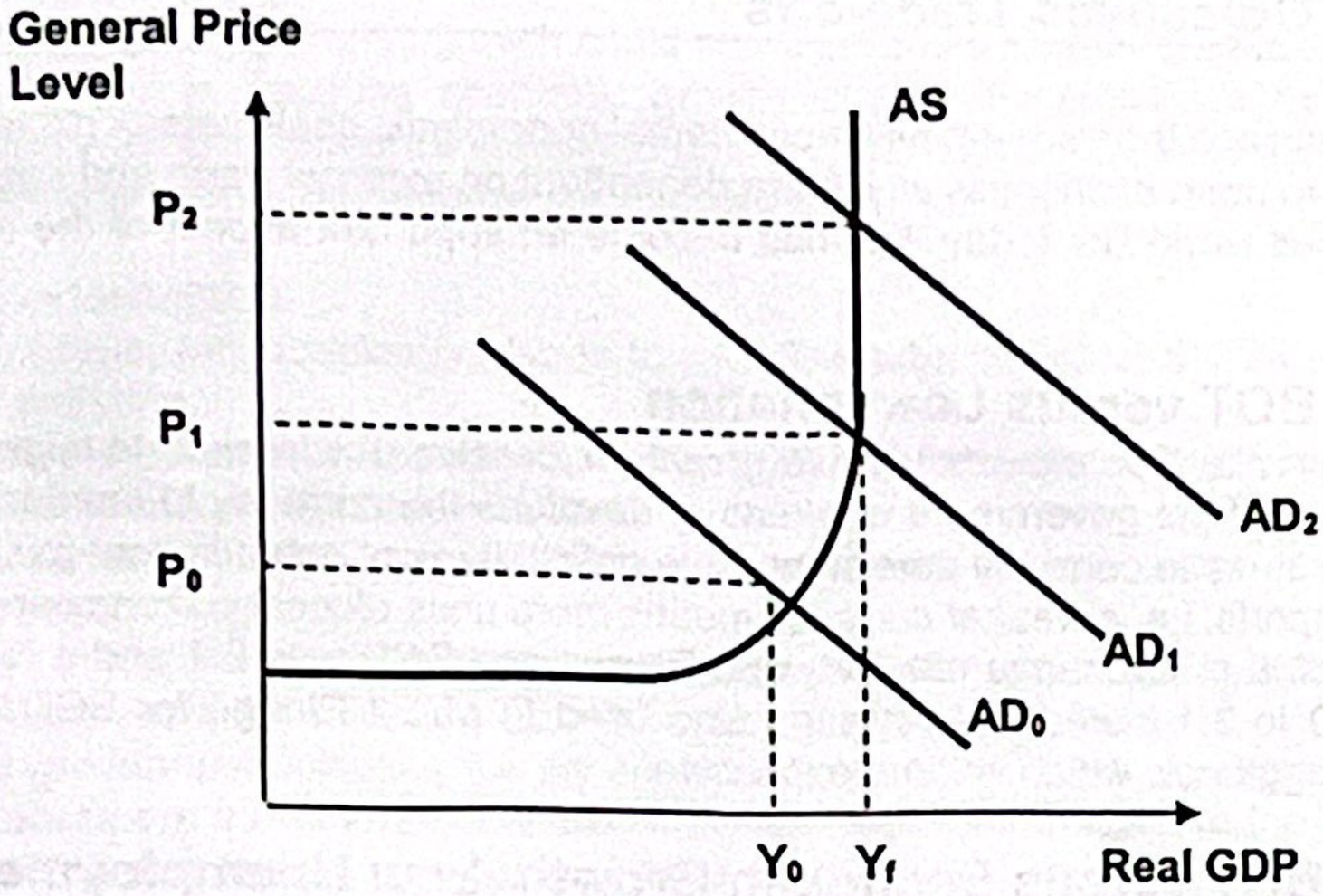
(A) Economic Growth/ Low unemployment versus Low Inflation (Price Stability)

- As governments pursue economic growth to create sufficient jobs for the labour force (preventing unemployment), growing too fast may inevitably conflict with price stability as it might cause overheating or create inflationary pressure.
- Using AD/AS analysis, when the economy approaches the full employment level (i.e. near the vertical portion of the AS curve), the pursuit of growth through expansionary fiscal and monetary policy will result in supply capacity constraints in the short-run and lead to higher demand-pull inflation.
- With reference to Figure 1, pursuing rapid growth implies that the government has to boost AD through expansionary policies such as increasing government spending or cutting direct taxes to stimulate private consumption and investment expenditure.
- Thus, in the short run, there might be demand-pull inflationary pressures illustrated by the rightward shift of the AD curve from AD_0 to AD_1 to AD_2 with **no or little increase in the productive capacity** of the economy, i.e. the firms are facing a supply bottleneck or tight capacity – *close to the full employment output.* The increase in AD leads to competition for factors of production and hence driving up costs (GPL), reflected as a movement along the AS curve. Hence, the economy "overheats" and general price level rises from P_0 to P_1 to P_2.

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Figure 1: Rapid growth at the expense of demand-pull inflation



(B) Price Stability versus Low Unemployment

- On the other hand, pursuing low inflation might result in slow growth and it might come at the cost of rising **demand-deficient** unemployment due to the lack of jobs created.
- An example was the US in early 1980s. In an attempt to contain inflation which was close to 20%, contractionary monetary policy by reducing interest rate to discourage consumption and investment was used and this triggered a recession where unemployment rose above 10%.

(C) Economic Growth versus Low Unemployment

- Supply-side stimulated growth may lead to a rise in **structural unemployment.**
- Supply-side policies refer to policies that are aimed at increasing the productivity of the economy via innovation such as introduction of new products and new technology into the production process to stimulate growth.
- However, the introduction of new technology and new products might alter the kind of skills required by the labour market. Existing workers in the labour force without the new skills might lose their jobs.
- For example, as an economy undergoes restructuring from a low-tech or low-end manufacturer of clothes and shoes to a high-end manufacturer of sophisticated products like aeroplanes and computers, workers in the declining industries must be able to acquire new skills to switch over to new growth sectors. In reality, that is often not so easily done because workers have to be retrained to fit into new jobs available in the economy. Thus, the number of workers losing their jobs due to skills mismatch might rise as a result of restructuring leading to more structural unemployment.
- On the other hand, if the government is too focused on avoiding structural unemployment it might not be keen to embark on restructuring the economy, thus slowing down the pace of growth as existing old industries lose their comparative advantage to new rivals.
- Thus, the choice of pursuing supply-side stimulated growth entails a trade-off in terms of potentially more structural unemployment.

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ii. 7.5.2.2 Macroeconomic External versus Internal Objectives Trade-offs

Governments have to balance the trade-off between internal or domestic goals versus external goals. This applies especially to open economies which are dependent on external trade and capital flows. Especially in a globalised world like today, this has become an important aspect of the role of the government.

(A) Favourable BOT versus Low Inflation

If an economy is heavily reliant on exports to drive growth, excessive rise in exports might result in demand-pull inflation. And if the government weakens or devalues the currency to increase exports and discourage imports so as to correct a persistent trade deficit, it might result in cost-push inflation due to higher price of imports, i.e. a weaker currency means more units of local currency are required to buy the same imports. E.g. Exchange rate between Ringgit and SGD was 2:1 and if Ringgit has weakened against SGD to 3:1 instead, Malaysians who used to pay 2 Ringgit for SGD1 worth of goods have to pay 3 Ringgit now which is more expensive.

(B) Favourable BOT versus Economic Growth/ Low Unemployment

A good example is the on-going trade disputes between USA and China. USA has a persistent trade deficit vis-à-vis China and conversely China has a large trade surplus relative to the USA. In this case if China attempts to correct the trade imbalance through revaluation/strengthening the Yuan, it might result in a slowdown in export growth and lead to increased unemployment.

iii. 7.5.2.3 Macroeconomic versus Microeconomic Objectives Trade-offs

(A) Economic Growth versus Equity

- Rapid growth might cause widening income disparities and worsens the income gap between the rich and poor resulting in the ability to achieve inclusive growth.
- For example, the recent experiences of rapid growth in China have resulted in a widening of the income gaps as measured by the Gini coefficient.
- China's Gini coefficient was 0.16 in 1975 (pre-market reform period). Today, it has risen to 0.47 on the back of China's rapid growth into a giant emerging economy.

Reasons for widening income gap with economic growth:

1. **Uneven opportunities**. The main underlying reason is that rapid economic growth provides opportunities for incomes of the able, talented and entrepreneurial individuals to surge ahead compared to income of workers with low skills and education. Such widening income disparities, if unresolved, create social tension that could eventually lead to social conflicts and political upheaval e.g. civil strife.

2. **Policy conflict.** A second reason is that pursuing growth involves the use of policies that might conflict with equitable income distribution. For example, to promote growth, governments might adopt supply side tax policy to spur productivity and growth. Such tax policies typically involve cutting corporate taxes and personal income tax while at the same time raising indirect taxes e.g. GST or VAT to ensure a stream of tax revenue. The idea is to provide incentives for investment, people to work harder and to be more entrepreneurial. However, such a tax system invariably accentuates income inequality because they are regressive in nature as the lower income ends up paying a bigger proportion of their income for GST or VAT.

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(B) Economic Growth versus Efficiency

The pursuit of rapid economic growth could result in environmental degradation, pollution and traffic congestion. This is because economic growth is often accompanied by rapid industrialization, urbanization and rising affluence leading to greater consumption. Such economic activities associated with growth often generate negative spillover effects on society.

Negative externalities

- For example, industrialization leads to negative externalities in the form of more air, noise and water pollution.
- Factories discharge waste into the air or water. Increased construction of roads, buildings and infrastructures create noise pollution.
- At the same time, an increase in ownership and usage of cars contributes to carbon emissions as well as road congestion.
- A good example is India. It experiences rapid growth in recent years but yet according to a report by Greenpeace, 22 of world's 30 most polluted cities are in India.[1]
- Rapid growth also inflicts a toll on the environment. As an economy grows and develops, more rural areas are transformed into cities. Urbanisation has resulted in the clearing of vast areas of virgin land and forests to make way for industrial parks and cities. Deforestation has become a threat to the environment for its contribution to soil erosion and global warming. The use of fossil fuels, industrial metals etc results in the depletion of these non-renewable resources in the long run.
- However, developing economies are afraid of implementing policies to curb pollution e.g. taxes and regulation, if enforced stringently tend to slow down growth. For instance, using green technology adds to business costs and disadvantages poorer nations on their path to rapid economic growth. Stringent enforcement of anti-pollution regulation could also lead to the closure of many factories and industries and thus the loss of jobs and output. Thus, pursuing a 'green policy' to promote sustainable growth tends to conflict with rapid economic growth.

SUSTAINABLE GROWTH

Sustainable growth is aimed at reconciling growth and protection of the environment and the sustainable use of non-renewal resources.

Sustainable growth indicates a rate of growth that can be maintained without creating other significant economic problems, particularly for future generations. It implies a positive and stable growth rate over an extended period of time.

There is a *trade-off* between rapid economic growth today, and growth in the future. Rapid growth today may exhaust resources and create environmental problems for future generations, including the depletion of oil and fish stocks, and global warming.

[1] *https://www.theguardian.com/cities/2019/mar/05/india-home-to-22-of-worlds-30-most-polluted-cities-greenpeace-says*

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iv. 7.5.2.4 Microeconomic versus Microeconomic Objectives Trade-offs

Earlier on you have already come across several instances where government intervention to achieve efficiency in the markets have resulted in accentuating income inequality or inequitable income distribution and vice versa.

As these issues have already been discussed earlier, here is a list of typical examples for recap and review:

- Price ceilings imposed on essential goods like rice and utilities or rent control in the housing market to help the low-income/poor lead to inefficiencies such as shortages; rationing and the emergence of black markets.
- Price floors e.g. minimum wages laws lead to inefficient use of resources such as increased unemployment amongst low-income unskilled workers and the emergence of black markets.
- Subsidies: Public health care subsidies to help the low-income to improve distribution of basic necessities could lead to inefficiency such as overconsumption (e.g. long waiting time, hospital overstay; over treatment)
- Fuel subsidies for the low-income /poor households e.g. Malaysia and Indonesia lead to inefficiencies such as wasteful consumption of fossil fuels as well as pollution.
- Taxes on luxury goods and services may be more equitable but it is inefficient as it will lead to deadweight welfare losses.

7.5.3 TRADE-OFFS AND PRIORITISING

The above conflicting goals are not exhaustive. However, we can draw some observations from them:

(A) Level of economic development and wealth

(1) Economic Growth as priority over equity or equitable income distribution

Given that conflicts do arise from the simultaneous pursuit of all the economic goals, the government has to balance "trade-offs" and prioritise its goals according to changing circumstances. For instance, the Singapore government's top priority could be to grow the economy "at all costs" i.e. trading off the problem of widening income inequality. The government justified this on the grounds that growth is a pre-requisite to a more equitable distribution of income. With a bigger GDP or economic pie redistribution of income is easier because everyone can get a bigger slice. Currently the government is paying closer attention to the widening income disparity that has become a major concern and has introduced 'radical" measures like WIS (workfare income supplement) to address this problem.

(2) Economic Growth as priority over environmental protection

In the context of climate change and global warming, many developing or emerging economies are accused of prioritizing growth over environmental protection and reduction of CO_2 emissions from factory pollution and cars. However, China and other emerging economies such as India have in turn accused developed countries of hypocrisy. Developed or rich countries have become wealthy through rapid industrialisation which entails massive pollution of the environment in the past. Thus, the emerging economies feel that it is the responsibility of the rich advanced countries to shoulder most the cost of mitigating global warming, and to allow the poorer countries more time to catch up before they can focus on cleaning up the environment.

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(B) State of the economy

- As a country goes through short term economic fluctuations, its priority invariably changes.
- For example, during a cyclical downturn (e.g. recession), the government's priority is to focus on growth and employment rather than price stability. Thus, policies are focused on stimulating growth rather than curbing inflationary pressures.
- During a boom when the economy is experiencing a cyclical upturn, the government should be more concerned with curbing inflationary pressures than keeping unemployment at bay.
- Thus, priorities in terms of trade-offs (e.g. growth v stability) also depends on the state of the economy.

(C) Trade-offs and Policy tools

(4) Single versus Multiple policy instruments

- Conflicts also arise because each policy instrument is designed to achieve only one goal at a time. Thus, in order to achieve more than one goal simultaneously, the government needs to use more than one policy instrument. It is unrealistic to expect to achieve multiple goals with just one policy instrument. This is similar to the analogy of saying one fire extinguisher can only be used to put out one fire at a time. Putting out more than one fire requires the use of more than one fire extinguisher.
- A typical example to illustrate this policy dilemma is the use of monetary policy. Monetary policy can be used to stimulate growth and fight inflation.
- Cutting interest rates and printing money might stimulate growth but, at the same time, it might threaten to create inflationary pressures. However, tightening monetary policy to curb inflationary pressures might slow growth. This is the dilemma that the USA fed reserve faces every time it decides whether to raise or cut interest rates. Some economists argue that monetary policy should be used chiefly to curb inflation. Hence the mandate given to some central banks is to control inflation within a set target.

(5) Trade-offs and Nature of Economy (Open versus closed economies)

- Macro policy decisions are affected by the extent to which the economy is open.
- For example, open economies are more vulnerable to import-cost push inflation.
- If in order to curb imported cost push inflationary pressures the government adopts an appreciation of the currency, the price of its exports in foreign currency would rise. This would dampen export competitiveness and may lead to a fall in export earnings. Ceteris paribus, its BOT will worsen.
- On the other hand, if the government focuses on correcting a BOT deficit, a currency depreciation might sharpen its export competitiveness and dampen imports. However, this policy may lead to higher costs of imports, thus creating inflationary pressures – resulting in a trade-off between internal price stability and external trade balance.

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Chapter #7: The National and International Economy (II)
Part (b): Macroeconomic Policies TUTORIALS

Tutorial 7

Essay Question 1: TYS2010 Q4
The recent worldwide recession caused many governments to re-assess their use of fiscal policy in order to stimulate their stagnating economies.

(a) Explain what would reduce the effectiveness of fiscal policy as a stimulus to the Singapore economy. [10]
(b) Assess alternative policies that might be more appropriate in managing the Singapore economy when faced with a worldwide recession. *(Note: Knowledge of trade policies required but you can answer based on the policies that you have learnt so far.)* [15]

R2: Supply-side policies
R4: exchange rate policy

Essay Question 2: TYS2011 Q4 (attempt part b)
(a) Using an AD-AS diagram, explain the process whereby an increase in government expenditure can lead to a bigger change in national income. *(Completed in Tut 5.2)* [10]
(b) Discuss the extent to which conflicts in government macroeconomic objectives limit the scope for the use of fiscal policy in any economy. [15]

↳ Evaluation: comparison between diff country contexts

Essay Question 3: TYS2012 Q5
During 2009 the Bank of England engaged in what is known as 'quantitative easing' by pumping more than 200 billion into the economy. Record low levels of interest rates have also been maintained within the UK economy. Quantitative easing and low interest rates were also adopted by the US.

(a) Explain why exchange rates rather than interest rates are the preferred choice as the instrument of monetary policy in Singapore. [10]
(b) Discuss the likely impact on the Singapore economy of quantitative easing and low interest rates in the US and the UK. [15]

Essay Question 4: TYSN2015 Q4
In its September 2013 Recent Economic Developments Statement, the Monetary Authority of Singapore noted that inflation was expected to rise moderately. Strong GDP growth in Q2 2013 was mainly due to increased output in the manufacturing and trade-related service sectors with a slowing of growth in private consumption. There was expected to be continued strong wage pressure from persistent tightness in the labour market caused by shortages in labour supply, accompanied by steady expansion in demand for goods and services from the US, Japan and the Eurozone.

Source: Recent Economic Developments in Singapore, MAS, 5 Sep 2013

(a) Explain how the above-mentioned factors might have caused the rate of inflation to rise in Singapore. [10]
(b) Discuss whether exchange rate appreciation should remain the most important policy instrument in controlling the rate of inflation in the Singapore economy. [15]

Essay Question 5: Adapted from TYS N2017 Q4 (attempt part b)
High rates of unemployment remain a major issue in many economies of the world. An understanding of various causes of unemployment is needed in order for a government to decide on the economic policies that would help its economy achieve full employment.

(a) Explain the various causes of unemployment. *(completed in Tut 6.2)* [10]
(b) Discuss the economic policies that would help to achieve full employment in today's globalised world. [15]

Essay Question 6: TYS N2017 Q5 (attempt part b)
The Singapore economy grew by 1.8% on a year-on-year basis in the second quarter of 2015, sharply lower than the 2.8% growth in the preceding quarter, the Ministry of Trade and Industry (MTI) announced on Tuesday 11 August 2015.

(a) Explain the internal and external factors that are likely to have contributed to this slowdown in the economic growth rate. *(optional question in Tut 6.1)* [10]
(b) Discuss whether the policies aimed to increase the economic growth rate cause difficulties for Singapore's economy. [15]

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Part (b): Macroeconomic Policies TUTORIALS

Case Study Question 1: TYS 2011 Q2

Interest rates in Australia and the UK

Extract 5: Australia raises interest rates for the second time in a month

In October, Australia became the first developed country to raise interest rates since the global financial crisis after the Reserve Bank of Australia (ABA) increased the cost of borrowing from 3%- a 49-year low 'emergency rate'- to 3.25%. Rates had been slashed from a peak of 7.25% in March 2008.

The ABA has now raised the country's official interest rate for the second time in a month. The rate was raised by 0.25 points to 3.5%, another sign that the country's economic recovery is continuing. The ABA governor said that Australia's major trading partners in the Asian region were experiencing 'noticeably better' conditions. 'Growth in China has been very strong, which is having a significant impact on other economies in the region and on commodity markets,' he said. 'For Australia's trading partner group, growth in 2010 is likely to be close to trend.' He said economic conditions in Australia had been 'stronger than expected' and measures of confidence in the economy had recovered. 'With the risk of serious economic contraction in Australia now having passed, the RBA's view is that it is sensible to lessen gradually the degree of monetary stimulus that was put in place when the outlook appeared to be much weaker,' he said.

Source: Sophie Tedmanson, Times Online, accessed 3 November 2009

Extract 6: UK interest rates remain on hold

As widely expected, the Bank of England has kept UK interest rates on hold at 0.5% for the seventh successive month. This is because data continues to show that any UK economic recovery remains patchy.The Bank also said it would continue with its programme of pumping £175 billion of extra money into the economy, a policy known as 'quantitative easing'.

The economy contracted 0.6% between April and June of 2009, following a 2.4% decline from January to March.

Many commentators thought that the economy probably expanded during the third quarter of 2009. However, when official figures were published they showed a further decline of 0.2%.

Source: BBC News, 8 October 2009

Extract 7: UK interest rates to 'stay very low for years'

Interest rates in the UK will stay very low for years as the government attempts to deal with the UK's weak economy, according to a study by the Centre for Economics and Business Research (CEBR). The cost of borrowing is forecast to remain at its record low of 0.5% until at least 2011 and to remain below 2% until 2014. A weaker pound sterling- slumping to just US$1.40 and possibly falling below 1:1 parity with the euro- is also expected.

The CEBR predicts the next government will have to generate around £100 billion through tax rises and spending cuts to deal with the country's budget deficit. A future government will have to bring the deficit down to £50 billion by the 2014-15 financial year, a tough challenge, as the CEBR also warns that the deficit will be £143 billion in that year if no action is taken. The CEBR chief executive said: 'We are likely to see a restrictive fiscal policy while monetary policy remains expansionary.'

Source: The Guardian, 12 October 2009

Extract 8: Pound under new attack as agency says it will cut UK's credit rating

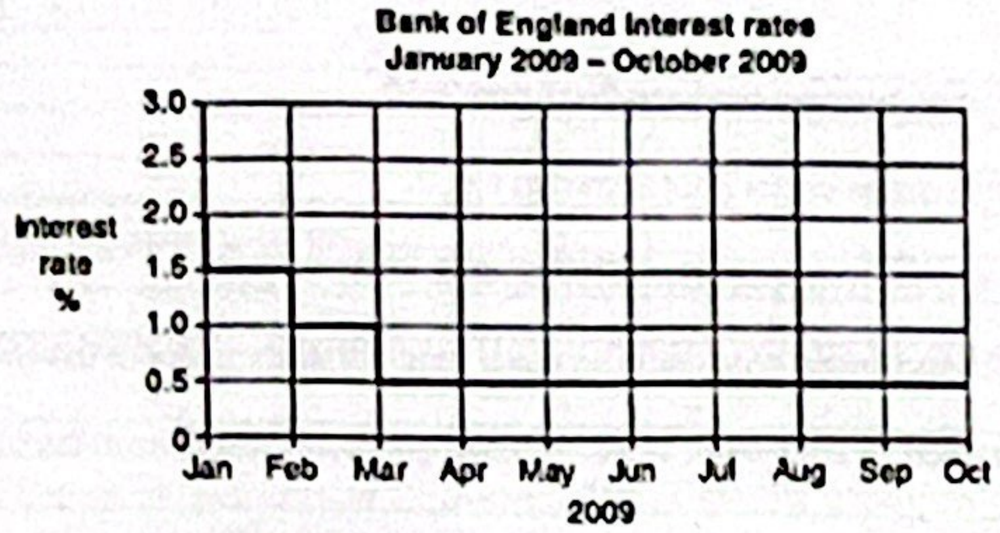
The pound sterling's value against the US dollar tumbled when a leading credit ratings agency suggested that the UK might lose its cherished AAA status (a measure of credit rating) because it was the 'potentially most at risk' of the major economies. Fitch Ratings said the UK's credit rating was most at risk because the country required 'the largest budget adjustment'. Following the announcement, the pound sterling, which had been appreciating against the US dollar, fell by about a cent from a three-month high to US$1.66. The pound also fell back against the euro to €1.11.

The concerns of Fitch Ratings centre on the UK's soaring budget deficit, which is set to approach £200 billion this fiscal year, or about 13% of UK GOP. A spokesman for the Confederation of British Industry said:'The UK's credit rating must be put beyond doubt and the budget returned to balance by 2015. The emphasis must be on spending cuts rather than tax increases.'
Apart from the political embarrassment involved in any threat to the credit rating, such a move would have severe consequences for the cost of servicing the UK's debt, because investors would demand higher interest as a 'risk premium' against the possibility of default. Only 17 nations or territories have AAA status. The elite are mostly larger, advanced economies, but there are exceptions. The list comprises Australia, Austria, Canada, Denmark, Finland, France, Germany, Guernsey, the Isle of Man, Liechtenstein, Luxembourg, the Netherlands, Norway, Singapore, Sweden, the UK and the US.The UK is the only AAA-rated nation that also has a negative outlook, given that its national debt is set to rise to 100% of GOP.

Source: Sean O'Grady, Economics Editor, The Independent, 11 November 2009

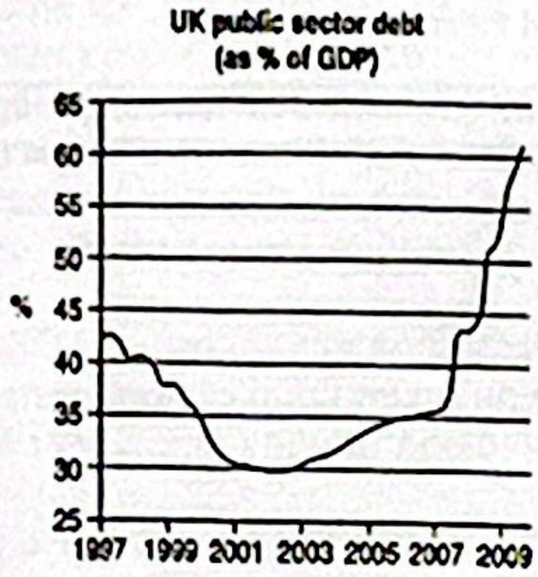
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Source: Bank of England

Figure 1



Source: UK Office of National Statistics

Figure 2

Table 2: Public sector debt (March 2010)

	% of GDP
Australia	19
UK	68.5
World	54

Source: The Guardian

Table 3: Annual percentage change in selected economies

	real GDP			consumer prices		
	2007	2008	2009	2007	2008	2009
Australia	4.0	2.4	0.7	2.3	4.4	1.6
UK	2.6	0.7	-4.4	2.3	3.6	1.9
All advanced economies	2.7	0.6	-3.4	2.2	3.4	0.1

Table 4: Unemployment: percentage of the workforce in selected economies

	2007	2008	2009
Australia	4.4	4.2	6.0
UK	5.4	5.5	7.6
All advanced economies	5.4	5.8	8.2

Sources of Tables 3 and 4: OECO, World Economic Outlook, 2009

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Year Two H2 Economics 2023
Chapter #7: The National and International Economy (II)
Part (b): Macroeconomic Policies TUTORIALS

Questions

(a)	Compare the UK's recession with that of Australia between 2007 and 2009.		[2]
(b)	(i)	Describe the trend in the UK's public sector debt shown in Fig. 2.	[1]
	(ii)	With reference to the data, explain how recession affects public sector debt.	[3]
(c)	(i)	Using a diagram, explain why the pound sterling fell in value after the warning about the UK's credit rating.	[2]
	(ii)	Explain how this fall in the pound sterling might affect prices of goods and services in the UK.	[2]
(d)	What evidence is there in the data that real interest rates were negative in the UK during most of 2009?		[2]
(e)	With reference to the data, discuss why the authorities in the UK were expected to maintain low interest rates 'for years' while the authorities in Australia have increased them.		[8]
(f)	The CEBR chief executive predicted that 'the next government will have to generate around £100 billion through tax rises and spending cuts to deal with the country's budget deficit'. Discuss the likely impact of such a restrictive fiscal policy on the UK economy		[10]

[Total 30 marks]

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Case study Question 2: TYS 2016 Q2

Question 2: Inflation policies in Brazil and Japan

Extract 4: Brazil inflation rate exceeds official target range in June

Consumer prices provided further worrying economic news for Brazil, as the inflation rate exceeded the government's official target range in June 2014. Brazil's inflation target is 4.50%, with an allowed range of 2.50% – 6.50%. Brazil's 12-month inflation index rose to 6.52% last month, up from 6.37% in May.

Inflation has been causing problems for Brazil for years as millions moved out of poverty to create a new consumer class. Brazilians' new buying power was not matched by increased production of goods and services. With higher demand and stagnant supply, prices began to move up. The inflation index got into a steady upward trend by mid-2012 and broke the target ceiling in March 2013, prompting the central bank to raise the interest rate from 7.25% in April 2013 to 11% in April 2014 in an effort to curb inflation. But economists say those efforts are not enough.

The problem for some is that Brazil's government spends too much, and that cash welfare benefits are also contributing to inflation by increasing the purchasing power of millions of consumers. Measures to maintain high employment are also increasing labour costs, which is further fueling prices.

Price increases are just one piece of the bad news for the Brazilian economy. The nation's manufacturing sector is in a slump and business confidence is down. Analysts project that Brazil's economy will struggle to grow even 1% this year.

The combination of rising prices and weak production makes life difficult for policy makers. The usual policy against inflation is to raise the cost of borrowing. But if the central bank continues to raise interest rates the economy may grind to a halt, or even shrink. A recession this year is not out of the question. The government has tried to kick-start growth via tax cuts and other incentives, with mixed results. Critics fear these policies may make inflation even worse. Government officials, however, contend that a global economic recovery is in the making and Brazil stands to benefit as larger economies such as the US and the EU get stronger and import more.

'Inflation is under control and will end 2014 within the limits of the range,' the President of Brazil's central bank said in an interview last week. He said the full impact of Brazil's tight monetary policy is still to be felt, and the inflation rate will move 'towards the target,' in the next couple of years, although he acknowledges that, for now, 'inflation will remain at high levels'.

Source: Paulo Trevisani, *Wall Street Journal*, 8 July 2014

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Extract 5: Japanese consumer price inflation still below target

Japanese core consumer inflation, which excludes the volatile prices of fresh food but includes oil products, hit 3.3% in July 2014, compared with the same month in 2013. In April 2014, however, the government had increased the sales tax from 5% to 8%. If the effects of this rise are excluded, the inflation rate stood at 1.3%, still below the 2% target that the central bank pledged to meet next year.

Household spending fell more than expected, and factory output remained weak in July 2014 after plunging in June, suggesting that disappointing exports and the sales tax increase may drag on the economy longer than expected. While the central bank, the Bank of Japan, has no plans to expand monetary stimulus anytime soon, it will be under pressure to act if the economy fails to gather momentum.

Household spending was 5.9% lower in July 2014 than in July 2013, because the higher sales tax hurt purchasing power and bad weather kept consumers at home over the summer. A senior economist said "Consumer spending will recover, but the pace will be slow. I don't see the need for a big fiscal spending package, but the government may try to come up with some form of economic stimulus for next year."

Separate data showed that companies continued to cut back on production as sluggish demand at home and overseas led to a build-up in inventories, another sign that the pain of the tax increase is proving to be more severe than initially expected. Despite weak signs in the economy, the Bank of Japan is optimistic that a tightening job market will lead to higher wages and more income for households to spend, thereby keeping Japan on track to meet its 2% inflation target.

The unemployment rate, however, rose to 3.8% in July 2014 from 3.7% in June. The jobs-to-applicants ratio was 1.1, the highest for 22 years. In addition, industrial output rose by only 0.2% in July, far less than the 1% increase projected by a group of economists. That was a weak rebound from a 3.4% fall in June — which had been the fastest drop since the March 2011 earthquake and tsunami — as companies slowed production in response to weak exports and slack post-tax domestic demand. Manufacturers expected to raise output 1.3% in August and 3.5% in September, although these estimated increases were largely in reaction to sluggish output in June and July.

Many analysts agree with the Bank of Japan that growth will rebound, though some warn that the recovery may falter if the tax-increase pain is prolonged and exports fail to increase.

Source: *Reuters*, 29 August 2014

Table 2: Annual percentage rate of increase in the consumer price index

Year	Brazil	Japan
2009	4.90	–1.34
2010	5.04	–0.72
2011	6.63	–0.28
2012	5.40	–0.03
2013	6.21	0.36
2014	*6.20	**2.67

*Monthly average to June 2014
**Monthly average to April 2014

Source: *Inflation.eu*

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Questions

a) State what happened to consumer prices in Brazil and Japan between 2011 and 2012. [2]
b) Japan increased its sales tax in April 2014. Using a diagram, explain what determines the size of the increase in the price of a good following such a tax increase. [4]
c) I) Use aggregate demand and supply analysis to explain the causes of inflation in Brazil in 2014. [4]
ii) Explain how the strengthening of the US and the EU economies might affect prices in Brazil. [2]
d) Assess the likely effectiveness of a government policy of changing interest rates in solving the problems of the Japanese economy. [8]
e) Discuss whether the Brazilian or the Japanese government has the more damaging and persistent inflationary problem. [10]

[Total:30]

Case Study Question 3: TYS 2014 Q2 (Optional)

Growth and competitiveness

Extract 4: India's economic growth better than forecast but below potential

India's economy grew faster than expected in the three months to the end of June, easing some fears about a sharp slowdown in Asia's third-largest economy. Annual growth was 5.5% in April to June although analysts had forecast a rate of 5.2%. However there are concerns that a lack of reforms, slowing factory output and investment, may hurt long-term growth and that the rate of growth is below potential.

India's economy has been hit by a number of negative factors in recent months. A key external factor, slowing global demand, has affected the country's exports and reduced industrial production. India's factory output fell 1.8% in June from a year earlier, the third fall in four months. At the same time, the government has been locked in a political battle with the opposition that has prevented the implementation of key reforms. To make matters worse, a number of corruption scandals have not only harmed India's image but also lowered investor confidence. Foreign direct investment in India fell by 78% in June from a year earlier. Analysts said the government needed to take action to improve the investment climate in India if the country was to maintain a high rate of growth in the future.

As India's economy has slowed in recent months, there have been calls for the central bank, the Reserve Bank of India, to cut interest rates in order to spur growth. The central bank lowered its main interest rate in April this year from 8.5% to 8.0%, the first cut in three years. However, despite calls for further cuts, it has kept the rates unchanged since then, in an attempt to keep consumer price growth in check. The rate of inflation has come down gradually in the past few months: consumer prices in India rose by 6.9% in July from a year earlier, which was down from a rate of 7.3% in June and 7.6% in May.

Source: BBC News, 31 August 2012

Table 1: Annual growth rates in selected countries 2007 – 2011

% change in real Goss Domestic Product (GDP)

	2007	2008	2009	2010	2011
Switzerland	3.6	2.1	-1.9	2.7	2.1
Singapore	8.9	1.7	-1.0	14.8	4.9
United States	1.9	-0.4	-3.5	3.0	1.7
China	14.2	9.6	9.2	10.4	9.3
India	9.8	3.9	8.2	9.6	6.9

Extract 5: The Global Competitiveness Index 2012 – 2013

Since 2005, the World Economic Forum (WEF) has based its competitiveness analysis on the Global Competitiveness Index (GCI). This measures the foundations of national competitiveness.

Competitiveness is defined as the set of institutions, policies and factors that determine the level of productivity of a country. The level of productivity, in turn, influences the level of prosperity that can be enjoyed by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. In other words, a more competitive economy is one that is likely to sustain growth.

Many determinants drive productivity and competitiveness. Understanding the factors behind this process has occupied the minds of economists for hundreds of years, beginning with Adam Smith's focus on specialisation and the division of labour in the eighteenth century. The WEF reports the results of the twelve 'pillars' that it identifies as crucial to competitiveness, but it is important to keep in mind that they are not independent: they tend to reinforce each other, and a weakness in one area often has a negative impact in others. For example, a strong capacity for innovation will be very difficult to achieve without a healthy, well-educated and trained workforce.

Twelve pillars of competitiveness

Pillar 1 The quality of the economy's institutions
Pillar 2 Infrastructure

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Pillar 3 The stability of the macroeconomic environment
Pillars 1 to 3 are crucial in providing the stability required to encourage productivity to be achieved. For example, effective modes of transport enable entrepreneurs to get their goods and services to market in a secure and timely manner and facilitate the movement of workers to the most suitable jobs. In addition, firms cannot operate efficiently when inflation rates are out of hand.

Pillar 4 Health of the workforce: A healthy workforce is vital to a country's competitiveness and productivity. Workers who are ill cannot function to their potential and will be less productive.

Pillar 5 Level of education and training: Quality education and training are particularly crucial for economies that want to move up the value chain beyond simple production processes.

Pillar 6 Goods market efficiency: The best possible environment for the exchange of goods requires a minimum of impediments to business activity through government intervention. For example, competitiveness is hindered by distorting or burdensome taxes and by restrictive rules on foreign direct investments (FDI) as well as on international trade. Protectionist measures are counterproductive as they reduce aggregate economic activity.

Pillar 7 Labour market efficiency: The efficiency and flexibility for the labour market are critical for ensuring that workers are allocated to their most effective use in the economy and provided with incentives to give their best effort in their jobs.

Pillar 8 Extent of financial market development: An efficient financial sector allocates the resources saved by a nation's citizens, as well as those entering the economy from abroad, to their most productive uses. It channels resources to those investment projects with the highest expected rates of return.

Pillar 9 Extent of technological readiness: This refers to the agility with which an economy adopts existing technologies to enhance the productivity of its industries.

Pillar 10 Size of market: This affects productivity, since large markets allow firms to exploit economies of scale. Evidence shows that trade openness is positively associated with growth since this extends the size of the market available to firms.

Pillar 11 Quality of a country's business networks: Having many local supplies near one another and interacting with each other improves efficiency and innovation.

Pillar 12 Technological innovation: Although substantial gains can be obtained by improving institutions, building infrastructure, reducing macroeconomic instability or improving human capital, the extra gains from improving these factors eventually seem to diminish. The same is true for the efficiency of the labour, financial, and goods markets. In the long run, standards of giving can be largely enhanced by technological innovation.

Source: *Global Competitiveness Report 2011 – 2012*, World Economic Forum

Table 2: Global Competitiveness Index: selected countries 2011 – 2012 and 2012 – 2013

Country	Rank 2011/2012	Rank 2012/2013
Switzerland	1	1
Singapore	2	2
United States	5	7
China	26	29
India	56	59

Source: *Global Competitiveness Report 2011 – 2012*, World Economic Forum

Questions

(a) Which economy in Table 1 shows the greatest variation in its growth rate? **[1]**

(b) Explain how productivity and living standards are related. **[2]**

(c) Explain how the cut in interest rates suggested in Extract 4 might 'spur growth'. **[3]**

(d) Explain how three of the supply-side factors identified in Extract 5 might affect the productivity of an economy. **[6]**

(e) Discuss how a country such as India or China can have a high growth rate despite a low standing in the Global Competitiveness Index. **[8]**

(f) Discuss whether competitiveness is more likely to be improved by adopting free market policies or by government intervention. **[10]**

[Total: 30]

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