

**RAFFLES INSTITUTION
YEAR 6 H2 ECONOMICS 2023**

MACROECONOMIC POLICIES: SUPPLY SIDE POLICIES

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At the end of this lecture series on Supply-Side Policies, you should be able to:

1. Explain the **general objective** of supply-side policy
2. Analyse the **impact** of these policies on cost of production, productive capacity, level of technology, degree of competition trade in goods and services and level of enterprise **using AD-AS analysis**.
3. Explain the **various types of supply-side policies** – for example, supply-side tax cuts, deregulation and competition policies, elimination of structural bottlenecks, removal of bureaucratic red-tape, promoting labour mobility and productivity.
4. Explain examples of supply-side policies implemented by the **Singapore government**.
5. Discuss how governments use supply-side policies (impacting AS) to **achieve macroeconomic objectives**.
6. Evaluate the **effectiveness of supply-side policies** – for example, accuracy and availability of information, time lags, uncertainty of outcomes, policy acceptability and policy conflicts.

1 Introduction

Prior to the Great Depression in the 1930s, public policy was shaped by the views of classical economists who advocated *laissez-faire* and the belief that recessions were short-run phenomena that corrected themselves through free market forces. Discretionary fiscal policy was seldom used to influence the performance of the macroeconomy explicitly.

Following the onset of the Great Depression, macroeconomic discussion has been dominated by discussions of aggregate demand, and how to create more of it through monetary and fiscal policies. However, during the 1970s, the problem was **stagflation**: an **slow growth and high inflation**. Demand management could not solve stagflation: an increase in AD would only worsen inflation while a decrease in AD would worsen unemployment. The solution to stagflation was to switch from demand management to "supply-side policies". The logic was powerful: The only way to achieve lower prices and higher output was to make economies more productive.

Governments across the world have increasingly focused on supply-side policies; these are policies designed to increase the potential output of economies and hence long-run aggregate supply. This focus has reflected the resurgence in interest amongst academics in the determinants of growth and, in particular, attempts to gain a better understanding of the sources of productivity increases, such as technological progress and innovation.

2 Objectives of Supply-Side Policies and its Impact

Most governments believe that improved supply-side performance is the key to achieving sustained growth without causing a rise in inflation. Supply-side economic policies are therefore designed to **improve structural long-term performance of an economy**, in other words, to **improve the productive capacity of an economy by increasing the quantity, quality and mobility of factors of production in an economy**.

Many supply-side policies are micro-economic policies aimed at making markets and industries operate more efficiently and contribute to a faster underlying-rate of growth of real national output.

Note:
Supply-side policy on its own however is not enough to achieve sustained economic growth. It must be supported by a high enough level of aggregate demand.

Diagrammatically,

- 1) An increase in the productive capacity of an economy from YF_0 to YF_1 is illustrated by a rightward shift of the AS curve from AS_0 to AS_1 . This is also known as potential growth (Figure 1).

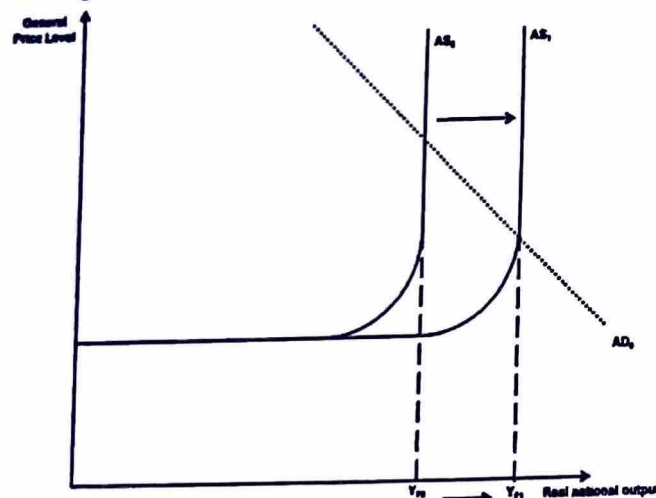


Figure 1: Rightward shift of AS Curve

- 2) The increase in the productive capacity of the economy from YF_0 to YF_1 (e.g. through an advancement in level of technology) can also be accompanied by a fall in unit cost of production which is illustrated by a rightward and downward shift of the AS curve respectively from AS_0 to AS_1 (Figure 2).

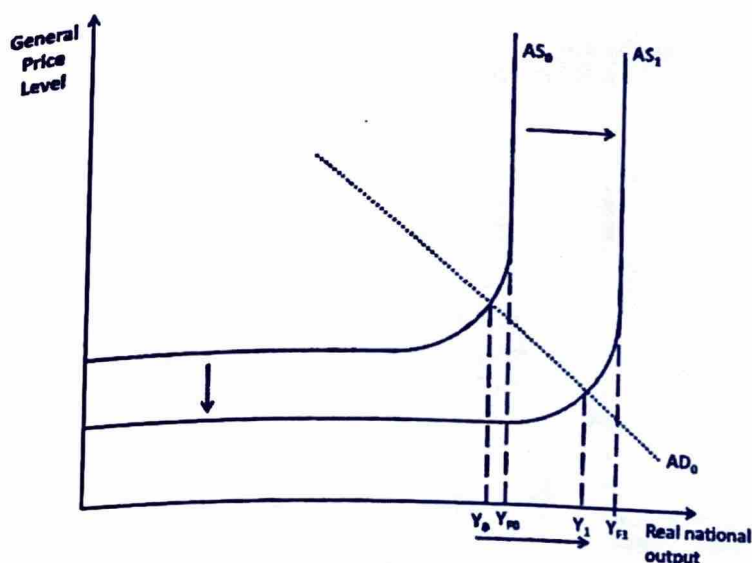


Figure 2: Rightward and downward shift of AS Curve

Key concepts to focus on therefore are Incentives, enterprise, technology, mobility, flexibility and efficiency.

Sectional Summary:

- ❖ The key objective of supply-side policies is to improve the structural long-term performance of an economy
- ❖ When discussing the effect of supply-side policies, an attempt should be made to link to one of the three possible effects of the policy on the AS (on per unit COP/ on productive capacity/ on technology)

3 Types of Supply-Side Policies

There are two broad approaches to supply-side policies: **market-oriented policies** and **interventionist policies**.

3.1 Market-oriented Supply-Side Policies

Market oriented supply-side policies aim to **reduce the role of the government** and **enable the market to work more freely** by putting more emphasis on market incentives and competition. They are designed to give the private sector more freedom. Such market oriented supply-side policies can be targeted at the product or labour markets.

Key policies:
The main market-orientated policies are pro-competition policies, deregulation, and tax cuts.

3.1.1 Market-oriented Supply-Side Policies for Product Markets

Product markets refer to markets in which all kinds of goods and services are made and traded, for example the market for airline travel; smart-phones, new cars; pharmaceutical products and the markets for services such as banking and mortgages. Supply-side policies in product markets are designed to **increase the degree of competition and efficiency in product markets**.

a. Privatisation

Privatisation is defined as the sale, in whole or in part, of public enterprises to the private sector. Thus, it involves the transfer of state-owned assets from the public sector to the private sector. Supporters of privatisation believe that the private sector and the discipline of free market forces are a better incentive for businesses to be run efficiently and thereby achieve improvements in economic welfare. Privatisation is regarded as an important supply-side policy designed to drive competition and reduce X-inefficiency while improving dynamic efficiency. This is because private companies have a profit incentive to be more efficient.

With private ownership of resources and without government funding, the firm must survive on its own while subjected to competitive pressures. This gives the firm the incentive to be less X-inefficient by cutting costs in order to be profitable and survive the competition. As a result, the unit cost of production falls and there is a downward shift of the AS curve. The profit-maximising firm will also have greater incentive and ability to be dynamically efficient by innovating to develop new or better products and finding better ways of producing goods and services. For instance, innovation and investment in new machines and technology may enable an increase in labour productivity (meaning an increase in output per worker in a given time period) which can cause the AS curve to shift to the right. Hence privatisation can lead to a rightward and downward shift of the AS curve from AS_0 to AS_1 (Figure 2).

Over the last 30 years, many former state-owned businesses have been privatised across many countries. In the UK, the process has led to a sizeable reduction in the size of the public sector. State-owned enterprises now contribute less than 2% of GDP and less than 1.5% of total employment.⁷ In Singapore, Singapore Telecommunications (Singtel) was privatised in 1992, while the Singapore Mass Rapid Transit Corporation became private in 1998. In both cases, the rationale was for more efficient operations by the private sector.

Recall:
What are some of the issues related to government operations?

However, some may argue that the transfer of ownership merely replaced a public sector monopoly with a private sector monopoly that then required regulation. Moreover, there have been instances of state assets that were sold off by the government and that the consequences of privatisation have been a decrease in investment and large-scale reductions in employment as privatised businesses have sought to cut their operating costs.

b. Pro-competition policies

Pro-competition policies aim to promote greater freedom and competition in the private sector. Greater competition (arising from successful implementation of pro-competition policies) forces firms to be more efficient in the way they use scarce resources and gives firms incentive to reduce cost of production to retain market share. Firms will have greater incentive to be less X-inefficient. In addition, by innovating and investing in new products and processes to gain a competitive edge on their rivals, not only will the overall unit costs of production be lowered, but the productivity of factor inputs will improve which means an increase in output per worker. Hence, AS curve will shift downwards and rightwards (Figure 2).

Key Point:
A rise in the degree of competition will lead to a rise in AS via the fall in unit cost of production and potential rise in productive capacity

Some examples of pro-competition policies are explained below:

- (i) A tougher competition policy regime which includes policies designed to curb anti-competitive practices such as price-fixing cartels and other abuses of a

⁷ Examples in the UK include British Gas, British Telecom, British Airways, British Steel, British Aerospace, the regional water companies, electricity generators and distributors, and the railways. Privatization is designed to break-up state monopolies and create more competition. The government also created utility regulators such as The Office of Communications (Ofcom) and The Water Services Regulation Authority (Ofwat) who have, in the past, imposed price controls gas and electricity supply and telecommunications.

dominant position. This results in more competition that not only reduces the market power of large firms to raise prices, but also encourages competing firms to be more efficient.

The Competition and Consumer Commission of Singapore

Under the 2004 Competition Act, companies in Singapore may be prevented from merging if the move substantially lessens competition or distorts it. Exceptions will be made if the proposed merger results in better economic efficiencies or greater innovation or choice, higher quality or lower costs.

- (ii) **Deregulation / Liberalisation** refers to the opening up of markets to greater competition. Removing barriers to entry to new firms through lifting existing legal restrictions to entry such as patents for certain regulated industries induces incumbent firms to become more efficient to survive the competition arising from newer and more innovative firms entering the industry. This could lead to a downward and rightward shift of the AS curve. Liberalisation of markets also encourages greater levels of entrepreneurship, potentially enabling productive capacity to expand.

Examples in Singapore include the deregulation of the telecommunications industry in 2000, which terminated Singtel's monopoly on the domestic market, and allowed other telcos to operate. The Energy Market Authority has progressively opened the retail electricity market to competition, greatly reducing the monopoly power of the Singapore Power (SP) Group. Since 1 April 2018, the launch of the Open Electricity Market has enabled households and businesses to exercise their choice in buying electricity from a retailer at a price plan that best meets their needs.

- (iii) **Promoting freer trade between nations** via reduction or elimination of tariffs or other restrictions on imports creates competition for domestic producers. In order to survive, domestic firms need to be less X-inefficient and more dynamically efficient.

Note:
More details under
'Globalisation and
the International
Economy'.

However, in the long run, there may be a re-concentration of the market as uncompetitive firms incur losses and leave the industry. The danger of larger and better established foreign or local firms gaining at the expense of small local firms may also occur especially in today's globalised economic environment.

3.1.2 Market-oriented Supply-Side Policies for Labour Markets

In terms of labour markets, supply-side policies generally *increase labour market flexibility and improve the quality and quantity of labour* in a given country.

a. Reducing the power of trade unions

Overly aggressive trade unions are a barrier to the free working of a labour market as these unions tend to push the wage above the market equilibrium, and, in the 70s especially, were quite disruptive in terms of going on strike.

Refer to the Appendix 1 for how trade unions and tripartism work in Singapore

By reducing the ability of trade unions to unilaterally raise wages, firms now face lowered labour costs and thus their profits will probably rise. If the monopoly power of labour is reduced, the extent of wage-push inflation will also be reduced (Figure 1). This could encourage and enable more investment and hence increase the productive capacity of the economy (Figure 2).

At the same time, imposing restrictions on their ability to take industrial action helps to reduce / eliminate the incidence of work stoppages or industrial strikes so that loss of output due to strikes is prevented. Overall, this increases efficiency of firms as less time

Note:
Tripartism policy and incomes policies are highly relevant policies in the Singapore context.

Refer to Appendix 1.

is lost to strikes.

Improved partnerships between trade unions and employers can make a big contribution to raising productivity and improving the flexibility of workers in their jobs. In Singapore, the tripartite policy ensures harmonious industrial relation between the employers (represented by the Singapore Employers Federation), the workers (represented by NTUC) and the government (represented by the Ministry of Manpower). Representatives from all 3 parties sit on the National Wage Council (NWC).

b. Tax cuts

(i) Effects on labour supply

Besides increasing aggregate demand, reducing personal income tax has the supply-side effect of encouraging workers to work and save. This is based on the belief that high tax rates are disincentives to hard work and induce people to work less. A cut in marginal tax rates increases the attractiveness of work and simultaneously increases the opportunity cost of leisure. Hence, individuals will substitute work for leisure. This may lead to people working longer hours, an increase in the number of workers entering the workforce, a greater incentive to be more productive in their work, a rise in employment (assuming wages are flexible) and a rise in productive capacity, leading to a rise in aggregate supply (Figure 1).

Recap:
The opportunity cost of leisure is the wages that could have been earned if a person was working instead. The opportunity cost of leisure increases when income tax is reduced.

(ii) Effects on capital accumulation

Lower corporate tax provides an incentive for entrepreneurs to increase investment. If gross investment is greater than replacement investment, net investment will be positive which will increase the capital stock in the economy. As a result, productive capacity can increase. In addition, with greater accumulation of machineries, there will be an improvement in the capital-labour ratio. As a result of capital deepening, labour will become more productive, meaning output per worker increases, hence productive capacity increases as reflected by a rightward shift of the AS curve. (Figure 1)

Hence, with the acquisition of more fixed capital assets, the ability of the economy to produce goods and services in the future will increase. As such, it will allow the AD to increase continuously without fueling rising GPL. Hence, the economy can enjoy sustained economic growth as a result of both actual and potential economic growth when the productive capacity expands. The potential economic growth is reflected by the increase in the full employment level of national income in the economy when the productive capacity expands.

However, having a low tax rate as well as a range of tax and financial incentives alone are not sufficient to encourage foreign direct investment to raise a country's productive capacity. *Tax incentive wars*⁸ between countries may arise as they compete fiercely for foreign investment and talent. Thus, other factors such as political stability and having a conducive business environment (transparency in government regulations, ease and availability of credit, protection of intellectual property rights etc.) are just as critical, if not more so. In addition, despite the cuts in marginal rates of income tax in many countries, it has been commonplace for these to be offset by significant increases in other taxes.

Note:
The policy of the fall in tax cuts is deemed as a demand-management policy with supply-side effects.

c. Cuts in welfare benefits

The existence of a wide variety of income redistribution programmes has eroded the incentives to work in welfare states. Overly comprehensive unemployment compensation or benefits and welfare programmes reduce the incentive of unemployed labour to re-join the workforce and become economically active again. Thus, cutting such programmes may in fact stimulate some of the unemployed to find a job, thereby

⁸ In response to such damaging "tax-incentive wars", the Organisation for Economic Cooperation and Development (OECD) is working towards a global minimum tax rule.

Increasing the willingness of these people to work and accept jobs at lower wages. This increases the effective labour supply, thereby causing a rightward shift of the AS curve (Figure 1)

However, cutting benefits is a very dramatic solution which may not be well-received by the populous. Maintaining an appropriate level of social welfare spending is important in helping the economically disadvantaged and building social cohesion. This is all the more important in light of the widening income inequality experienced by countries all over the world⁹. In Singapore, the government has been trying to ensure that there exists a social safety net so that those who are disadvantaged will not be left behind.

Sectional Summary:

- ❖ Market Oriented Supply-side policies influence aggregate supply through enabling market forces to work more freely in both product and labour markets.
- ❖ Policies may have an impact on either per unit cost of production and/or productive capacity.
- ❖ In product markets, such policies include privatisation, deregulation and competition policies and encouraging entrepreneurship.
- ❖ In labour markets, such policies include reducing the power of trade unions, income policies, supply-side tax reforms and reducing welfare benefits.

3.2 Interventionist Supply-Side Policies

In contrast to market-oriented policies, interventionist supply-side policies involve **direct government intervention** in markets. These policies rest on the view that the free market fails to achieve certain desirable outcomes such as low unemployment rate, adequate incentive for education and training, investment and research and development. Such limitations of the free market provide the case for government intervention to stimulate supply-side improvements.

a. Education and Training

One of the objectives of the manpower policies is to reduce labour market imbalances or bottlenecks. This can be achieved through investment in human capital via education and training. Interventionist policies are required because firms may be unwilling to invest in training their workers, as the benefits to them would be lost when workers leave their firms. Nonetheless, education and training can help to improve the skills and quality of the work force, benefitting society as a whole. Educational policies designed by the government can thus be geared towards meeting the needs of key industries.

The Singapore government has an array of education and labour policies to ensure that all workers have opportunities to train and upgrade themselves and such that the skills of workers remain current. These include:

- Continuing Education and Training (CET) 2020 Masterplan
 - Developed by the Singapore Workforce Development Agency (WDA), it outlines broad strategies for keeping our labour force competitive. The Continuing Education and Training (CET) Masterplan was also developed to enable workers to find their niches, seize opportunities in new growth areas and remain relevant and employable in Singapore's vibrant economy. In this, the government partners leading education and training providers, from both the public and private sectors, to set up quality CET centres that offer high quality and industry-relevant training courses, where Singaporeans and PRs get to enjoy 90% funding support for training programmes.

Note:

Interventionist supply-side policies such as education and training, and grants for R&D are frequently applied in the exams.

Recall:

What is the microeconomic rationale and effects of such policies?

Refreshed CET Masterplan:



⁹ Due to concerns over the negative impacts on the unemployed, some countries are trying to implement universal basic income, where every adult citizen receives a set amount of money regularly. However, evidence is still lacking on whether such policies work.

- o Skills Development Fund (SDF) - Offers subsidies of up to 90% of training costs
- Applied Study in Polytechnics and ITE Review (ASPIRE) (2015) - Aims to have better structured internships for Polytechnics and ITEs with closer industry relevance
- SkillsFuture (2015):
 - SkillsFuture credit: All Singaporeans aged 25 and above will be given \$500 worth of credits to be spent on registered training and upgrading courses.
 - SkillsFuture Study Award: This is for early to mid-career Singaporeans who are committed to developing and deepening their skills in key sectors and have relevant working experience in such sectors. Recipients receive a monetary award of S\$5,000, which one can use to defray out-of-pocket expenses associated with the course that one will be taking.



However, the effectiveness of skills upgrading largely depends on receptivity of workers which is dependent on a combination of factors. For instance, brain plasticity tends to fall as age increases past 25 years, hence some adults may face more difficulty in absorbing new knowledge and in learning new skills. Hence, the additional effort may deter some from actively participating in retraining and skills upgrading programmes. Older workers might also have less incentive to retrain because they have fewer working years. Furthermore, retraining entails an opportunity cost, low skilled employees may not see the need for training if they deem that their jobs do not require higher skills and if they perceive that there is little opportunity for progression. Hence such schemes may not necessarily achieve their intended effects of increasing the skills levels of such workers.

Besides, skills training and upgrading is long term in nature as it takes time to acquire new skills and to be adept at them, hence the policy may not be as effective in addressing issues in the short run as results will only materialize in the long term. There may also be the problem of a loss in productivity of workers during training since they will not be at work and this could potentially reduce profits for the firms and hence reduce employers' incentives to send their workers for training, defeating the purpose of such programmes. In addition to all the above limitations, it is perhaps also important to note that the burden of financing course subsidies falls on the part of the government.

Case study on Singapore:

Progressive Wage Model

The Singapore Ministry of Manpower (MOM) has adopted the progressive wage model (PWM) to provide more sustained support for lower-wage workers in order to ensure that growth is inclusive.

Under PWM, firms are mandated to pay workers in cleaning, security and landscape sectors a minimum entry-level basic wage based on their skillset. For instance, general cleaners employed under government contracts must be paid a basic wage of at least \$1,200 per month. In addition, wage ladders and training and career pathways enable workers to upskill to achieve greater career progression to earn higher wages in the future. The PWM is currently being implemented in the landscaping, cleaning, and security industries.

The PWM is deemed to be both pro-equity and pro-growth because the PWM helps to increase wages of low-wage workers through upgrading skills and improving productivity. The PWM benefits low-wage workers by mapping out a clear career pathway for their wages to rise along with training and improvements in productivity and standards. Higher productivity not only improves business profits for employers and better service standards and quality for service buyers, but also increases productive capacity of the economy. (Diagram 1)

However, the PWM is not without its limitations. Increased productivity from these low-wage jobs might be impossible to achieve due to a lack of room for increased efficiency. For instance, if a dishwasher can only wash 40 dishes an hour with current technology, then there is no way for the PWM to raise that rate to increase the dishwasher's productivity. Hence, while the PWM can lead to a reduction in income inequality, it will not improve potential growth. One way to increase the productivity of these low-wage workers is to increase the technological capabilities of that worker. This requires the industry itself to invest in better technology and to allow workers to use the improved technology after training.

Grants to Encourage Research and Development (R&D)

b. Research & Development (R&D) refers to innovative activities undertaken by corporations or governments to develop new products, improve existing ones or lower the unit cost of production.

The biggest barriers to innovation are risk aversion, uncertainty about the outcome of R&D, a lack of high-skilled workers to carry out R&D and a lack of information on technology and markets. Though economically desirable to society, R&D may be privately unprofitable for a firm. Hence, the government may sponsor R&D in certain industries like aerospace or life sciences to spur more R&D efforts in such areas where there are potentially large external benefits. Successful R&D efforts leading to technological breakthroughs help raise productive capacity in the economy and lower unit costs of production. This results in an outward shift of the AS curve (Figure 2).

In 2016, the Singapore government unveiled the new Research Innovation Enterprise (RIE) 2020 Plan with a \$19 billion commitment to support R&D efforts over the next five years. The Research Incentive Scheme for Companies (RISC), launched by the Singapore Economic Development Board (EDB), is aimed at encouraging companies in Singapore to conduct or expand their research and development (R&D) activities in science and technology. This includes co-funding project costs such as manpower, training, consultancy and software. The government will also sustain R&D spending at about 1% - 2% of GDP. This is more than the UK, but comparable to the US and public spending in other research-intensive economies.

However, investment often involves risks too. The projects that claim to be developing "breakthrough" or "revolutionary" technologies get approval quickly. The results of R&D are not guaranteed and there is a possibility that R&D efforts might not yield any results despite aggressive government support. There is also a long gestation period before R&D efforts are able to yield tangible and impactful results. At the national level, though, the benefits of investment might well have substantially outweighed the costs and thus it would be socially desirable for firms to have taken the risk.

Note:
In light of tightening government budgets globally, research in the developed countries have increasingly been driven by the private sector, which in turn tends to focus on "short-term" R&D and projects that are more likely to be profitable.

c. Encourage Small Business Start-Ups / Entrepreneurship

Another supply-side measure for the product market is to encourage people to become entrepreneurs. This can be done through the extension of loans and provision of technical expertise and support for new start-ups and small businesses. Governments may also choose to remove bureaucratic red tape to increase the ease of doing business. The entry of such innovative new firms inject more competition into the industry. Furthermore, start-ups often bring with them new technology and new methods of production which increase productivity (thus reducing per unit costs) and boost the productive capacity of the economy (Figure 3).

In Singapore, the government helps SMEs through statutory boards and trade associations and chambers (TACs). Examples of statutory boards include Enterprise Singapore and the Infocomm Media Development Authority (IMDA) while trade associations include the Singapore Manufacturing Federation (SMF) and the Restaurant Association of Singapore (RAS). Specifically, Enterprise Singapore offers tax incentives

and grants for productivity improvement expenses (e.g. the Productivity Solutions Grant), and together with local banks, also jointly offer loans at attractive interest rates under the Enterprise Financing Scheme (EFS).

However, despite the fiscal boost in terms of government subsidies and grants available to new start-ups in Singapore, the high expense and effort of starting a business, the high risk involved and the high number of failures often deter potential entrepreneurs from taking the plunge. An average of 30% of Singaporean start-ups fail within the first 3 years.

d. Nationalisation

Nationalisation refers to the government taking over strategic industries like the transport and telecommunications industries into public ownership. Through nationalisation, having certain key industries under public ownership may result in higher investment than if they were under private ownership. This could be because governments' greater financial abilities relative to a poorly performing private company, or because of better coordination within the industry and greater internal economies of scale reaped as a result of nationalisation. The higher investment results in increased productive capacity, causing a rightward shift of the AS curve (Figure 1).

In Singapore, public utilities and port operations are nationalised industries controlled by the Public Utilities Board (PUB) and the Port of Singapore Authority (PSA) respectively. The PUB was nationalised due to the various levels of coordination required in the collection, production, distribution and reclamation of water in Singapore. There are also significant internal economies of scale to be reaped in both industries, as their operations involve large and indivisible machinery and equipment that are more efficiently used when larger outputs are produced.

However, there is an opportunity cost of spending tax revenue on the nationalised industry. Furthermore, inefficiencies may arise from government ownership as there is a lack of incentive to reduce costs and diseconomies of scale that arise from overstaffing.

Other labour market policies

a. Income policies (Wage Guides/ Flexible Wages/ Wage Freeze)

The basic wage guidepost is that wage rates in all industries should be flexible, i.e. rise in accordance with the rate of increase in labour productivity in different industries. Wages are allowed to rise but should lag behind or at best, keep pace with the rate of productivity growth. This is to ensure that increase in unit labour cost is not higher than increase in labour productivity. This prevents AS from falling due to rising cost of production.

In Singapore, the NWC was designed to bring wage increases in line with national productivity growth. The NWC improved the flexibility of the labour market as it was willing to accept various wage recommendations that have helped the economy to get out of the recessions of 1985, 2001 and 2003. Voluntary wage restraints such as the 2-year wage freeze for civil servants and the reduction in employers' CPF contribution rate from 25% to 20% were used during the 1985–86 recession.

The wage structure in Singapore has variable components that allow for flexibility of wages. The Annual Wage Supplement ("13th month payment") and bonuses allow for firms to vary the annual wages of employees. In 1999, the Monthly Variable Component (MVC) was also introduced to allow wages to vary from month to month.

However, wage guides are voluntary while variable wage components are negotiable. Voluntary wage guides face the issue of non-compliance, especially since trade union leaders would have to abandon their primary objective of negotiating for higher labour wages. Thus, voluntary cooperation from trade unions may be limited. For policies such as flexible wages and wage freeze to work, workers themselves must be convinced of the necessity of such policies and accept them in view of the long-term

benefits, even at short term cost. The employers must also show willingness to reinstate or increase wages in times of economic growth or improved company performance. Clear communication and cooperation among the government, employers and trade unions are essential. Singapore is one of few countries in which the above policies have been fairly successful, again due to the tripartite partnerships led by the NWC.

b. Wage Subsidies¹⁰

Wage subsidies can be defined as any transfer from the government that is able to reduce the cost of labor and/or increase take-home pay. In the market for labour, a wage subsidy increases the demand for labour which causes the wage received by workers to increase. Although the wage paid by firms fall, the workers receive a higher wage because of the wage subsidy given by the government.

One of the main reasons for providing wage subsidies include giving job opportunities to workers who would otherwise be unemployed. In the absence of wage subsidies, these workers might face long spells of inactivity or unemployment that reduce their human capital, or take on jobs that will not realize their potential productivity. Wage subsidies, in this case, have the potential to increase workers' employability through "learning by doing" and by training opportunities associated with having a job. Workers could acquire both "hard" (occupational) skills and "soft" skills, such as motivation and appropriate workplace behavior. These dynamic effects could make a temporary subsidy have a permanent effect on workers' productivity and through this channel the structure of employment and the unemployment rate.

To safeguard the livelihoods of local workers amidst the economic disruptions caused by COVID-19, the Singapore government implemented the Jobs Support Scheme (JSS). Under the scheme, wage subsidies were provided to help reduce business costs and to help viable companies tide over the crisis and minimise unemployment. Recently announced at Budget 2020, the Jobs Support Scheme (JSS)¹¹ will help enterprises retain their local employees during this period of uncertainty. Employers will receive an 8% cash grant on the gross monthly wages of each local employee for the months of October 2019 to December 2019, subject to a monthly wage cap of \$3,600 per employee. During the 2008-2009 Financial Crisis, the government launched a similar programme called the Jobs Credit Scheme which provided businesses with a cash grant. This helped to defray labour costs and encouraged businesses to retain their workers instead of laying them off in the downturn. This helps to moderate increases in the unemployment rate during severe economic recessions.

Similarly, under the Wage Credit Scheme, the government co-funds 20% of wage increments given to workers who earn less than \$5,000 a month (as of 2020 revision). This reduces cost of production of firms especially during times of recession, to reduce unemployment. With this scheme, employers are more likely to increase the wages of the low-income earners since it is co-funded by the government / keep workers employed. This will increase the wages of low-income earners / reduce the fall in income and reduce the income gap.

Measures like wage subsidies are however costly because taxpayers must face the cost of financing the wage subsidy e.g. with future tax increases. In addition, once begun, subsidies are hard to stop.

¹⁰ This category of policies apply mainly to Singapore, and is not the same as a minimum wage.

¹¹ Currently extended until end of 2022 only.

Sectional Summary:

- ❖ Interventionist supply-side policies involve direct government intervention in markets as that fail to achieve certain desirable outcomes.
- ❖ Some examples of such policies include education and training, nationalisation and grants to encourage R&D.
- ❖ Collectively, these policies may put a strain on government budgets. Thus, governments should determine the policy's suitability before putting it into action.

4 Effects of Supply-Side Policies on the Economy

4.1 Effect on Growth & Inflation

Supply-side factors often help to explain why some countries grow faster than others. In the long run, the growth of an economy is determined by supply-side factors such as technological progress, capital accumulation and the size and quality of the labour force.

Workers will become more skilled and efficient in their assigned responsibilities with retraining, education and the ability to work with machines to enhance their productivity. As such, output per unit of input will increase. Therefore, **as the quality of the workforce improves, the productive capacity of the economy will expand** and shift the AS curve to the right from AS_0 to AS_1 . Furthermore, re-training and skills upgrading of workers can also raise labour productivity. If labour productivity growth outpaces wage growth, unit labour cost is lowered as well, and overall AS curve shifts outward (Figure 2).

Furthermore, if there is an increase in Aggregate Demand from AD_1 to AD_2 as shown in Figure 3. Without any supply-side growth, the increase in AD will result in a higher general price level from OP_0 to OP_1 . To avoid inflation, the economy must achieve supply-side growth. Inflation is avoided as the general price level returns to OP_0 and both actual (OY_0 to OY_2) and potential (OY_{F0} to OY_{F1}) growth are achieved.

On the other hand, if inflation is caused by cost-push pressures, supply-side policy can help to reduce it by:

- Reducing the power of unions and/or firms (for example, through the use of anti-monopoly legislation) and thereby encouraging more competition in the supply of labour and/or goods.
- Encouraging increases in productivity through retraining, or by investment grants to firms, or by tax incentives, etc.

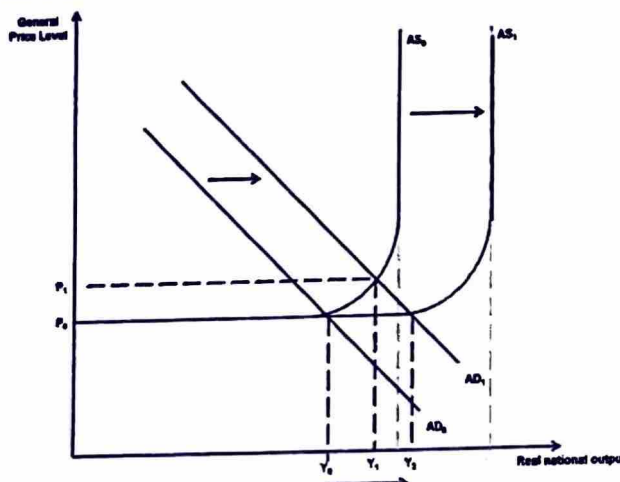


Figure 3 Sustained Economic Growth

Important:
You are required to identify and apply relevant supply-side policies given the macroeconomic problems faced in the economy, and illustrate the effects using the AD/AS framework and show how the policies work to alleviate the problem.

a) Effects on Inclusive Economic Growth

Improved training opportunities, especially vocationally oriented education for those who lose their job in an old industry, can improve the occupational mobility of workers in the economy too. This helps to **reduce the problem of structural unemployment** and **reduce loss of potential output** that can result from unemployment as firms will also be more willing to hire the more productive local workers who now possess better set of skills. As such, low-skilled workers can now move to higher value-added industry that pay much higher.

According to the Marginal Productivity Theory of Wage determination, wages are determined according to the marginal product of the labour and hence the theory postulates that there is a positive correlation between labour productivity and wages. Therefore, if wages of the low-skilled workers grow faster than the high-skilled workers, there will be a **smaller wage gap** between these workers. As such, it will also reduce the income inequality and serve to **promote inclusive economic growth**.

Note:
Marginal Productivity
Theory is not in the
syllabus.

In Singapore, the government has introduced more targeted supply side measures to ensure social mobility amongst the most vulnerable groups such as the lower-income and elderly Singaporeans. Measures such the Workfare Income Supplement (WIS) and elderly supplements the wages of older low-wage workers in their working years. For workers in sectors that may require more help, the Progressive Wage Model (PWM) helps to increase wages of workers through upgrading skills and improving productivity, hence reducing the income gap and fostering inclusive economic growth.

Supply-side measures such as skills deepening can reduce labour market rigidities and increase labour mobility by allowing workers to respond to job opportunities that perhaps pay higher. Differences in early education and school quality are the most important components contributing to persistent inequality across generations. As such, investments in education, beginning in early childhood can increase economic mobility, contribute to increased productivity of individuals. Consequently, allowing them to command a higher wage and narrow the income inequality, fostering inclusive economic growth.

Good-quality education act as a leveler and equalizer within society. In most countries, children born into rich families will go to the best possible schools and attain academic grades that open multiple opportunities for them. Such inherited privileges are not accorded to children born into poverty. They are already disadvantaged the moment they are born and struggle in overcrowded schools that lack trained and qualified teachers. Inevitably, educational inequalities result in income inequalities that must be addressed with effective and large-scale supply-side measures. Governments can take necessary measures to remove the segregation and stratification that prevail in the education system. If good quality education can only be accessed by children from wealthier families, it undermines social mobility and increases income inequality regardless of how hard one works. Therefore, developing national education plans that focus coherently and comprehensively on identifying pre-existing inequalities in education will improve the labour mobility, promoting inclusive economic growth.

Furthermore, supply-side measures for education can be made more efficient and more supportive by allocating a larger share of educational resources towards primary and secondary education to provide individuals with the basic literacy skills. However, perceptions of parents and individuals towards education and retraining, as well as the private costs involved in participating in these activities may hinder government's efforts in promoting inclusive economic growth. The Covid-19 pandemic has resulted in higher income inequality and weakened the foundation for inclusive economic growth. For example, the low-income households were not able to adapt to the learning adjustments made during the pandemic and limited capacity to participate in online learning options, which resulted in lower employment opportunities for them. Therefore, enhancing the access to good quality education is important for enhancing human capital that allows

the low-income and low-skilled workers to bargain for higher wages, reducing the income gap.

b) Effects on Sustainable Economic Growth

Certain supply-side policies also have the effect of improving the productivity of lower-wage workers, which addresses the issue of inclusive growth. Grants for R&D to switch to cleaner methods of production also reduces negative externalities in production for more sustainable growth.

4.2 Effect on Employment

When structural unemployment exist, job vacancies are not filled despite the existence of unemployment as there is a mismatch of skills. Supply side policies like provision for skills upgrading and training help to make workers more responsive to changes in job opportunities and also make them more adaptable and mobile as they pick up new skills.

When there are imperfections in the labour market due to strong trade unions, supply-side policies that reduce the monopoly power of unions moderate the wage increment demands of trade unions. This will help to bring down the level of unemployment by reducing the unemployment caused by excessively high wage demands of trade unions. With excessively high wages, firms are less able and willing to employ workers.

4.3 Effect on Balance of Trade and Balance of Payments

Countries with successful supply-side policies that boost export competitiveness through a reduction in per unit cost of production and/or increase product quality will see an increase in demand for their exports and an improvement in their current account position, *ceteris paribus*.

Lower unit labour cost as well as a well-educated workforce acts as a magnet for foreign investment in the economy. Hence, supply-side policies can also affect the Capital and Financial Account in the BOP as successful supply-side policies can incentivize foreign firms to invest more, thus increasing FDI into the country.

4.4 Effects on Standard of Living

Supply side measures such as reforms in trade union practices can have favorable outcomes on the standard of living. If reforms improve the relationship between the employer and the worker in the long-term, trade unions can facilitate stronger contracting and long-term job security. Furthermore, if workers are more satisfied with their working conditions, it can help to increase job satisfaction. As a result, such reforms can help to raise the overall non-material standard of living of citizens with lower level of stress. Moreover, with improved partnership between employers and trade unions, there will be a higher inflow of FDI due to greater certainty in the economy. This may create more employment opportunities in labour intensive industries that can help to raise the material standard of living of low skilled workers.

In countries with ageing population, skill upgrading can mitigate some of the negative consequences of workforce aging on productivity and growth. The stock of human capital in the labor market is therefore becoming more dependent on skill upgrading of the current workforce. Studies have shown that cognitive skills decline with age, along with physical strength and health. If cognitive decline threatens the productivity of older workers and negatively impact older workers' employability at the individual level. As such, supply-side measures such as training and re-training could then be effective tools to slow or even reverse the decline in older workers' cognitive abilities and allow them to earn a steady stream of income to maintain their standard of living.

For more details, see the discussion in Section 2.6.1 under Fiscal Policy.

Limitations of Supply-side Policies

5

Supply-side reforms on their own are insufficient to help an economy achieve sustained growth. There should also be a sufficiently high level of aggregate demand so that shifts in the LRAS would cause actual economic growth.

The effectiveness of the various supply-side policies depends on the **accuracy and availability of information to the government** in deciding on the appropriate policy measures and upon implementation. Moreover, supply side policies usually take a relatively long time for its effects to be felt. Therefore, a far-sighted and stable government which can plan for the long term is required for the implementation of supply-side policies. The outcomes of some supply side policies also tend to be **uncertain**.

Some supply-side policies also have certain **trade-offs**. For example, while privatisation pro-competition policies and tax cuts may benefit from greater efficiency in the market, this often exacerbates income inequalities as it may result in the formation of a private monopoly or monopsony, where the owners and top-level executives of the firm earn large bonuses at the expense of consumers and even lower-wage workers in the firm.

On the other hand, the PWM may encourage greater productivity and upgrading of skills, but also entails higher costs of business, which may negatively impact the cost of living and Singapore's competitiveness globally.

Some supply side policies might not be effectively executed with its intended effects if the government is limited by its fiscal budget. For example, given the size of the government debt in nations like Greece in 2010, it is difficult and **unfeasible** for the nation to implement education or training programmes for its workers. Supply-side policies may be faced with heavy political opposition.

Finally, in determining the most appropriate policy to use, a government should consider a **policy's acceptability**. Some supply-side policies, such as a cut in welfare benefits, may be seen as politically unpopular as it may have a direct negative impact on SOL in the short run.

Note: Because there is a broad and diverse range of supply-side policies, there are many limitations which pertain only to a selected group of supply-side policies. Students should exercise discretion in tailoring their limitations to the specific supply-side policy discussed.

A GENERAL NOTE: THE LINK BETWEEN DEMAND SIDE AND SUPPLY SIDE POLICIES

Policies can have **BOTH** demand side and supply side effects. Thus, it is important for governments to take secondary effects into account when working out their economic strategies. For example, demand management policies can have supply side effects. If a cut in interest rates boosts investment, there will be a multiplied rise in real NY (a demand side effect). But that rise in investment will also lead to increased productive capacity (a supply side effect). Likewise, many supply-side policies involve increased government expenditure. This is true for retraining schemes and R&D projects. They will therefore cause a rise in aggregate demand (demand side effect). Similarly, supply side policies of tax cuts designed to increase incentive to work and invest (supply side effect) will also increase aggregate demand (demand side effect).

**** In your answers to essay or case study questions on policies, you are expected to explain the primary effect arising from the policy first while keeping the secondary effect to the synthesis / evaluative comments.**

*****END*****

Appendix 1: Trade Unions & Tripartism In Singapore

(Source: <https://www.mom.gov.sg/employment-practices/trade-unions/about-trade-unions>; <https://www.mom.gov.sg/employment-practices/tripartism-in-singapore/what-is-tripartism>)

Trade Union:

A trade union is any association of workers or employers whose main aim is to regulate relations between employers and workmen for any of the following purposes:

- To promote good industrial relations between workers and employers.
- To improve the working conditions, as well as the economic and social status of workers.
- To increase productivity for the benefit of workmen, employers and the economy of Singapore.

Tripartism

Tripartism in Singapore refers to the collaboration among unions, employers and the Government. The tripartite partners are the Ministry of Manpower (MOM), the National Trades Union Congress (NTUC) and Singapore National Employers Federation (SNEF). This model differs from other countries – where the unions in Singapore have a close partnership with the government, instead of an adversarial relationship.

The key tripartite issues include:

- Job re-creation
- Raising the effective retirement age
- Training and upgrading the workforce
- Fair and progressive employment practices
- A flexible wage system

Video on CET Masterplan:

