ST ANDREW'S JUNIOR COLLEGE
JC2 H2 ECONOMICS 2024

PRICE STABILITY

In this set of notes, we will examine the next macroeconomic goal – Price Stability.

We examine the different types of unemployment, their causes, and consequences to different economic agents. We look at how unemployment may affect standard of living and the macroeconomic policies to deal with unemployment to improve the standard of living of a country.

Important concepts and tools and analysis

- Demand-pull inflation
- Cost-push inflation
- Deflation
- Consumer Price Index (CPI)

Key questions to consider

1. How does a country measure the level of inflation in their economy?
2. What are the different types of inflation? Do they share the same causes?
3. How does inflation affect the different economic agents (consumers, producers, government) in an economy?
4. Can all types of inflation be solved with the same policy? Are there particular circumstances that will make certain policies more effective in reducing inflation?
5. Why is deflation an issue for economies? Shouldn't falling prices be a good thing?
6. How can a government pull an economy out of deflation?
7. Is inflation or deflation better?

Contents

How does a country measure the level of inflation in their economy?

1. Inflation Basics

1.1. Definition of Inflation

Inflation is defined as a **sustained** increase in **general** price level of an economy over time.

The idea of **sustained** means that the increase in the general price level is persistent.

Note: Important CSQ Data Interpretation Skill

*Be careful not to confuse a rise or fall in **inflation rate** with a rise or fall in **general price level**.*

- *[Trend]* A **rise** in inflation rate means a *faster or larger* increase in general price level while a **fall** in inflation rate means a *slower or smaller* increase in general price level.
- *[Sign]* As long as inflation rate is **positive**, there is still an increase in general price level.

How would an A-level question that requires you to make use of inflation data look like? Look at the following question for a possible example.
This question is taken from the 2017 A-levels H1 Economics CSQ paper.

Describe what has happened to the rate of inflation and the price level in China between 2011 and 2015. [2]

Annual average inflation rate in China as measured by the Consumer Price Index (CPI) (%)

Average Inflation by Year (CPI) (%)	
2011	5.53
2012	2.62
2013	2.57
2014	2.06
2015	1.40

1.2. Inflation and the Value of Money

Inflation can affect the **internal** value of money in an economy (the purchasing power of money within a country). Purchasing power of money refers to the quantity of goods and services that can be purchased with a unit of money.

If income is not kept up with the general price level, there is an ***inverse relationship*** between the general price level and the purchasing power of money. An increase in the general price level implies a fall in purchasing power of money as less amount of goods and services can be purchased with the same amount of money, ceteris paribus.

Hence, when there is inflation, the internal value of money decreases.

1.3. Degrees of Inflation

Inflation rate is usually indicated by changes in Consumer Price Index (CPI).[1]

For more information on how the CPI is calculated in Singapore, refer to Appendix A.

Recall the formula that was introduced to you in your lecture notes, "Key Economic Indicators and Standard of Living".

$$\text{Inflation rate in period t} = \frac{CPI_t - CPI_{t-1}}{CPI_{t-1}} \times 100\%$$

Inflation can manifest in an economy in varying degree:

- *Mild* inflation – moderate rate of inflation
- *Creeping* inflation – inflation that proceeds for a long time at a moderate and fairly steady pace
- *Galloping/Runaway* inflation or *hyperinflation* – inflation that proceeds at a very high rate. E.g., Germany in 1920s, Israel in mid-1980s and Zimbabwe in 2008–9
- *Stagflation* (stagnation + inflation) – level of national income and output remains constant/stagnant or falls while the general price level increases, E.g., global oil crises in the 1970s.

Many countries use a measure of "core inflation" which excludes the prices of items such as energy and food because these are volatile and monetary policy need not respond to temporary fluctuations in them.

- In Singapore, MAS monitors and analyses both Headline CPI inflation (known as "CPI All-Items Inflation") and a measure of ore inflation ("MAS Core Inflation"). MAS Core Inflation is a better measure of underlying price pressures in the economy. It excludes private road transport and accommodation costs, which are subject to short-term fluctuations. These items also do not affect the day-to-day outlay of most Singaporean households. Core inflation is the measure MAS monitors most closely, among a range of indicators.

Inflation can be anticipated or unanticipated.

- *Anticipated inflation* – is a situation where businesses and individuals are able to predict the inflation rate accurately and will take steps to protect themselves against the negative effects of inflation. In such a situation, workers will ask for higher wages to protect their real income while savers will want a higher nominal interest rate to protect the value of their savings.
- *Unanticipated inflation* - is a situation where inflation rates vary from year to year and economic agents are unable to accurately predict the rate of inflation that is likely to prevail

[1] *The Consumer Price Index (CPI) measures the average price changes in a fixed basket of consumption goods and services commonly purchased by the resident households in a specified time period. It is used to measure changes in the general price level from the base year to the current year.*

in the near future. In this case, economic agents may make errors in their forecast with actual inflation being higher or lower than the predicted rates. Such a situation is likely to have adverse effects on an economy.

What are the different types of inflation? Do they share the same causes?

2. Types and Causes of Inflation

There are two main types of inflation an economy can experience:

Demand-pull inflation and **Cost-push inflation**.

2.1. Demand-pull Inflation

Demand-pull inflation refers to inflation that is caused by a continually rising Aggregate Demand (AD) with one or more of the components of AD increasing in a situation where the economy is close to or at full employment. Such inflation is usually associated with a booming economy.

2.1.1. Causes of Demand-pull Inflation

An increase in AD could be due to the increase in consumption expenditure (C), investment expenditure (I), government expenditure (G) and/or net exports (X – M). This causes the AD curve to shift right resulting in an unplanned shortage of inventories at the original general price level.

The initial increase in AD (due to the increase in C/I/G/(X-M)) will lead to a rise in output and NY. The rise in output leads to a further rise in factor incomes as more factors of production are employed. This will cause households to increase their consumption. This subsequent rise in induced C will lead to a further rise in AD and hence NY, which leads to further rounds of increases in induced C. Therefore, there is a more than proportionate rise in NY via the multiplier effect. This process stops when the initial increase in AD (injections) equals the total increase in savings, taxes and spending on imports (withdrawals).

The multiplier size determines the extent of the shift in AD, and thus impacts the changes in general price levels.

Depending on the degree of utilisation of the economy's available resources (capacity to produce), firms respond to the rise in AD partly by raising prices and/or by increasing output.

The degree of the rise in general price level depends on how close the economy is to full employment.

In Figure 1, when the economy is near full employment at Y_0, an increase in AD from AD_0 to AD_1 results in an increase in both the general price level from $0P_0$ to $0P_1$ and real national output from $0Y_0$ to $0Y_f$. As the economy approaches full employment, resources are also becoming increasingly scarce. With the economy's spare capacity being used up gradually, labour and raw material shortages mean that it becomes more difficult for firms to expand production to meet the rising demand. The competition for scarce resources will then cause firms to bid up factor prices, resulting in higher inflationary pressure (demand-pull).

However, when the economy is operating at full employment, Y_f, an increase in AD from AD_1 to AD_2 can only result in an increase in general price level from $0P_1$ to $0P_2$ as real national output cannot be increased anymore as the economy is already producing at full employment level $0Y_f$.

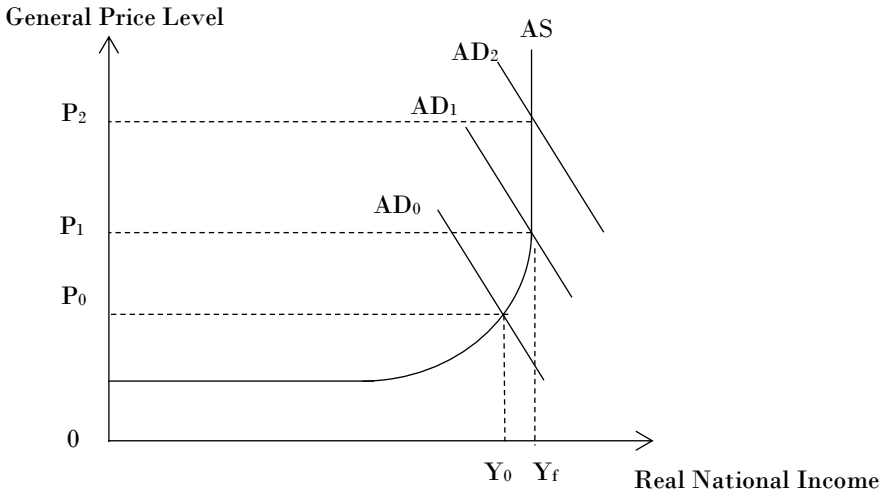

Figure 1: Demand-pull Inflation

2.2. Cost-push Inflation

Cost-push inflation refers to inflation that is caused by a persistent increase in the cost of production, for reasons not associated with an increase in AD. The Short Run Aggregate Supply (SRAS) decreases, resulting in an increase in general price level.

Cost push inflation occurs due to increase in cost of production as illustrated by an upward shift in the AS curve from AS_1 to AS_2, resulting in an increase in general price level from $0P_1$ to $0P_2$ as shown in Figure 2.

Main causes of a rise in cost of production include:

- An increase in unit labour cost
- An increase in the cost of raw materials

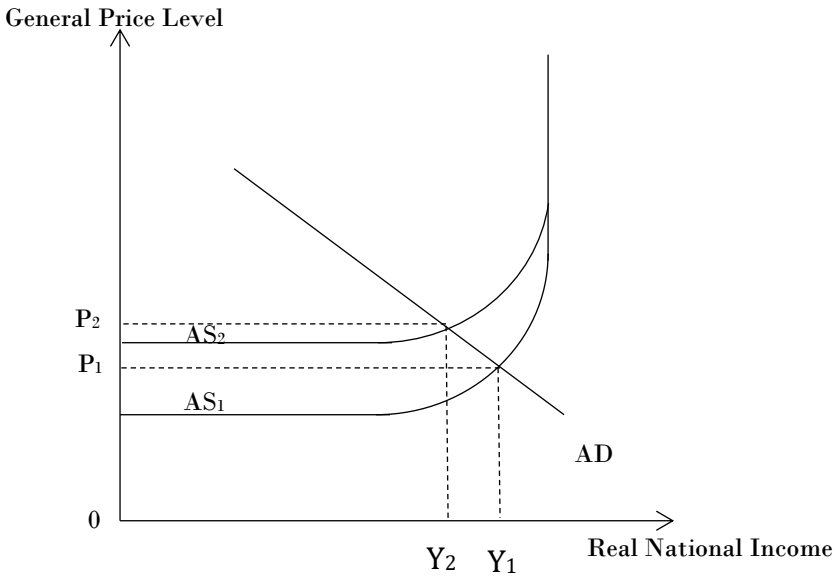

Figure 2: Cost-push Inflation

2.2.1. Causes of Cost-push Inflation

a) An increase in unit labour cost

Wage-cost-push inflation can result when there is an increase in wages without a corresponding increase in labour productivity. This could happen in countries with powerful trade unions with strong bargaining power that push for higher wages independently of the demand for labour.

$$\text{Labour productivity} = \frac{\text{Total Output}}{\text{No.of hours worked}}$$

$$\text{Unit labour cost} = \frac{\text{Total Wage Cost}}{\text{Total Output}}$$

If an increase in wage cost is not matched by a corresponding increase in labour productivity, a firm's unit cost of production will increase, ceteris paribus. With a higher unit cost of production (increase in wages add to higher average cost of production), Short Run Aggregate Supply (SRAS) will decrease, illustrated by an upward shift in the AS curve from AS_1 to AS_2. With the

higher unit cost of production, firms will be willing and able to sell each output level at a higher general price level, passing on part of the increase in cost to the consumers in the form of higher prices of goods and services, causing an increase in general price level from $0P_1$ to $0P_2$, as shown in Figure 2. This illustrates wage-cost push inflation.

b) An increase in the cost of raw materials

Prices of goods and services may increase due to increases in cost of raw materials or energy. Increases in the price of raw materials or semi-finished goods as well as increases in the price of oil, coal or natural gas which are used in the production process of energy, increases the cost of production and result in higher prices. Shortages of oil during the early to mid-70s and in the late 1990s to early 2000s resulted in sharp increases in cost of production and therefore resulted in cost-push inflation.

Import price-push inflation is a type of cost-push inflation caused by rising import prices of raw materials and semi-finished goods independent of the level of aggregate demand. This phenomenon typically occurs when there is an increase in the prices of imports from other countries experiencing inflation. As such, countries that import from these economies with high levels of inflation would tend to "import" their trading partners' inflation into their home countries.

Singapore, a small economy with limited natural resources, is very susceptible to **import price-push** inflation as its imports are largely intermediate goods. Increase in prices of raw materials would lead to an increase in cost of production resulting in an increase in the prices of the final goods and an overall increase in general price level.

c) Profit-push inflation

Profit-push inflation is caused by firms taking advantage of their market power (usually monopolies or oligopolies producing essential goods or services such as public utilities and fuel) to make more profits by pushing up prices. In some cases, firms that anticipate an increase in demand will raise prices substantially to increase profits. The increase in prices depends on the extent of the market power of the firm. The greater the market power, the greater the firms' ability to raise prices.

Note: Demand-pull and cost-push inflation can occur together. Even when an inflationary process starts with either demand-pull or cost push factors, it is often difficult to separate the two as inflation spirals upwards.

2.3. Interaction between Demand-pull and Cost-push Inflation:

a) Wage-Price Spiral

Wage-price spiral refers to the cycle where wage increases cause prices to increase which in turn causes wages to increase further. With reference to Figure 3, an initial situation of a rise in AD from AD_1 to AD_2 causes wages to increase due to increased competition for resources. This leads to a rise in general price level from $0P_1$ to $0P_2$. With the demand-pull inflation, workers will face a higher cost of living. This may prompt them to demand for higher wages, which will raise the cost of production if not accompanied by the same increase in productivity. This will in turn

leads to a fall in AS from AS_1 to AS_2. This will then increase general price level further from $0P_2$ to $0P_3$. The net effect on output and employment may be small but general price level rises substantially.

If these shifts get more and more rapid, a wage-price spiral results with wages and prices chasing each other as AD continually shifts to the right and AS to the left.

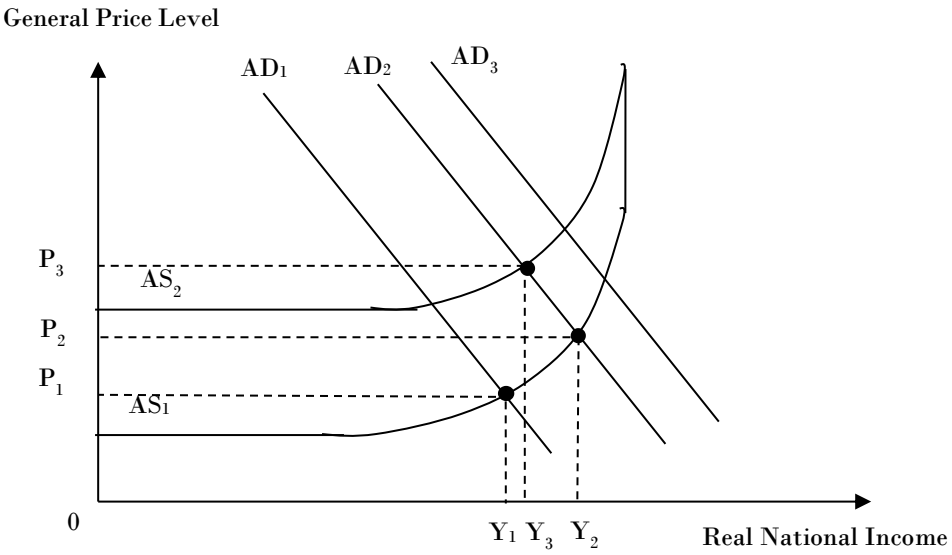

Figure 3: Interaction of Demand-pull and Cost-push inflation

In October 2022, DPM Lawrence Wong commented on the consequences of a wage-price spiral in Singapore, as well as some recommendations.

"We must continue to ensure that wage increases are in line with productivity, and manage the risks of a destabilising wage-price spiral, where higher wages feed directly into higher prices."

Read more here!

*How would an A-level question that requires you to explain the causes of inflation look like? Look at the following question for a possible example. This corresponds to **EQ 6** (2023 DHS H2 Prelims)) of your Price Stability Tutorial package.*

UK's central bank, the Bank of England, has raised interest rates for the fourteenth consecutive time as it warned that the cost of borrowing will remain high. While the Bank of England acknowledges that the hike will make things 'difficult' for many, the move was necessary to bring inflation down.

Explain one domestic and one international factor that may increase an economy's rate of inflation. [10]

How does inflation affect the different economic agents (consumers, producers, government) in an economy?

3. Consequences of Inflation

Low and stable inflation, which leads to price stability, is a macroeconomic goal of an economy. In this section we will be examining the consequences of high inflation on the various economic agents – consumers, producers and governments. The consequences could be applied to both demand pull and cost push inflation.

3.1. Consumers

3.1.1. Changes in Purchasing Power

Generally high inflation erodes the value of money and reduces the purchasing power of consumers, assuming that the increase in price levels exceed the increase in income. For consumers who receive no increase in income, high inflation will significantly reduce their ability to consume goods and services. They may be forced to change their lifestyles and might therefore have a lower material standard of living (see below for different impacts on different consumer groups).

If consumers work longer hours in order to earn higher wages to sustain their lifestyles, their non-material standard of living might fall as their leisure hours fall.

More specifically, whether consumers' purchasing power rises or falls depends on the causes of inflation. If inflation is due to an increase in AD i.e., demand-pull inflation, real national income rises and purchasing power rises. This is especially so when the economy is at the horizontal portion of the AS curve (when resources are available). Since real national income rises, consumers will enjoy higher purchasing power. If the economy is at full employment level, there will be a no further increases in real national income as AD increases. Thus, purchasing power may stay the same. However, for certain groups of people in the economy whose nominal wages do not rise as fast as the general price level, their purchasing power might fall.

Inflation due to the decrease in AS i.e., cost-push inflation, can lead to lower purchasing power. This is because when cost-push inflation occurs due to an increase in the cost of factors of production, firms may reduce the production of goods and services in the economy or substitute labour with other cheaper resources such as capital. The fall in AS that results in the fall in production of goods and services and employment of labour will result in a fall in real national income and hence, purchasing power.

Try to answer the following question:

Do consumers always lose out in times of inflation? What affects whether they gain or lose?

3.1.2. Erosion of Value of Savings

Price stability encourages consumers to save. If high inflation is anticipated, consumers will choose to spend rather than save as they would be able to consume significantly more goods and services in the current time period as compared to the next time period. In particular, for consumers who live off savings such as retirees living on limited savings, inflation cuts into their purchasing power with every passing year. As a result, retirees might enjoy lower material standard of living.

As such, consumers will want to convert their income and savings into goods and services. The costs in terms of the time and effort by consumers to reduce their holding of cash is called *search cost* or *shoe-leather cost*, reflecting the increased time spent on search for the best deal or lowest available price.

3.2. Producers

3.2.1. Fall in level of investments

High inflation rate, especially when the rate of inflation fluctuates (generally, the higher the rate of inflation, the more it fluctuates) and is hard to anticipate, investors are unable to make sound investment decisions with confidence and certainty. Firms may find it difficult to make projections of revenue, costs and thus profits. This in turn makes investors reluctant to invest

as there is no clear indication of their expected profits. Thus investors may choose not to partake in long term investment projects or worse, withdraw investment from the country where there is high volatility in inflation rate.

Furthermore, the amount of savings in an economy largely determines the country's level of investment. Higher savings would build up the pool of money that banks have at their disposal for lending to businesses to invest.

However, if high inflation is anticipated, consumers would choose to spend rather than save and this will reduce the amount of loanable funds in the banks. The fall in supply of loanable funds will cause interest rates to increase. With an increase in the cost of borrowing, firms will be less willing to invest due to the fall in profitability of their investments.

If investment are lowered, the country's future standard of living might be adversely affected.

3.2.2. Reduce efficiency in production

When there is inflation and prices of goods and services increase persistently, sellers of goods and services must continually updating their price catalogues. The corresponding cost incurred from continually update prices known as *menu costs* –a form of inefficiency in production. However, with the advancement of technology, the increased use of digital menus could reduce such costs.

3.2.3. Fall in level of production

Initial demand-pull inflation could encourage greater employment and production because of higher expected returns. However, if the rate of increase in prices of factors of production overtake rising returns, the net effect is a fall in level of production and increase in unemployment. Prices will continue to rise substantially.

Furthermore, persistently high price level could result in the country's exports become less price competitive and thus there might be a fall in the demand for exports as foreigners will turn to cheaper alternatives. The fall in demand for exports will lead to a fall in production of goods and services which leads to a rise in unemployment in the export sector. (A fall in net exports would lead to a fall in AD and hence real national income, leading to a rise in unemployment.)

Due to an increase in unemployment caused by a fall in production of goods and services, there would be fall in incomes, which reduce the amount of goods and services that could be purchased by consumers. This leads to a fall in material standard of living.

3.3. Governments/Economy

3.3.1. Impact on other macroeconomic objectives

a) Economic Growth

- Actual Economic Growth

Consumers and firms take into account the *expected rate of inflation* when making decisions. Expectation of high inflation rates or uncertainty about future inflation rates affect Aggregate Demand (AD) adversely.

i. **Consumption:** With high inflation rates, consumers are less able to plan their purchases as there is greater *uncertainty* in future prices, thus consumers may *withhold their consumption*. At the same time, the real value of their incomes may be lowered over time, assuming that their nominal incomes increase at a slower rate than inflation. This would reduce consumption as consumers might choose to save more due to increased uncertainty.
ii. **Investment:** Investors are also unable to make sound investment decisions with confidence and certainty. This is because high inflation rates *reduce investors' confidence* on the return on investment. Moreover, firms may be *uncertain* about future inflation rates and will have a *greater fear* that the returns to their investments would be eroded by inflation, further reducing investor confidence. This would then deter them from making investments.
iii. **Net Exports:** Net exports may fall because of

1. Decrease in Export Revenue

♣ When an economy experiences high levels of inflation, it can be damaging to its export revenue as it causes the country's goods and services to become relatively more expensive than other countries and this may result in its exports becoming less price competitive in the global market. If the price elasticity of demand for its exports is larger than 1, there would be a more than proportionate fall in the quantity demanded for its exports. Hence, export revenue may decrease as foreign consumers switch to other relatively cheaper substitutes from other countries.

2. Increase in Import Expenditure

♣ Likewise, in the event of high inflation rates, domestically produced goods and services may be deemed relatively more expensive compared to imported goods and services. Assuming that the cross elasticity of demand for imports with respect to the price of domestically produced goods is positive (i.e. they are substitutes), there will be an increase in the demand for imports. This may cause a rise in import expenditure as domestic consumers switch to relatively cheaper imports, resulting in an increase in import expenditure.

Therefore, given that high inflation rates can cause a fall in **consumption**, **investment** and **net exports**, AD will fall and the real national income will have a multiplied fall via the multiplier effect. This is illustrated in Figure 4, whereby a fall in AD from AD_1 to AD_2 due to high inflation in the previous time period would lead to a fall in real national income from $0Y_1$ to $0Y_2$.

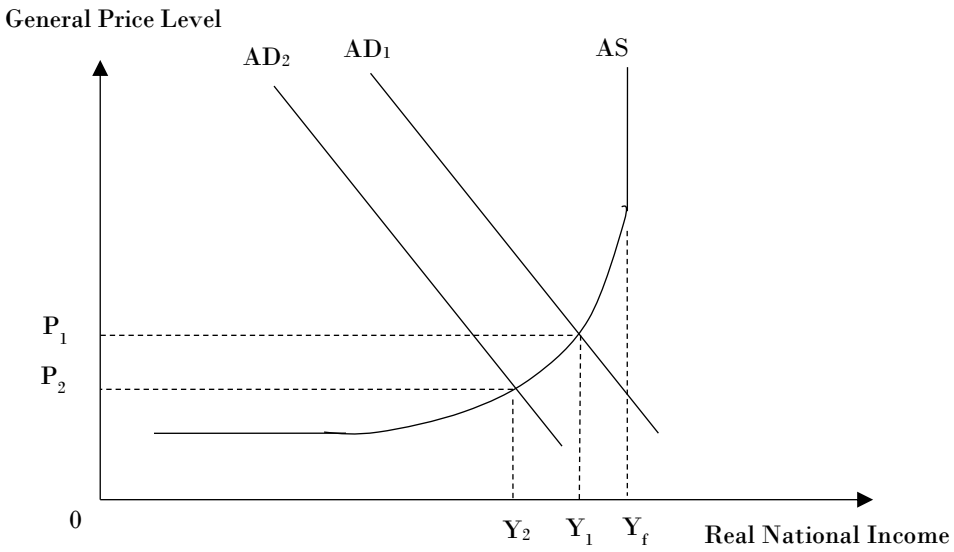

Figure 4: Illustration of Negative Economic Growth (lower real National Income) and Higher Unemployment

b) Potential Economic Growth

High inflation usually has negative implications on investment, be it domestic or from abroad. Hence, given that the level of investment may fall during times of high inflation, this would mean less capital accumulation for the economy and may lead to **slower potential economic growth**. This could adversely affect future standard of living.

c) Unemployment Rate

With reference to Figure 4, the fall in **consumption**, **investment** and **net exports**, can be illustrated by a fall in AD from AD_1 to AD_2. The real national income would fall from $0Y_1$ to $0Y_2$. This would mean that firms decrease their production of goods and services, thereby lowering their demand for factor of production such as labour which would lead to an increase in unemployment.

Particularly for economies that are highly reliant on the export market, a high inflation rate would lower export price competitiveness, ceteris paribus. This leads to a fall in export revenue. As seen in Figure 4, the fall in AD leads to a fall in real national income. As firms decreases their production, the demand for labour would decrease, leading to an increase in unemployment.

d) Balance of Trade (Net Exports (X-M))

When a country suffers from high inflation, the increase in prices of domestically produced goods in the country will make exports relatively more expensive and imports relatively cheaper, ceteris paribus.

The increase in the price of exports due to inflation in the country leads to a decrease in the quantity demanded of exports in the global market. If the price elasticity of demand for its

exports is larger than 1, there would be a more than proportionate fall in the quantity demanded for its exports, resulting in a fall in export revenue.

At the same time, domestic consumers turn from domestically produced goods and services to the relatively cheaper imported goods and services. As the price of domestically produced goods increases, the quantity demanded falls. Assuming that imports are substitutes to domestically produced goods (i.e. XED of imports with respect to the price of domestic goods > 0), import expenditure increases.

As result, this reduction in the total value of exports and an increase in the total value of imports will worsen the balance of trade. This may also cause the external value of a country's currency to depreciate as demand for the currency falls.

Can all types of inflation be solved with the same policy? Are there particular circumstances that will make certain policies more effective in reducing inflation?

4. Macroeconomic Policies to Achieve Price Stability

Governments implement policies in order to achieve the macroeconomic aims. The choice of policy introduced should depend not only on the macroeconomic problem, but also attempt to deal with the ***root*** cause of the problem. In this case, the government should consider the ***type*** of inflation the economy is suffering, whether it is demand-pull inflation or cost-push inflation. We shall explore policies that can be used to achieve price stability during times of inflation.

4.1. Demand-side Policies

Demand-side policies are implemented when the government attempts to influence the level of AD, which in turn influences the level of real national income. In other words, demand-side policies could also be used to achieve price stability by decreasing AD.

Demand-side policies used to resolve demand-pull inflation include contractionary fiscal and monetary policies. Demand-side policies are unlikely to be used to resolve cost-push inflation as it will adversely affect real national income and increase unemployment caused by a fall in AD.

Contractionary demand-side policies seek to *decrease AD and to lower the level of total spending* in the economy. The decrease in AD aims to **dampen** the inflation rate by reducing the increase in general price level. By doing so, the government will be able to meet the macroeconomic aim of attaining price stability.

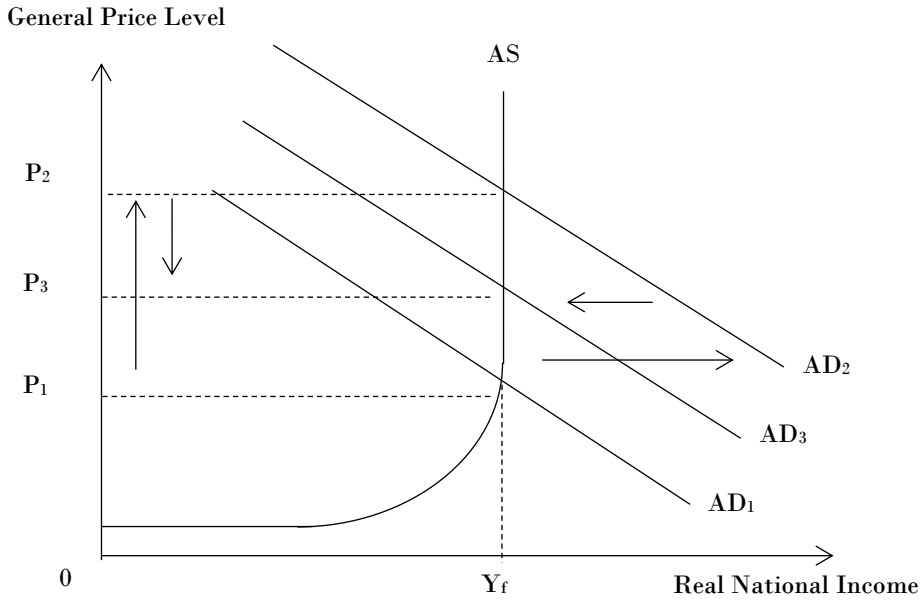

Figure 5: Contractionary Demand-side Policy (AD/AS approach)

Using the AD/AS model, let us assume that the economy is operating at full capacity where AD_1 intersects AS as shown in Figure 5. If AD increases from AD_1 to AD_2, a contractionary demand-side policy would be able to dampen the increase in AD from AD_2 to AD_3. Hence, it can be seen that instead of an increase in general price level from P_1 to P_2, the contractionary demand-side policy is able to moderate the increase in general price level from P_2 to P_3. As such, governments may find contractionary demand-side policies useful in lowering the pace of increase in general price level in an economy, ceteris paribus.

In the event that a country is experiencing ***demand-pull inflation***, its government can implement a contractionary monetary and/or fiscal policy to decrease general price level and reduce the inflationary pressures in its economy, thus achieving price stability.

4.1.1. Fiscal Policy

a) Contractionary Fiscal Policy

Contractionary fiscal policy may be useful in reducing the problem of ***demand-pull inflation***. In adopting a contractionary fiscal policy, the government attempts to decrease aggregate demand (AD) by decreasing its government expenditure (G) and/or increasing tax rates.

A fall in government expenditure on final goods and services would cause the G component of AD to decrease, while a decrease in transfer payments such as grants or unemployment benefits would cause the C and/or I component of AD to fall.

Similarly, government can increase tax rates such as personal income tax and corporate tax in order to decrease AD. An increase in personal income tax rate would result in lower disposable income and thus, lower the level of household consumption (C). Likewise, an increase in corporate tax rates would reduce post-tax profit as corporate tax is on a firm's profits, making the return on investment or profits lower, and thus, lower investment.

Hence, the manipulation of government expenditure and tax rates can lower AD via the C, I and G components, ceteris paribus, dampening the initial increase in AD. With reference to Figure 5, a contractionary fiscal policy may be able to reduce the increase in AD from AD_2 to AD_3 and as such, dampening inflation by reducing the increase in general price level from P_2 to P_3, thus achieving price stability.

b) Limitations of Contractionary Fiscal Policy

The *effectiveness* of contractionary fiscal policy in curbing inflation may be limited by the following.

1. Expectations of households & firms

The expectations of households and firms would impact the effectiveness of a contractionary fiscal policy. If households and firms have a strong and positive outlook of the economy, consumption and investment are unlikely to be greatly affected by the rise in personal income tax rates and/or corporate tax rates respectively. Hence, this reduces the contractionary effect on AD, ceteris paribus, and would thus be less effective in controlling the inflation rate in an economy. This is also highlighted as a limitation of monetary policy centred on interest rates.

2. Time lags

There are significant time lags from recognising the problem to implementing the policy and allowing the policy to take effect. This would make the policy less effective as timing of the effects is as crucial as the magnitude of the effect. For example, if the implementation of the contractionary fiscal policy is inappropriately timed, especially when inflationary pressures on the economy have been reduced, it may cause other macroeconomic problems and may hamper an economy's growth and level of employment.

3. Incentive to work

Increasing the personal income tax rates to reduce AD and dampen increases in the general price level may cause disincentives to work. This is because a rise in personal income tax rates will decrease disposable income, ceteris paribus, and workers may feel less incentive to be as efficient and/or productive as a result. If this phenomenon occurs, this could cause a decline in the productive capacity of the economy and LRAS could fall. Hence, this would create greater difficulties in controlling inflation in an economy in the *long term*.

4. Conflict with other Macroeconomic objectives

To resolve demand-pull inflation by decreasing AD would lead to conflicts between different macroeconomics aims and objectives as a decrease in AD will also lead to a fall in real national income and increase in unemployment if the economy is not operating at full employment level.

4.1.2. Monetary Policy centred on interest rate

a) Contractionary Monetary Policy

A government can implement a contractionary monetary policy by decreasing the money supply in order to raise the interest rate.

Internally, an increase in interest rates would increase the cost of borrowing funds for investment. Producers will have less incentive to borrow for further investments.

Similarly, higher interest rates increase the cost of borrowing for households and opportunity cost of consumption. Therefore, households are less inclined to borrow for spending, especially on consumer durables.

Thus, higher interest rates will discourage investments (I) and consumption (C), causing Aggregate Demand (AD) to decrease. A fall in AD would reduce the increase in general price level in an economy from P_2 to P_3 from the initial price level of P_1, thus helping to ease demand-pull inflation and achieving price stability.

With the change in interest rates, there will be a **secondary effect** on exchange rates because of the effect of interest rates on hot money flows. Generally higher interest rates would mean greater hot money inflow and lower hot money outflow, increasing the demand for and decreasing the supply of domestic currency in the foreign exchange market.

If exchange rates are determined under a freely floating exchange rate regime, this would lead to an appreciation of the country's currency, ceteris paribus. This increases the price of the country's exports in foreign currency and decreases the price of its imports in domestic currency.

There will be a deterioration in the country's Net Exports, (X – M), ceteris paribus.

Deterioration in the country's Net Exports reinforces the dampening effect on AD as illustrated in Figure 5, increasing AD from AD_1 to AD_3 instead of from AD_1 to AD_2, brought about by the internal effects of a higher interest rate. This would reduce the increase in the general price level in an economy and helps to achieve price stability.

b) Limitations of Monetary Policy

The *effectiveness* of contractionary monetary policy in curbing inflation may be limited by the following.

1. Interest elasticity of demand for investment

The outlook of the economy has an impact on the expectations of household and firms and as such, may influence the extent of the decrease in investment and therefore, the extent to which aggregate demand dampens, given a rise in interest rate, ceteris paribus.

If firms have a strong and positive outlook of the economy, demand for investment may tend to be interest inelastic and investment is unlikely to be greatly affected by the rise in interest rate. This is because a positive outlook of the economy may mean that despite the increase in cost of borrowing, investment may still increase given a rise in the expected return of investment.

According to Keynes, investment is more likely affected by expectations of future incomes and state of the economy rather than interest rate. Hence, if business outlook is good, the effectiveness of the contractionary monetary policy in controlling inflation may be reduced.

2. *Command and control problems*

Monetary policy may not be effectively and efficiently implemented in some countries due to command and control problems.

In countries where the economy is open to capital flows, when the Central Bank increases interest rate to dampen the increase in AD, it will also lead to hot money inflow due to higher rate of returns. Hot money inflow represents more funds entering the banking sector and the country. This eventually leads to a rise in the money supply which in turn results in a fall in interest rate, making the contractionary monetary policy adopted by the government less effective.

Hence, monetary policy may not be a feasible tool if the country is open to capital flows.

3. *Availability of alternative source of funds*

An increase in interest rate may not reduce investment significantly if foreign direct investment constitutes a large proportion of investments in the country. Such investments tend to have their own source of funding and do not depend on local banks for their funds. Thus, the accessibility of other sources of funds may reduce the effectiveness of the contractionary monetary policy in attaining a low and stable inflation rate may be limited.

4. *Time lags*

It can take a fairly long time for the contractionary monetary policy to take effect. Owing to the time lags between recognition of the problem, policy formulation and implementation of an increase in interest rate to achieve the desired outcome of dampening the inflation rate, changes in monetary policy can be mistimed and bring forth other problems, such as reducing growth and employment in an economy, ceteris paribus.

5. *Creating uncertainty and unpredictability*

Frequent changes in interest rate may not be conducive for firms in making long-term investment decisions. Since interest rate reflects the cost of borrowing for investment purposes, frequent changes in interest rate may reduce expectation and predictability of return on investment. Hence, investors may put off investment to a time where interest rate is more stable. This in turn affects the long-term growth of the economy and may limit the increase in long-run aggregate supply of the economy. As a result, the economy's ability to deal with inflation in the *long run* could be hampered.

6. Conflict with other Macroeconomic objectives

To resolve demand-pull inflation by decreasing AD would lead to conflicts between different macroeconomics aims and objectives as a decrease in AD will also lead to a fall in real national income and increase in unemployment if the economy operates near the full employment output.

4.1.3. Monetary Policy centred on exchange rate

The exchange rate policy can be an extremely useful tool in achieving a low and stable inflation rate. This is especially so for Singapore, due to its characteristics of being small in size and its openness to trade and capital flows, Singapore has no effective control over its interest rates and therefore Singapore's monetary policy is centred on her exchange rate.

Under the managed float system, the Central Bank can intervene in the foreign exchange market to impact a country's exchange rate in attempt to influence the price of exports and imports. These changes in the price of exports and imports would therefore cause respective changes in the quantity demanded for exports and imports, ceteris paribus. The resultant change on net exports will affect AD, ceteris paribus.

The exchange rate policy can also be used to reduce ***demand-pull inflation*** in a country through the appreciation of the country's currency or exchange rate.

a) Appreciation of the Domestic Currency against Foreign Currencies

When a government decides to appreciate its domestic currency against foreign currencies, the government will purchase the domestic currency from the foreign exchange market using the foreign currencies they have in the country's foreign reserve. When demand for domestic currency increase, its value will increase against other currencies resulting in the appreciation of the domestic currency.

After the domestic currency appreciated, the price of exports would be relatively more expensive in terms of foreign currency. This causes the demand for exports to decrease, and the export revenue (measured in domestic currency) will decrease[2]. On the other hand, since the imports is cheaper in terms of the domestic currency, quantity demanded for imports by the domestic country would increase as consumers switch to buy more imported goods and less domestically produced goods, ceteris paribus. Since (X – M) is a component of Aggregate Demand, AD would decrease and the increase in general price level would be reduced as well, achieving price stability.

Exchange rate policy can also be used to tackle ***import price-push inflation***.

An appreciation of the domestic currency would also cause an increase in the SRAS especially if a significant portion of a country's factors of production are ***imported***. This is because the appreciation of the domestic currency would lead to cheaper imported raw materials and

[2] 1. When the price of exports in foreign currency rises, the quantity demanded of exports by foreigners would decrease and the resulting change in the total expenditure (measured in foreign currency) would depend on the value of PEDx. However, the total expenditure (measured in domestic currency) would definitely decrease as the price in domestic currency has not changed but the quantity demanded at the same price level has decreased.

intermediate products in terms of the domestic currency. When this happens, the initial increase in the cost of production of final goods and services will decrease and the fall in SRAS will be mitigated as a result. Due to the increase in SRAS, which dampens the initial decrease in SRAS, general price level is likely to increase by a smaller extent, dampening cost-push inflation and achieving price stability.

Singapore's small size and the lack of natural resources has resulted in Singapore being dependent on imports for both factors of productions and consumers goods. In fact, there is a high import content in the output of Singapore[3]. Thus, an appreciation of the Singapore dollar (SGD) would be able to partially offset import-price-push inflation, causing the general price level to increase by a smaller extent with an increase in Singapore's SRAS and thus achieving price stability.

Should Singapore appreciate its currency to cope with higher imported inflation? Making use of the decision-making approach.

Component of the Decision-Making Approach	Economic Analysis and Evaluation
Benefits	The very high import content of domestic expenditure means that an appreciation of the Singapore Dollar Net Effective Exchange Rate (S$NEER) will help offset imported inflation. The importance of external demand means that the exchange rate has a larger effect on the overall level of economic activity in Singapore than in economies where domestic consumption makes up the bulk of aggregate demand.
Costs	A stronger currency will result in less competitively priced exports for Singapore which will have repercussions on balance of trade and economic growth. Lower net export revenue will lead to a fall in aggregate demand. This will lead to slower economic growth and higher unemployment.

[3] Refer to notes on Economic Growth for more details.

Component of the Decision-Making Approach	Economic Analysis and Evaluation
Constraints	There is a limit to how much Singapore can appreciate its currency. For example, excessive adjustments in exchange rate could affect business confidence in Singapore as it would be hard for firms to predict profits in terms of foreign currencies. But a modest level of appreciation may not be sufficient to cope with imported inflation if there is significant inflationary pressure.
Information	As there is much complexity in the issue (e.g., the projected level of inflation is unknown, and the extent of impact of appreciation on economic growth and unemployment are also unknown), it is difficult to determine the appropriate degree of appreciation needed by the economy. Hence, we need information on the projected level of inflation, and the estimated impact of appreciation on economic growth and unemployment.
Perspectives	In deciding whether to appreciate the currency, the government needs to consider the welfare of consumers and firms. The appreciation will result in relatively more affordable imported goods and services, which will benefit consumers. However, firms which export goods, will be negatively affected as the prices of their exports will become more expensive in terms of foreign currency. This will cause a fall in the quantity demanded for their exports and a fall in revenue. Such impact will be greatest for firms producing exports with relatively low import content.

Component of the Decision-Making Approach	Economic Analysis and Evaluation
Intended Consequences	A stronger currency will help lower the price of goods and services and curb inflation through two channels – the direct channel via import prices and the indirect channel via external demand for Singapore's goods and services. With a stronger currency, the prices of imports in SGD falls and firms enjoy lower costs of production from the relatively cheaper imported raw materials. This has a direct effect on the inflation rate by bringing down cost-push inflation. With a stronger currency, the price of exports in foreign currency will be more expensive and this leads to a fall in demand for exports. At the same time, the appreciation would lead to the price of imports (in terms of SGD) to fall leading to an increase in quantity demanded of imports. Appreciation of the SGD will lead to a fall in net export (X-M). This will reduce aggregate demand and bring down general price levels (assuming that the economy was originally producing in the intermediate range of the aggregate demand curve).
Unintended Consequences	Policymaking is complex and uncertain. Appreciation, extended over a long period of time, could cause an accumulation of trade deficits. A large and persistent trade deficit is unfavourable as the country is sacrificing its future living standards to finance current living standards.
Changes	Changes to global economic conditions, such as a regional or global crisis, may ease inflationary pressures. As such, Singapore will need to review its appreciation policy stance.

b) Limitations of Exchange Rate Policies

The *effectiveness* of exchange rate policies in curbing inflation may be limited by the following:

1. Time lag

It could take some time before the problem of inflation is recognised (recognition lag) for the government to implement the appropriate exchange rate policy (implementation lag) and for the policy to take effect (response lag). As a result, the use of the exchange rate policy may not be able to dampen inflation rate immediately.

2. Economic conditions abroad

In circumstances where a country's trading partners are experiencing an economic boom, the appreciation may not be that effective in reducing inflation. This is because although the foreign price of exports may increase due to the appreciation, the exports may still be relatively affordable in foreign countries due to a rise in their income levels which can increase their demand for imports. In this case the income effect may outweigh the price effect of relatively more expensive exports. Hence, the effectiveness of the appreciation may not significantly reduce inflation rate.

3. Availability of foreign exchange reserves

The option of government intervention in the foreign exchange market is only available to governments which have sufficient foreign exchange reserves. This is to allow for the government to buy the domestic currency to influence an appreciation of the exchange rate, depending on the context of the situation and the aim(s) of the government.

In the event that there are insufficient foreign exchange reserves, the government's ability to use the exchange rate policy to achieve price stability would be undermined and as a result, the government may not be able to bring about the desired effect on the exchange rate, limiting its ability to use exchange policy to reduce inflation rate.

4. Only External Demand is affected

Exchange rate policy only affects net export revenue via the price of exports and imports. If inflation is caused by other factors such as increase in consumption or investment, it will not address the root cause directly.

4.2. Supply-side Policies

Supply-side policies can be used in reducing the effects of both ***demand-pull and cost-push inflation***.

Supply-side policies are policies implemented by government in attempts to increase the short run aggregate supply (SRAS) and/or long run aggregate supply (LRAS) of the economy, which in turn influence the general price level and the rate of inflation in a country.

Figure 6 below shows how an increase in SRAS can reduce the effects of ***cost-push inflation*** for a country.

Figure 7 on the other hand shows how an increase in LRAS can reduce the effects of ***demand-pull inflation*** for a country by slowing down the increase in general price level.

Do note that an increase in both SRAS and LRAS can reduce the effects of both demand-pull and cost-push inflation.

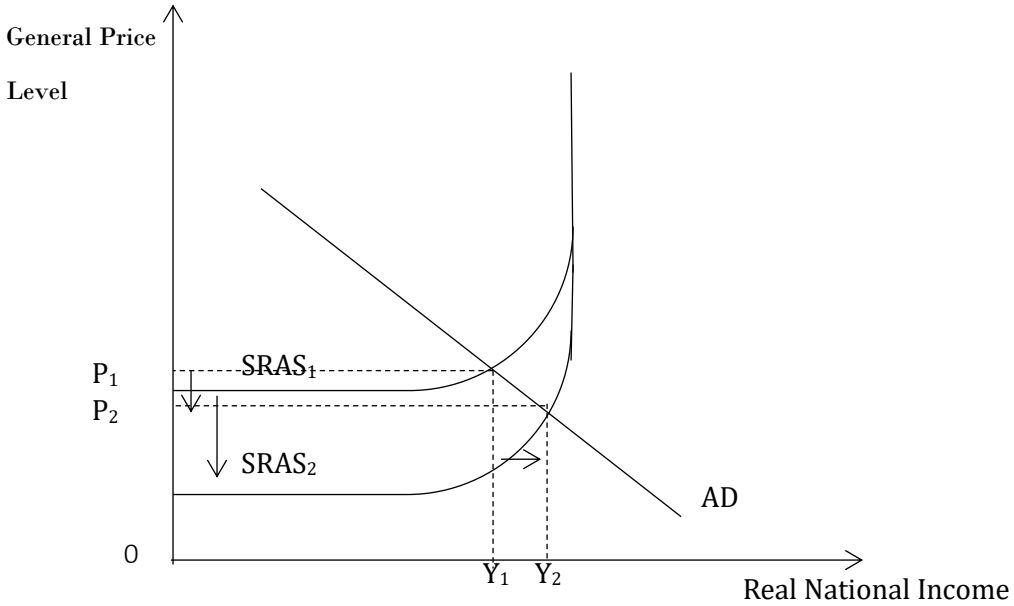

Figure 6: Supply-side policy (SRAS)

An increase in SRAS can reduce the effects of ***cost-push inflation*** for a country. This increase in SRAS, as depicted in Figure 6 by a downward shift from $SRAS_1$ to $SRAS_2$, would reduce the general price level, thus dampening cost-push inflation and achieving price stability.

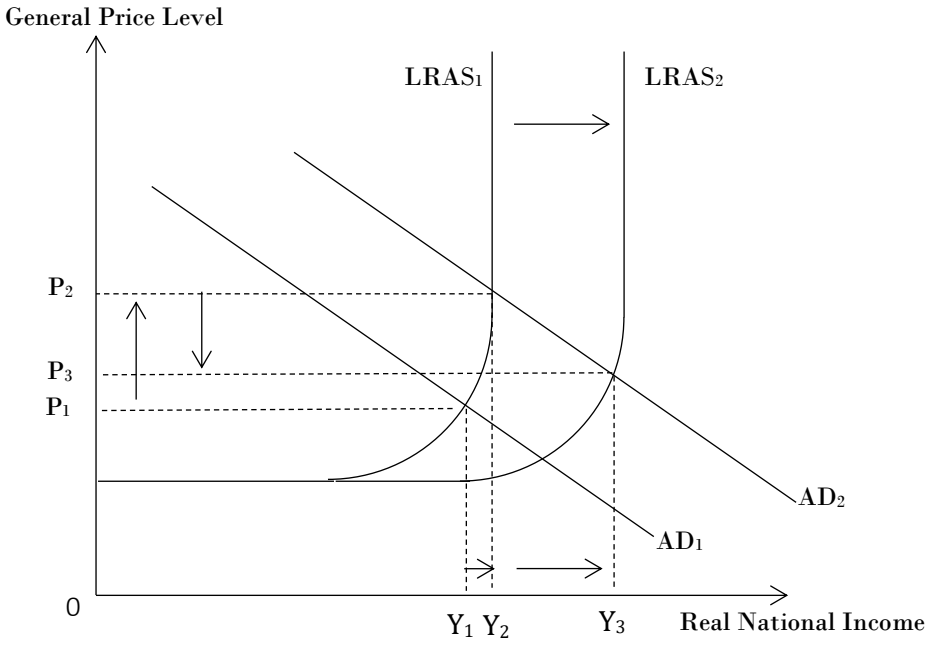

Figure 7: Supply-side policy (LRAS)

On the other hand, an increase in LRAS can reduce the effects of ***demand-pull inflation*** for a country by slowing down the increase in general price level. This is illustrated in Figure 7 by an increase in LRAS from $LRAS_1$ to $LRAS_2$, reducing the increase in general price level. Thus, supply-side policies can help to dampen demand-pull inflation.

a) Market-oriented Supply-side policies

In the case of ***market-oriented supply-side policies***, governments encourage or increase competition in different markets, for example, restricting monopolies of essential products such as water and electricity or encourage privatisation.

Market oriented supply-side policies can also be in the form of reducing the power of trade unions and labour market reforms which decreases the unit cost of labour and reduces cost of production.

If competition is encouraged, firms will have greater incentive to be more efficient by producing at a lower or the lowest possible unit cost and offer the lowest price in order to remain competitive in the market. This will lead to an increase in SRAS, thus lowering the general price level and reducing ***cost-push inflation***, as illustrated in Figure 6.

Market oriented supply-side policies can also be in the form of tax incentives such as reducing corporate income tax and other business taxes to attract foreign direct investment. Foreign direct investments that contribute to capital accumulation will increase the LRAS of an economy.

b) Interventionist Supply-side policies

Alternatively, governments may also consider the use of **interventionist** supply-side policies to solve both demand-pull and cost-push inflation. Government's provision of education, training and retraining of the labour force, can lead to an improvement of the quality of labour. An improvement in the quality of factors of production such as labour will cause LRAS to increase as shown in Figure 7, moderating the increase in the general price level and the effects of ***demand-pull inflation.*** At the same time, if labour productivity rises at a faster pace than any increase in wages, the fall in unit cost of labour results in a fall in cost of production. This increase in SRAS as shown in Figure 6 further moderates the increase in the general price level and the effects of ***cost-push inflation***.

c) Limitations of Supply-side Policies

The *effectiveness* of supply-side policies in curbing inflation may be limited by the following:

1. Time lag

The effects of supply-side policies may only be seen in the long run. In particular for interventionist supply-side policies, the impact lag is long as it takes time to educate and train the workforce in order to improve the quality of labour. Hence, the effectiveness of supply-side policies in slowing down the increase in general price level may be limited in the short term as the impact of the increase in LRAS, can only be seen in the long term.

2. High cost of implementation

Interventionist supply-side policies are costly and may come at a high opportunity cost as the money can be diverted to attaining other macroeconomic aims or microeconomic aims such as reducing market failure.

3. Attitude of workers

Furthermore, interventionist supply-side policies such as education and training have little guaranteed outcome in increasing a country's productive capacity. This is because the success of these policies is determined largely by the attitude of workers and take-up rate of these programmes. If response is low or workers have a poor attitude towards education and training, it may have a limited impact in increasing LRAS and hence, dampening inflation.

4. Tax incentive "wars"

Market oriented supply-side policies such as reducing corporate income tax and other business tax may lead to tax incentive "wars" between countries as they compete fiercely for foreign investment. For example, besides Singapore, Malaysia, Hong Kong, Thailand, Australia, China and even Vietnam are offering similar tax incentives to attract foreign investment. Hence, a low tax rate as well as a range of tax and financial incentives alone is not sufficient to encourage FDI.

Thus, the implementation of such market oriented supply-side policies may not be effective in increasing the SRAS, reducing cost of production as well as general price level.

5. Resistance of trade unions

Market oriented supply-side policy such as reducing the power of trade unions may be strongly resisted as they may reduce the power of various interest groups. For example, in product markets, profits may suffer as a result of competition policy, and in labour markets the interests of trade unions may be threatened by labour market reforms. High resistance to change may limit the effectiveness of the supply-side policy in reducing cost of production and as such, general price level.

Nonetheless, economies will pursue supply-side policies in tandem with demand-side policies to tackle the various causes of inflation.

How would an A-level question that requires you to discuss policies to reduce inflation look like? Look at the following question for a possible example. This corresponds to ***EQ 1*** *(2019 H2 A-Levels) of your Price Stability Tutorial package.*

In 2017, the annual rate of inflation in Singapore was significantly lower than the average rate for Southeast Asia.

Assess whether policies designed to prevent a large and continuing rise in inflation in Singapore are the most appropriate policies for all economies. [15]

Why is deflation an issue for economies? Shouldn't falling prices be a good thing?

5. Deflation

Having looked at the problem of high inflation, we will now look at the flipside of that problem, which is that of deflation.

5.1. Definition of Deflation

Deflation is a **sustained** decrease in the general price level of an economy, or **negative** inflation rate.

5.2. Causes of Deflation

Since deflation is a persistent fall in the general price level within an economy, therefore this could be due to the following:

5.2.1. A decrease in AD

A decrease in AD can be caused by a decrease in any of the components of AD. This was seen during the global financial crisis where there was a fall in Singapore's exports due to weak external demand, causing a fall in Singapore's aggregate demand. This led to Singapore experiencing deflation for a period of time till AD started to grow again.

5.2.2. An increase in SRAS

An increase in SRAS can be caused by a fall in cost of production. This could come in the form of technological advancement or a fall in the price of factors of production. In 2014, with the increase in oil production from the US and a falling demand for oil globally, this cause oil prices to fall. Since oil is a major factor of production, this resulted in a fall in cost of production and thus an increase in the SRAS. This led to a fall in Singapore's CPI for many months, which shows that Singapore experienced deflation.

5.2.3. An increase in LRAS

An increase in LRAS can be caused by an increase in the quantity and/or quality of factors of production. This is exactly what happened in the late 1990s due to the opening up of China which increased the supply of low-wage workers to other countries such as Singapore. This led to falling global commodity prices in the period that followed due to lower costs as well as increased productive capacity of economies.

5.3. CONSEQUENCES OF DEFLATION

Just as there are detrimental consequences to high inflation, there are also similarly detrimental consequences to deflation. These consequences will be examined through the various economic agents – consumers, producers and governments.

In general, deflation caused by an increase in AS could be perceived as positive as it increases the real national income of the economy. On the other hand, deflation caused by a decrease in AD would be a potential problem for economies, specifically when there is further expectations of deflation. This implies that there will be a decrease in real national income.

5.3.1. Consumers

a) Spending on Goods and Services

If the root cause of deflation is negative growth i.e. fall in AD, consumers withheld their consumption of durable goods. This results in lower consumption of goods and services and thus lower material standard of living. If consumers expect further fall in general price level, this often encourages people to delay purchases because they will be cheaper in the future. In particular, it can discourage consumers from buying luxury goods / non-essential items. Therefore, periods of deflation often lead to lower consumer spending and lower economic growth.

If the deflation is caused by an increase in AS, this would lead to an increase in real income together with falling prices. This results in higher purchasing power. This results in greater consumption of goods and services and thus higher material standard of living.

b) Savings and Borrowings

Deflation due to negative growth could bring about fears of loss of employment and income. Apart from postponing their decision to consume durable goods, consumers would increase their savings as they anticipate any future unemployment. In the same vein, consumers will also reduce any form of borrowing to finance any new purchases and reduce their cost of borrowing. All these could result in reduction of one's material standard of living.

Japan is a case in point. Japan has been plagued by deflation over decades. The Japanese consumers are known to hold back consumption in order to save, and not borrow to finance new purchases despite low borrowing rates. However, Japan has started to show signs that deflation is finally coming to an end in Japan after 25 years.

Read more here!

c) Impact on Employment

As consumers postpone their consumption in anticipation of lower general prices, this could lead lower production of goods and services, and in turn results in an increase in unemployment over time.

However, with falling prices, the country's exports could become more price competitive and thus there would be an increase in the quantity demanded for exports. The increase in

production to meet the rising quantity demanded for exports will lead to a decrease in unemployment.

If the deflation is caused by an increase in AS, this might lead to higher levels of employment since more goods and services are being produced due to lower costs.

5.4. Producers

a) Investments

As consumers save more as they hold back on consumption, there is an increase the amount of loanable funds in the banks, and cost of investment becomes lower due to lower interest rates.

However, investment might still not take place due to the poor economic outlook. If the deflation is caused by a fall in AD, this would suggest that there is a poor economic outlook and thus firms will be reluctant to invest. This will lead to a further reduction in AD. Over the long run, if the level of investment does not result in a net capital formation, the capital stock in the economy will decrease and will cause the productive capacity of the economy to be reduced.

However, if the deflation is caused by an increase in AS, this could encourage more investments since there is higher expected profits with the lower costs and/or higher productivity of factors of production.

b) Fall in level of production

Deflation due to a fall in AD will lead to a fall in level of production of goods and services as consumers withhold their consumption and choose to save it instead of spending it. A reduced demand will result in reduced production.

Deflation due to increase in AS, will lead to an increase in production of goods and services as it is now cheaper to produce.

5.5. Governments

a) Impact on macroeconomic objectives

If the deflation is caused by a fall in AD, this will lead to negative growth and increased unemployment. The negative economic outlook will also bring about lower foreign investments which will cause a slowdown in potential economic growth, ceteris paribus

If the deflation is due to an increase in AS, this will bring about an increase in the real GDP and also lower unemployment. This improvement in the economic outlook may lead to greater foreign investments and thus create positive actual and potential growth, ceteris paribus. BOP surplus will also increase.

Regardless of the cause of the deflation, a fall in prices would increase the price competitiveness of the country's exports and thus could increase the export revenue, which in turn could improve the BOT.

b) Impact on Consumer and Investor Confidence

Similar to the impacts on other macroeconomic objectives, the consequences of deflation are dependent on the cause of the deflation. Deflation caused by falling AD would result in lower consumer and investor confidence while deflation caused by increasing AS would result in higher consumer and investor confidence, which in turn affects the consumption and investment behaviour of consumers and firms respectively.

How would an A-level question that requires you to discuss policies to reduce inflation look like? Look at the following question for a possible example. This corresponds to ***EQ 7*** *(2017 SAJC H2 Prelims) of your Price Stability Tutorial package.*

Explain the possible factors that might cause a negative rate of inflation in an economy. [10]

How can a government pull an economy out of deflation?

6. MACROECONOMIC POLICIES TO ACHIEVE PRICE STABILITY (DEFLATION)

As we have examined from the section above on the consequences of deflation, we know that some sources of deflation lead to undesirable consequences and thus would require the government to implement policies to bring about price stability.

Since the undesirable consequences are due to persistent decreases in AD, the most appropriate policies to implement are **expansionary demand management policies.**

6.1. Fiscal Policy

Governments may choose to use *expansionary fiscal policy* in times of deflation. In this situation they will use the expansionary fiscal policy to give a boost to the economy. This is applied when the deflation is caused by persistent decreases in AD. The government may do this by **lowering taxes** and/or by **increasing the level of government expenditure**. This will encourage economic agents to spend more. The government may:

- ♣ increase government expenditure by increasing public works or transfer payments; or
- ♣ reduce tax rates or eliminate certain taxes.

An increase in government expenditure or a reduction in tax will increase one or more components of AD. The series of induced increases in consumption spending that result from an initial increase in an autonomous component of AD and this causes the general price level to increase such that it is closer to the initial general price level. Fig. 8 illustrates the impact of this policy.

6.2. Monetary Policy centred on interest rate

Governments may also consider reducing interest rates to increase AD. A reduction in interest rates reduces the opportunity cost of borrowing for investment and increases the returns on investments, ceteris paribus. Thus, firms will have more incentive to borrow for further investments, leading to a rise in investment expenditure.

Similarly, lower interest rates reduce the opportunity cost of borrowing for households and therefore households are more inclined to borrow for spending (especially on consumer durables) which increases consumption expenditure in the economy.

A reduction in interest rate relative to other counties would also result in an outflow of hot money from that country. This would increase the supply of domestic currency in the foreign exchange market, resulting in a depreciation of the country's currency against other currencies.

The fall in exchange rate would make domestically produced goods cheaper in terms of foreign currency, resulting in higher foreign demand for local exports, giving rise to higher exports. Imported goods, on the other hand, would be more expensive in terms of local currency. This

will lead domestic consumers to switch to consuming domestically produced goods instead. This increase in net exports and the increase consumption expenditure will increase AD.

With the increase in consumption and investment expenditure, as well as increase in export revenue, AD increases and this causes the general price level to increase such that it is closer to the initial general price level, achieving price stability. Fig. 8 illustrates the impact of this policy.

6.3. Monetary Policy centred on exchange rate

Another policy that the government can implement is that of allowing the domestic currency to depreciate.

After domestic currency depreciates, price of the country's exports would be cheaper in terms of the foreign currency. This causes the demand for exports to increase and the export revenue (measured in domestic currency) will increase. The price of imports in domestic currency increases. This causes the quantity demanded of imports to decrease as consumers switch to buy fewer imported goods and more domestically produced goods, ceteris paribus. Net exports will increase.

Since (X – M) is a component of Aggregate Demand, AD would increase and this causes the general price level to increase such that it is closer to the initial general price level, achieving price stability. Fig. 8 illustrates the impact of this policy.

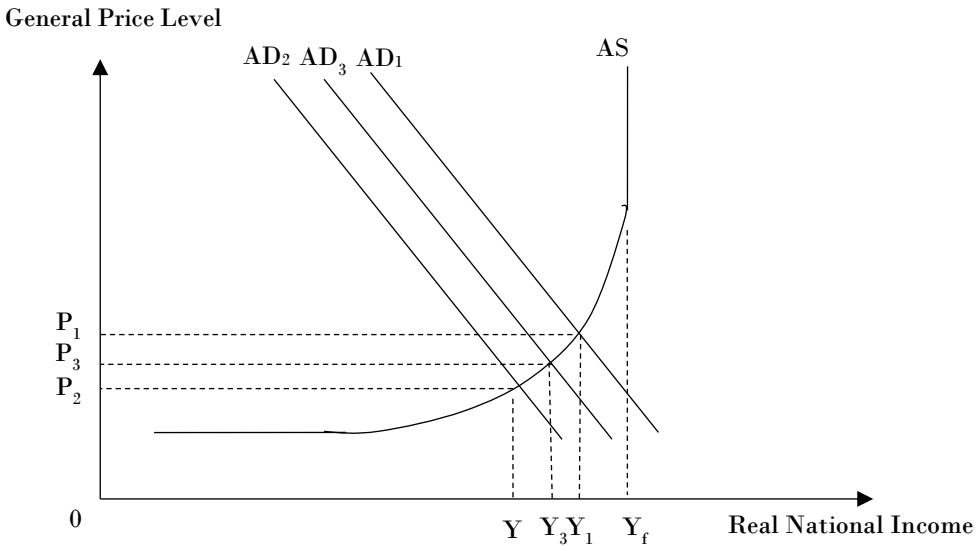

Figure 8: Effects of using expansionary policies to combat deflation due to fall in AD

From the diagram above, the economy experiences deflation, shown by the change from P_1 to P_2, due to the fall in AD from AD_1 to AD_2. With the expansionary policies implemented the AD increases to AD_3 and the new equilibrium general price level is P_3, mitigating the extent of the fall in prices, bringing about price stability.

Is inflation or deflation better?

7. Inflation vs Deflation – Which affects standard of living more?

Both high inflation and deflation are important economic phenomenon that have negative consequences for the economy's economic performances and standard of living. When there is no inflation or deflation, we can say that there is price stability. If, for instance, S$100 can buy the same basket of goods as it could, one and two years ago, then this can be called a situation of price stability. The economy's standard of living is maintained.

On inflation, economists may fall into two camps. One camp believes that that moderate inflation due to rising AD helps promote full employment and economic growth. And as such, policy makers can boost employment and output growth more by allowing the inflation rate to rise.

The other camp argued that inflationary policies do not boost employment or economic growth in the long run. Attempts to use policies to engineer higher employment or faster growth (i.e. increase AD) result in ever higher inflation but no more employment or growth.

Regardless, inflation affects our standard of living because it can reduce our spending power. Retirees are often greatly affected by inflation because many retirees live on a fixed income. As their income remains, rising prices result in greater expenditure as a portion of their income. Fixed income earners experience the same problem.

We can avoid the negative impacts of inflation if our income level rises at a pace that exceeds the rate of inflation. While some people choose to borrow the funds needed to maintain their current standard of living, the debt payments eventually erode their earnings in much the same way as inflation.

Deflation impacts consumers positively in the short term but negatively in the long term. In the short term, deflation essentially increases the purchasing power of consumers as prices fall. Consumers also do not have to borrow to finance purchases. This reduces their debt burdens. In the long run, the falling prices begin to affect companies that are forced to slash pay and employment in response to falling revenue. This results in incomes declining and falling consumer confidence, decreasing spending. Reduction in spending further pushes firms to cut prices to sell their products. Further, deflationary environments create incentives for consumers and businesses to put off spending money in expectation of falling prices. Such behaviour, on an individual level, feeds into economic weakness, as consumption is a primary driver of economic activity.

Prolonged deflation is often considered to be very damaging as it can exacerbate an economic downturn leading to higher unemployment. Deflation can become entrenched and difficult to

end. The experience of Japan in the late 90s and 00s was that when deflation became the new norm, it was very hard to change inflation expectations and regain normal growth.

In conclusion, it is price stability that supports and creates the foundation for economic growth and achieving higher standard of living.

*How would an A-level question that requires you to discuss policies to reduce inflation look like? Look at the following question for a possible example. This corresponds to **EQ 7** (2017 SAJC H2 Prelims) of your Price Stability Tutorial package.*

Discuss whether a negative inflation rate is more worrying than a positive inflation rate for a government. [15]