NYJC

TUTORIAL QUESTIONS

How the Macroeconomy Works

Economic Problems - Inflation

Economic Problems - Inflation
Essential Question: **What is the significance of inflation to an economy?**
Key Questions: **1. What is inflation and how do we measure it?** **2. What are the main causes of inflation and deflation?** **3. Why is inflation or deflation a cause for concern for the economy?** **4. How does a government “cure” inflation and deflation?**

Review on Economic Problems - Inflation

Below are general issues you need to know before attempting the tutorial questions. Please put a tick in the column, to indicate that you are aware of the issue and understand it clearly. Else do revise the issues before attempting the essay and case study questions.

Economic Problems - Inflation	Tick
1. What is inflation?	
2. What is deflation?	
3. What is disinflation?	
4. How is it measured?	
5. What are the main causes of inflation and deflation?	
6. How can AS/AD be used to illustrate inflation in an economy?	
7. What is the government objective in relation to inflation?	
8. What is the significance (effects) of a falling or rising inflation?	
9. How can the inflation rate be used to assess the economic performance of a country?	
10. What are the limitations of using the inflation rate to assess the economic performance of a country?	
11. How can demand side policies be used to address the problem of high inflation?	
12. How can supply side policies be used to address the problem of high inflation?	
13. How can labour productivity impact inflation?	

SECTION 1 – Economics ALIVE!

Article #1a: Inflation-fighting tools come with risks
Source: Straits Times, Sep 15, 2011

WHILE many developed economies face slumping growth and renewed risk of deflation, Singapore has been grappling with the opposite problem of inflation. The latest reading in July shows headline Consumer Price Index (CPI) inflation rising to 5.4 per cent year-on-year from a low of -0.9 per cent in October 2009.

Inflation in Singapore has not been confined to goods and services. The price of assets, especially property, continues to scale new heights, despite several rounds of measures to cool markets. The NUS Singapore Residential Price Index is up nearly 50 per cent since late 2009.

Why is Singapore's inflation running so high? Frequently cited reasons include high rental cost, rising prices for certificates of entitlement to own cars, and food prices. But these are symptoms of inflation, not the cause.

To understand why there has been a broad-based upward pressure on prices, we need to look at the macroeconomic cause. This requires understanding how Singapore conducts its monetary and exchange rate policy.

In most developed economies, the central bank adjusts domestic interest rates to control inflation. With an economy that is highly open to international trade, the Monetary Authority of Singapore (MAS) has focused on the Singapore dollar (SGD) to control inflation under the so-called 'basket, band, crawl' regime which manages the SGD within a tight band against a basket of currencies of its major trading partners. This band is adjusted periodically.

During normal times, this policy framework generally has served Singapore well. From 1998 to 2007, Singapore's CPI inflation averaged 0.74 per cent a year, bolstering the SGD's status as a 'hard' or 'safe haven' currency.

But these have not been normal times. In the wake of the deepest downturn since the 1930s, central banks in the United States and the European Union drove short-term interest rates down sharply. Short-term rates in the US have been close to zero since late 2008, and will likely stay there for at least another two years, as recently signalled by Federal Reserve chairman Ben Bernanke.

What does all this have to do with high inflation in Singapore? Well, a lot. With the trade-weighted SGD expected to appreciate around 2 per cent, money has been pouring into Singapore, as the SGD has delivered excess returns.

Take, for example, a US dollar-based investor. While holding USD essentially yields a zero return, investing in three-month SGD yields an expected annualised return of about 10 per cent (0.3 per cent on three-month Sibor plus 9.4 per cent on currency gain, based on the average in the past two years). In other words, the SGD has delivered an excess return of 10 per cent over the USD.

Discussion:

1. What is inflation and how is it measured?

Inflation refers to an economic situation where there is a sustained increase in the general price levels. It is measured by the percentage rate of change of a price index, usually the Retail Price Index (RPI) or Consumer Price Index (CPI). Rate of inflation = (RPI_T - RPI_{T-1}) / (RPI_{T-1}) * 100

2. Distinguish between disinflation and deflation.

Disinflation refers to a drop in inflation rate where general price levels are still rising but at a reduced rate while deflation refers to a persistent fall in general price levels thereby implying that supply > demand.

3. What is the difference between cause and symptoms of inflation?

Cause refers to the source, root or origin of inflation whilst symptoms refers to the features or signs that are indicative of inflation.

4. What are the causes and symptoms of inflation in Singapore as indicated in the above article?

Cause of inflation is the appreciation of the trade-weighted SGD and the inflow of excess returns on investments on SGD returns. Whilst the symptoms include the high rental cost, rising prices for certificates of entitlement to own cars, and food prices

5. Identify some possible benefits that inflation could bring to the economy!

Possible benefits would include: High wages allowing consumers to tide over the rising costs, Excess returns on Sing dollar holdings, Prospects of higher profits, better sales, expansion, ancillary services can benefit others……

6. Discuss the possible effects of inflation in an economy.

Possible effects would include: Gainers – debtors, shareholders, property owners, businessmen, producers/manufacturers, trade unions… Losers – creditors, savers, fixed income earners, pensioners, employers with strong trade unions…. Governments need to be more cautious as inflation may bring about adverse BOT, BOP, currency depreciation and capital outflows if inflation rates sore too highly.

Article #1b: Inflation-fighting tools come with risks (continued)
Source: Straits Times, Sep 15, 2011

To return to the initial question, the rising inflationary pressure in Singapore has been closely linked to Singapore's exchange rate management. Expectations of excess returns on the SGD, mainly because of the strengthening currency, have invited strong capital inflows which, in turn, have boosted credit growth, currently running near 28 per cent.

Strong credit growth, combined with negative real interest rate (interest rate minus inflation), have buttressed economic activity. But they also have fuelled CPI and property price inflation. The bottom line is that extremely loose domestic monetary conditions have been a root cause of high inflation in Singapore.

So what is the way out? There are three options.

- Option 1 is to maintain the status quo: Keep the current exchange rate system and continue to deploy 'prudential' policy, such as higher stamp duty, lower loan-to-value ratio, to curb property price and CPI inflation.

  But with interest rates in key economic blocs likely to stay at record low levels for an extended period, money is likely to continue to flood into Singapore, driving up asset prices. Prudential measures to cool property prices will likely meet limited success when the broader monetary conditions are very loose, as has been the case to date.

- Option 2 is to simultaneously manage the exchange rate and domestic interest rate. But this is not possible where there is free movement of capital; and capital controls would be anathema to an international financial centre like Singapore.

- This leaves Option 3: Relinquish the tight control on the SGD exchange rate and allow a widening of the range (or the 'band') within which the SGD fluctuates. This would allow greater freedom to adjust domestic interest rates. In the current environment, this means higher interest rates and a more moderate and sustainable money and credit expansion.

This option is not without risks.

The first risk is if the currency appreciates at a time when the global economy slows. A stronger SGD would slow Singapore's exports while higher interest rates would dampen consumption and investment, exacerbating rather than dampening the downturn.

If the market takes a turn for the worse, however, the SGD will weaken, buffering the economy from slowing exports.

The second risk is that greater exchange rate flexibility will lead to volatile inflation trends, as the economy remains highly open to trade. It will be important to have a medium- to long-term target for inflation or prices in Singapore and keep actual inflation within expectations.

None of the inflation-fighting tools is without risks and they will require careful monitoring.

<u>Discussion:</u>

Complete the following tasks based on the article above and you own knowledge.

1. What causes were sited to be the main contributor of the rising inflationary pressure in Singapore?

The rising inflationary pressure in Singapore has been closely linked to Singapore's exchange rate management. Expectations of excess returns on the SGD, mainly because of the strengthening currency, have invited strong capital inflows which, in turn, have boosted credit growth, currently running near 28 per cent.

2. What are the 3 main options available to help solve the situation?

Option 1 – Remain statusquo Option 2 – Simultaneously manage exchange rates and domestic interest rates Option 3 - Relinquish the tight control on the SGD exchange rate and allow a widening of the range (or the 'band') within which the SGD fluctuates

3. Which of the 3 in your opinion should Singapore take?

To mitigate Imported Inflation – MAS allowed SGD to appreciate! To mitigate domestic cost pressures – MND steps to boost supply of BTO HDB flats and private residential properties, HDB subsidies are also regularly reviewed, workers encouraged to upgrade skill sets to increase productivity, assistances eg GST voucher schemes, U-Save rebates…

Fill in the boxes below with appropriate examples when consumers make the decision in the light of the situation faced in Singapore.

Government

Constraints: Government budget (Funds), Information effects on BOT

Intended Benefits: Inflow of money, impact on BOT and BOP, Ec Growth etc

Unintended Costs: Impact on external value of currency, impact on foreign debt servicing

Unintended Benefits: Impact on external value of currency

Perspectives: Actual overall effect is dependent on the combined directional impact of price and interest rate changes in the economy, effectiveness of policy tools…..

Consumers

Constraints: Income, rising prices n C/L

Intended Benefits: asset prices rising…

Unintended Costs: Increased budget requirements….

Unintended Benefits: Higher wages..

Information: Consumer geographics….

Perspectives: Consumption patterns & habits…..

Producers

Constraints: Profitability, ability to react to changes to price and interest rate changes.

Intended Benefits: Increased profits

Unintended Costs: Rising raw material costs, transportation costs…

Unintended Benefits: Increased chances to do business.

Information: Market outlook……

Perspectives: Capital vs High tech production…..

1. How would the different degrees of inflation influence the effects it may have on an economy?
2. How would the different causes of inflation influence the effects it may have on an economy?
3. What would determine a government's choice and timing of policies used to address inflation?
4. Are demand- or supply-side policies more effective in addressing the problem of inflation in an economy?
5. How may measures adopted to address inflation be in conflict with other macroeconomic objectives of the government?

SECTION 2 – Case Study

CSQ1: Tethering Inflation or Is It?
[Suggested Answer on Page 8-19T]

Extract 1

Rapidly rising inflation is emerging as one of the biggest economic worries facing Asia. The problem could hardly have come at a worse time for policymakers, amid fears over the extent and impact of the US slowdown on Asia's export-dependent economies. Inflation will bring with it serious economic risks for the region in 2008.

The main cause of rising inflation has been higher food prices, which have risen across the region due to a combination of drought in key production areas, reduced crop acreage, declining stocks and rising consumption due to higher living standards.

With oil trading at well over US$100 a barrel, it is hardly surprising that higher oil and other commodity prices have also contributed to inflationary pressures in the region. This is in part due to the surging demand by China and India. However, higher oil prices have only had this effect in countries that do not heavily subsidise fuel prices or impose price controls. Many governments are resorting to price controls and government subsidies to curb inflation. Countries, such as India, Indonesia and Malaysia are shielded to varying degrees from the impact of rising global oil prices by fuel subsidies which accounted for over 10% of government spending in the latter two countries. However, this has helped to keep a lid on headline inflation[1]. In 2008, inflation rates for both India and Malaysia were below 6% while Indonesia’s was 11%. In January the Chinese government froze the prices of energy, transport and water, and announced that producers of essential food items must seek approval before raising prices. In India, the government has banned the export of non-basmati rice, edible oils and pulses. Cement and possibly steel exports are also banned. It has also removed import duties on all crude edible oils, rice and maize.

The rise in inflationary pressures could hardly have come at a worse time in the global economic cycle. With US GDP growth expected to slow sharply this year, Asian central banks would ideally be cutting interest rates to support domestic demand at a time when exports are forecast to slow. However, cutting interest rates when inflation is rising is risky. Moreover, widening in interest-rate differentials between rates in Asia and those in the US will further undermine exports. The answers, thus, depend on what has been driving inflation up and whether those pressures persist even as economies slow. Ultimately, inflation is a monetary phenomenon, so responsibility lies with central bankers. However, others worry that the task of central bankers has become harder as globalisation has shifted from being a disinflationary phenomenon to an inflationary one.

Source: Adapted from Economist, Jan 17th, Feb 21st, Apr 15th and 18th 2008

1 Headline inflation is a measure of the total inflation within an economy and is affected by areas of the market which may experience sudden inflationary spikes such as food or energy - Wikipedia

Table 1: Food Weights in Consumer Price Index of Selected Countries

Economy	% Share
India	57.00
Indonesia	42.30
People's Republic of China	33.20
Singapore	23.38
Republic of Korea	14.00

Source: ADB, National Statistics Offices, 2008

Table 2: Selected Macroeconomic Data for China

	2005	2006	2007
GDP deflator (% per annum)	4.2	3.7	5.2
GDP per capita (current prices, yuan)	14061.9	16122.2	18885.3
Life expectancy at birth (years)	72.27	72.58	72.88
Average no. of hours of work per week	47.8	47.3	45.5
Exports of goods (US$, bn)	762	968.9	1217.8
Imports of goods (US$, bn)	660	791.5	956

Source: CIA World Factbook, ILO, OECD

Table 3: Money Supply (M1: Seasonally Adjusted) of Selected Countries

	2005	2006	2007	2008
US (US$ bn)	1374.3	1365.5	1373.0	1595.3
Japan (Yen bn)	483 800	484 200	486 800	481 800
China (Yuan bn)	10727.9	12602.8	15251.9	16621.7
EU (Euros bn)	3423	3685	3833	3978

Source: Central Banks of Various Countries

Extract 2

China is suffering from rising inflation with year-on-year rate reaching a peak of 8.7% in February 2008. It has shown up largely as a sharp increase in food prices, in a time of food shortages caused partly by bad weather and partly by the outbreak of blue ear pig disease. Sharply rising food prices combined with stable prices for other goods have made it seem to many as if Chinese inflation is primarily a problem of food supply constraints.

However, in a February 4 article in the Financial Times Massachusetts Institute of Technology, professor Kenneth Rogoff argued that "Those who believe that the cause of China's inflation is too little pork, rather than too much money, are seriously mistaken." He believes that China is suffering from the monetary consequences of its rising trade surpluses. This is because large net foreign currency inflows into the country from both the current and capital accounts must be purchased by the People's Bank of China (PBOC) in order to manage the value of the yuan within its prescribed level.

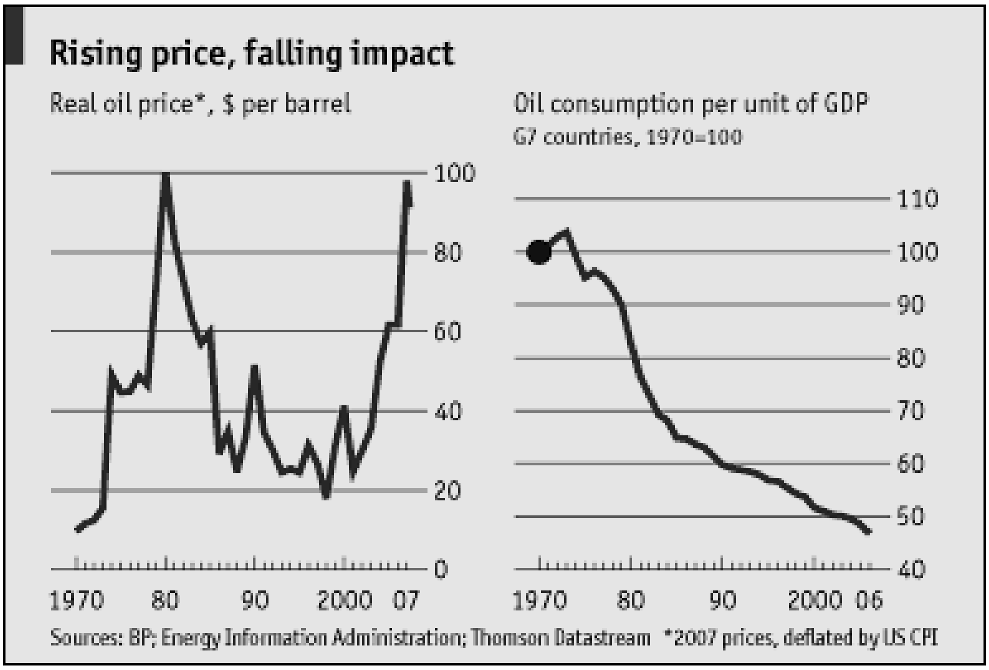
Source: Adapted from Far Eastern Economic Review (April 2008 Issue)

Extract 3

Today's oil prices would have been unthinkable until very recently. Six years ago, when a barrel of crude oil could be bought for as little as US$20, oil prices at today's levels would have raised fears of deep recession. Notwithstanding the spectre of past oil shocks, crude prices have risen to ever-dizzier heights without derailing a five-year period of strong global growth. But why has rising oil prices become less scary? Today's economies are able to take a punch compared with their rigid state in the 1970s, where union power and indexed contracts meant wages were unyielding and instigated a damaging wage-price spiral.

Source: Nov 15th 2007, The Economist

Chart 1



Source: Nov 15th 2007, The Economist

Questions

(a) Describe the trend for world real oil prices from 1970-2007. [2]

(b) Using the data, assess how households and firms in Asia would be affected by: [8]
 (i) the rise in food and oil prices
 (ii) government measures to control prices.

(c) How useful is table 2 in enabling us to draw conclusions about the extent of changes in average living standards in China? [6]

(d) Explain why inflation today may not have that severe an adverse effect on the macro economy. [4]

(e) With reference to the data, do you agree that “inflation is a monetary phenomenon” and hence monetary policy is the most effective way to reduce inflation? Justify your answer. [10]

CSQ2: The Inflation Tsunami
[Suggested Answer on Page 9-23T]

Extract 1: Singapore's inflation hits 25-year high

Singapore's annual inflation rate hit a 25-year high of 6.6% in January, according to Department of Statistics (DOS) data released on Monday. The inflation rate, as indicated by the consumer price index (CPI), was the highest since the 7.5% hit in March 1982.

The Ministry of Trade and Industry (MTI) issued a statement along with the DOS data, saying the year-on-year jump in inflation in January was in line with the official inflation forecast of 4.5-5.5% for 2008.

The DOS said the jump in inflation was due largely to an 11.1% spike in housing costs recorded after a revision to values of public housing. Housing costs, which account for 21 percent of the consumer price index, have the third-largest weighting after food and transport/communication. Food prices, which carry the largest weighting in the CPI, rose 5.8% in January from a year earlier. Transport and communication costs rose 6.9% between January 2007 and January 2008, driven by soaring global fuel prices and higher taxi fares. Higher petrol prices also contributed to a rise in transport costs for food. This, coupled with higher global food prices, means more expensive grocery bills.

Source: Channel News Asia, www.channelnewsasia.com, 25 February 2008

Extract 2: UK Inflation Soars to 5.2%

Inflation unexpectedly soared to 5.2% last month, the highest in 16 years, after power companies hiked gas and electricity bills.

The annual rate in the consumer prices index (CPI) was up from 4.7% in August and the highest since the series began in January 1997. The figures are expected to mark the peak in the spiralling cost of living seen this year.

The main reason consumer price inflation topped 5% for the first time was sharp rises in utility bills. Electricity prices were 30.3% higher on a year ago while gas prices soared by 49.9%. The annual rate of inflation for energy and other household bills hit 15%, the highest since January 1989.

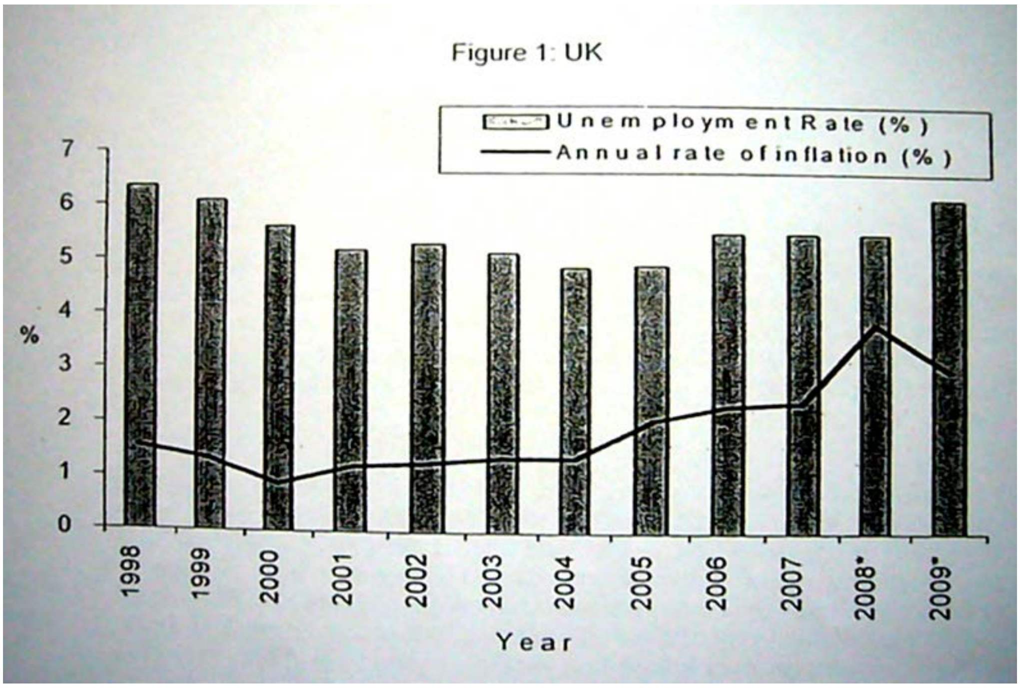
A separate measure, the Retail Prices Index (RPI) -which includes mortgage payments and is more commonly used for wage bargaining and pension payments -reached 5 per cent in July, up from 4.6 per cent, which is the highest level since July 1991.

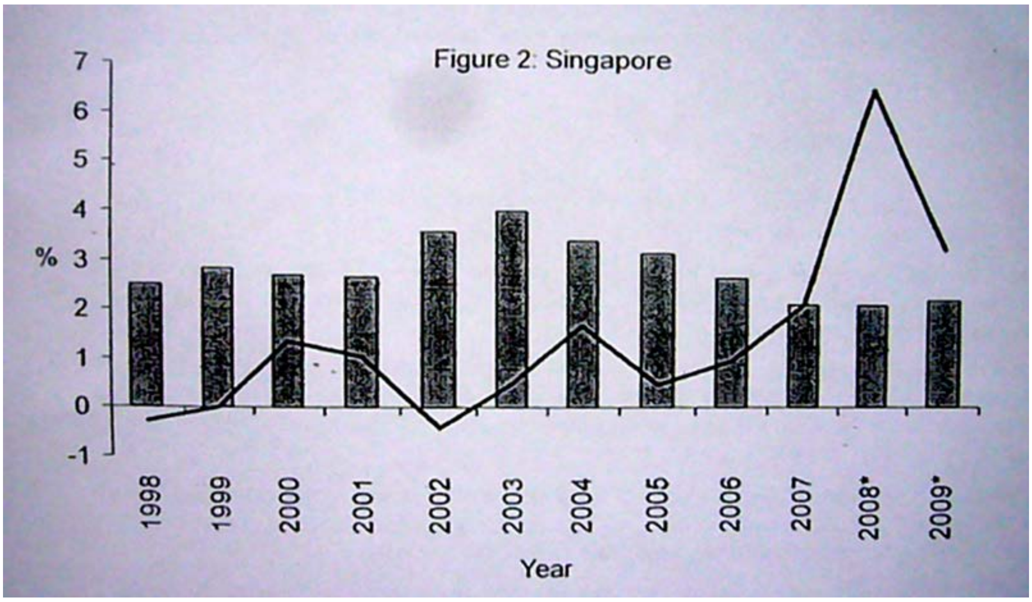
The rise in the RPI spells good news for pensioners and those receiving benefits. September's RPI is commonly used by the government to calculate pension increases for the coming year. Pensions usually rise by 2.5% or in line with the headline RPI, whichever is higher.

Paul Kenny, general secretary of the GMB union, said: “Inflation is impacting on the economy differently in different sectors Food manufacturing, for example, is being squeezed, leading to severe job losses. Other sectors like oil and energy are printing inflation by hiking prices."

Source: Adapted from The Guardian, http://guardian.co.uk, 14 Oct 2008
and My Express, http://express.co.uk 12 Aug 2008

Figures 1 & 2: Inflation & Unemployment in the UK and Singapore





* estimates

Note:
Annual Rate of Inflation calculated based on annual percent change in average consumer prices
Unemployment Rate calculated based on Total Labour Force

Source: IMF World Economic Outlook Database, www.imf.org, Oct 2008

Extract 3: Inflation in Other Economies

In a further twist to the global inflationary spiral, Indian inflation has shot into double figures, reaching 11 per cent last month, its highest in 13 years. As in China, where inflation is nearing double digits, much of the recent increase in prices has been due to rising fuel costs after the withdrawal of state support.

In Vietnam, where the year-on-year rate of consumer price inflation reached 19.4% in March, various factors such as a general overheating of the domestic economy, an undervalued exchange rate and inappropriate monetary policy have added to the impact of rising food prices in fuelling inflation.

Of other major economies in Asia, only South Korea, Taiwan and Malaysia reported inflation of under 5% in their most recent data release.

The rise in inflationary pressures could hardly have come at a worse time in the global economic cycle. In Asia, there are already fears over the extent and impact of the US slowdown on these export-dependent economies. Ideally, central banks in these economies would be cutting interest rates to support domestic demand at a time when exports are forecast to slow. However, cutting interest rates when inflation is rising is risky. As a result, central banks are faced with the unappealing option of either keeping interest rates on hold, or raising them. Moreover, owing to lower interest rates in the US, this is likely to lead to a further widening in interest-rate differentials between rates in Asia and those in the US. This will put further upward pressure on Asian currencies, most of which have been steadily appreciating against the US dollar over the past year.

Source: Adapted from The Independent, www.independent.co.uk, 21June 2008
and The Economist, www.economist.com, 15 Apr 2008

Figure 3: Consumer price inflation in emerging economies (%)

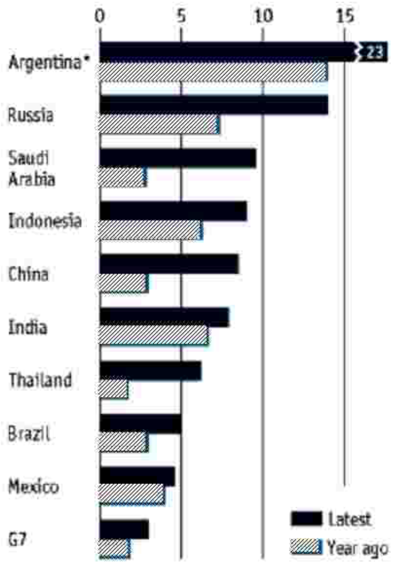
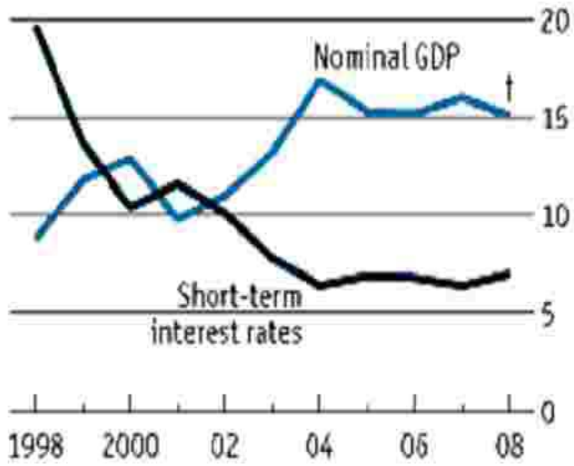


Figure 4: Emerging economies' * Nominal GDP growth and interest rates (%)



* Average of ten biggest economies
Note: 2008 are forecasted figures
Source: The Economist, www.economist.com, 22 May 2008

Questions

(a) (i) With reference to Figures 1 & 2, compare the trends in consumer prices between the UK and Singapore over the period 1998 – 2007. [2]

(ii) To what extent does the information in Figures 1 & 2 suggest that there is a stable relationship between inflation and unemployment in the UK and Singapore? [4]

(b) Using AD/AS analysis, explain how higher global fuel prices have contributed to a rise in consumer prices in the Singapore economy. [3]

(c) Using extract 2 and your own relevant knowledge, discuss the possible consequences of inflation on the UK economy. [8]

(d) (i) Explain one possible link between changes in short term interest rates and nominal GDP growth rates in the emerging economies as shown in Figure 4. [3]

[10]

(ii) Assess whether central banks in these economies should adjust their interest rates in the face of rising inflation and an expected slowdown in the US economy.

SECTION 3 –Essays

SECTION 3A –Lower-Order Skills

1. Explain why a country may experience a persistent rise in its general price level. [10]
   [Suggested Answer on Page 9-27T]

SECTION 3B – Higher-Order Skills

1. In August 2000, the Chinese government was concerned that increases in AD were putting too much pressure on the economy.

   (a) Explain why a government is concerned about the excessive pressure created by rising AD. [10]
   (b) Discuss whether fiscal policy alone might be effective in reducing this pressure. [15]
   [Suggested Answer on Page 9-29T]

2. Singapore's inflation hits 25-year high of 6.6%. (www.channelnewsasia.com, 25 Feb 2008)
   (a) Explain the possible causes of inflation in Singapore. [10]
   (b) Discuss whether a low rate of inflation should be the economic priority of the Singapore government. [15] **[Suggested Answer on Page 9-34T]**

3. "In tandem with the slowing economy, price pressures have eased. After averaging 6.5% in 2008, inflation fell to 2.1% in Q12009."
   - MAS Annual Report 2008/2009
   (a) With reference to the statement above, explain the causes of falling inflation in Singapore. [10]
   (b) Discuss the view that a strong Singapore dollar is the most appropriate policy to maintain price stability. [15]
   [Suggested Answer on Page 9-40T]

4. Discuss whether supply-side policies are best for achieving low inflation in the Singapore economy. [25]
   [Suggested Answer on Page 9-43T]

SECTION 3C – Challenging Essays

1. Prices in an economy can be affected by external factors as well as by domestic factors. Similarly, prices will affect the domestic and external sectors of the economy.

   (a) Explain how changes in the external value of a currency can affect the domestic price level. [10]
   (b) Discuss whether an increase in the general price level will affect the domestic sector more than the external sector. [15]
   [Suggested Answer on Page 9-48T]

2. "Since inflation is undesirable, deflation must be desirable." Discuss. [25]
   [Suggested Answer on Page 9-49T]

3. "The policies which a government usually adopts to reduce the rate of inflation in an economy may do more harm than good."

   Explain and evaluate the policies which a government may adopt to reduce the rate of inflation in an economy." [25] **[Suggested Answer on Page 9-50T]**

2017 Other JCs' Prelims – INFLATION (H2)		
1	ACJC	(a) Explain why the Singapore government aims for low rates of inflation. [10] (b) Discuss whether failure to achieve low rates of inflation in Singapore is more likely to be caused by domestic or international factors. [15]
2	AJC	(a) Explain possible domestic and external causes of deflation in a country. [10] (b) Discuss the extent to which deflation affects the balance of payments position in an economy. [15]
3	MJC	Singapore entered its 18th consecutive month of negative inflation in April 2016, the longest streak of deflation on record. While previous episodes of deflation coincided with recessions, analysts noted that lower global crude oil prices, cheaper utilities as well as transport costs also had a significant impact. Adapted from Singapore Business Review, 24 May 2016 (a) Explain the possible causes of deflation in Singapore. [10] (b) Discuss the view that deflation brings about more costs than benefits to an economy. [15]
4	MI	The rising cost of foreign package holidays and imported computer games helped to push the UK inflation rate up to 2.9% last month from 2.7% in April. The latest inflation rate is the highest since June 2013, and above the Bank of England's 2% target. The pick-up in inflation is likely to continue the squeeze on consumers. The Guardian, 13 June 2017 (a) Explain how firms and households are affected by inflation. [10] (b) Discuss the alternative policies that the UK government might adopt to alleviate the inflationary pressures. [15]
5	NJC	'For the second month running the UK's headline figure for inflation – the rate of increase in the general price level – is negative. Some economists take the view that this change is essentially good, driven by low energy prices and weak wage pressure. Source: Adapted from The Guardian, 17 Nov 2015 (a) Explain the possible causes of the above-mentioned change in general price level in the UK. [10] (b) Discuss the extent to which a negative change in the general price level is more desirable than a positive change in the general price level of an economy. [15]

6	NYJC	Germany took in 1.1 million migrants in year 2015. The government will spend 12 billion euros on accommodating and integrating them in year 2016 in the midst of a decline in exports hit by global economic weakness. Furthermore, Germany's inflation rate may reach the European Central Bank 2 percent price stability ceiling in year 2016. It is unlikely to stay there for long as there are price pressures far weaker elsewhere in the European region. Source: various (a) Explain how the combination of a decline in export revenue and an increase in government expenditure could affect the circular flow of income in Germany. [10] (b) Discuss whether an economy's inflation rate is more likely to be determined by domestic or external factors. [15]
7	PJC	Singapore's inflation moderated to −0.5% in 2015, from 1.0% in the preceding year. In October 2015, MAS eased policy further by reducing the rate of appreciation of the policy band slightly, in view of reduced price pressures alongside a weaker growth outlook. Source MAS Annual Report 2015/16 (a) Explain the possible causes of deflation in a country. [10] (b) Discuss whether exchange rate policy should remain the most important policy in maintaining price stability in Singapore. [15]
8	RVHS	Economists often distinguish small and open economies, such as Singapore, from large and less open ones. (a) Explain how size and openness could account for why economies pursue policy mix to different extent. [10] (b) Discuss how far the size and openness of Singapore have influenced her choice of policies to achieve price stability. [15]
9	SAJC	(a) Explain the possible factors that might cause a negative rate of inflation in an economy. [10] (b) Discuss whether a negative inflation rate is more worrying than a positive inflation rate for a government. [15]
10	SRJC	(a) Explain the domestic and international factors that could cause deflation. [10] (b) Discuss the alternative policies that a government could adopt to address the problem of deflation. [15]

A Level Examination Questions – UNEMPLOYMENT (H2)		
1	2007	'To be considered successful, an economy needs to achieve low unemployment, low inflation and stable economic growth.' (a) Explain this statement. [12] (b) Discuss whether fiscal policy is the most effective way for Singapore to sustain a successful economy. [13]
2	2010	When there are large increases in the prices of oil and other primary products, they are usually expected to lead to rising inflation throughout the world's economies. Discuss the extent to which these factors are likely to affect the rate of inflation in Singapore. [25]
3	2012	During 2009 the Bank of England engaged in what is known as 'quantitative easing' by pumping more than £200 billion into the economy. Record low levels of interest rates have also been maintained within the UK economy. Quantitative easing and low interest rates were also adopted by the US . (a) Explain why exchange rates rather than interest rates are the preferred choice as the instrument of monetary policy in Singapore. [10] (b) Discuss the likely impact on the Singapore economy of quantitative easing and low interest rates in the US and the UK. [15]
4	2013	On 1 September 2011 the Monetary Authority of Singapore (MAS) reported that inflationary pressures remained strong because of the tight labour market, high consumer spending and rising global commodity prices. Source: http://www.mas.gov.sg/resource/eco_research/eco_dev_ana/Recent_Economic_Developments.pdf, accessed 1 September 2011 (a) Explain how the factors mentioned above will lead to inflationary pressures remaining strong in Singapore. [10] (b) Discuss alternative economic policies that the Singapore government might consider adopting to alleviate these inflationary pressures. [15]
5	2015	In its September 2013 Recent Economic Developments Statement, the Monetary Authority of Singapore noted that inflation was expected to rise moderately. Strong GDP growth in Q2 2013 was mainly due to increased output in the manufacturing and trade-related service sectors with a slowing of growth in private consumption. There was expected to be continued strong wage pressure from persistent tightness in the labour market caused by shortages in labour supply accompanied by steady expansion in demand for goods and services from the US, Japan and the Eurozone. Source: Recent Economic Developments in Singapore, MAS, 5 Sep 2013 (a) Explain how the above mentioned factors might have caused the rate of inflation to rise in Singapore. [10] (b) Discuss whether exchange rate appreciation should remain the most important policy instrument in controlling the rate of inflation in the Singapore economy. [15]

6	2017	Singapore is considered to have a high standard of living, a high cost of living and a strong overall macroeconomic performance. (a) Explain the link between standard of living, the cost of living and the macroeconomic performance of a country. [10] (b) Discuss the economic policies which might have resulted in Singapore arriving at this position. [15]

Chapter 8: Inflation Suggested Answers

SECTION 2 – Case Studies

Suggested answers to Question 1: Tethering Inflation or Is It?

(a) Describe the trend for world real oil prices from 1970-2007. [2]

The world real oil prices were generally increasing. It rose from 1970 and peaked in 1980 before falling in 1998. Thereafter, it rose and peaked in 2007 again.

Alternative Answer:
From 1970 – 1980, it was rising after which it fell until 1988. It was volatile at around $30 per barrel before rising from 2001.

(b) Using the data, assess how households and firms in Asia would be affected by: (i) the rise in food and oil prices (ii) government measures to control prices. [8]

(i) Effect of the rise in food and oil prices:

Households:
- There are differing impacts in the affordability of necessities: the poorer countries (India and Indonesia) are harmed more since food accounts for a large proportion of the consumer price index (CPI) basket (see Table 1) compared to richer countries like Korea and Singapore. This in turn means that higher food prices have a much bigger impact on the overall rate of inflation than in richer economies, where food accounts for a smaller proportion of the CPI basket.

Firms:
- Given that countries in Asia tend to be producers of agricultural products like rice etc., firms selling these products are likely to gain a higher TR due to inelastic demand.
- However, firms that rely heavily on oil (eg. transport companies) will experience a rise in production cost and hence falling profits

(ii) Effect of government measures to control prices:

Households:
- Households may not be affected much if government provides subsidies (the 3 countries mentioned in the data were having relatively mild inflation). In addition, with the removal of import duties and hence greater competition, the food items could be cheaper. But certain households (especially upper income group where the economies have progressive income tax system) will be worse off as tax burden may rise if government raises tax to finance these subsidies.
- For countries which use price ceiling, some households will have access to food at lower prices than before. However, others will suffer shortages and turn to black markets.

Firms:

- For export-oriented firms in the commodities and food industries as well as those in local industries, removal of import duty implies that they may now face greater competition from higher volume of imports with possible lower prices. As a result, the profits margin will be squeezed.
- Firms selling products where price ceiling is imposed could potentially gain higher revenue from black markets.
- Firms that use oil will face shortages if their governments use price ceiling to control price increase. This leads to higher production cost.
- With export ban, domestic output will rise and given that such products tend to have inelastic demand, price will fall sharply and hence total revenue of these firms fall.

Conclusion:

- While most in Asia will suffer the negative impacts of inflation, the extent will depend on the type of policies carried out by their governments and the long/short term effects. Eg. subsidies may temporarily help households but in the long run, such measure may not be sustainable. In Malaysia and Indonesia, such subsidies account for over 10% of the spending. These spending distort prices and lead to inefficiency. In addition, while some may not be much affected by the inflation, this is often because some else in the society has borne the burden of such inflation.
- Price ceiling reduces incentive for firms to increase supply. This creates shortages and could potentially push prices higher.

Knowledge, Understanding, Application and Analysis		
L2	Identify and explain the impacts on firms and households	4-6
L1	Identify impacts on firms and households	1-3
E	Evidence of analysis and evaluation with the use of relevant data	1-2

(c) How useful is table 2 in enabling us to draw conclusions about the extent of changes in average living standards in China? [6]

- Data provides changes in GDP deflator, enabling us to factor in inflation and so calculate changes in real GDP per capita. The figures have risen throughout the 3 years which indicates that purchasing power has risen. But this figure does not reveal how different types of households will be affected. It also does not give real disposable income which provides a better indicator of households' ability to consume goods and services.
- Table 2 seems to indicate that SOL could possibly rise. In terms of material indicator, imports have risen (which could indicate higher consumption). However, exports are rising faster. This means that domestic resources are allocated to produce output for overseas consumption. In this aspect, SOL may not have increased. But the rising trade surplus could mean rising income for certain sectors. For non-material indicators, hours worked fell and life expectancy rose.
- Hence, while Table 2 provides a rough indication of possible rising SOL, other indicators like Gini coefficient (shows income distribution) or HDI is needed to draw further conclusions that China's SOL has indeed risen.

Knowledge, Understanding, Application and Analysis		
L2	Provide a balanced view using both material and non-material indicators. Shows ability to compare nominal GDP changes with inflation rate or export vs import values and draw conclusions; Provide a conclusion; suggest and explain use of alternative indicators to complement Table 2.	4-6
L1	Superficial and limited treatment of the data (eg. use only GDP per capita to show rising SOL without considering impact of inflation or consider use of non-material indicators alone to draw conclusions.) No explanation / analysis.	1-3

(d) Explain why inflation today may not have that severe an adverse effect on the macro economy. **[4]**

- Extract 3 shows that the labour market has become more flexible in response to economic conditions. Wages could now be tied to workers' productivity rather than be index-linked to protect real wages. In this way, nominal wages may not need to keep up with inflation rates if workers' productivity remains unchanged during a period of inflation. If so, producers need not pass on these higher wage cost in the form of higher prices to consumers.
- Better policy-making in the context of inflation caused by crude oil.
- More flexible institutions that respond quickly before inflation escalates Globalization such that the overall impact on the world is reduced.

(e) With reference to the data, do you agree that "inflation is a monetary phenomenon" and hence monetary policy is the most effective way to reduce inflation? Justify your answer. **[10]**

- MP uses interest rates to change AD. Raising interest rates means tightening credit → ↓C,I → ↓AD → demand-pull inflation is reduced.
- In Table 3, evidence indicates that money supply of major economies in the world has in general risen since 2005. Extract 2 further confirms that inflation in China is due to monetary factor. As a result of the rising trade surplus, China's currency has been appreciating. However, to fix its ER within a certain band, China has to increase the supply of its own currency in the foreign exchange market. This in turn leads to rising domestic money supply since the currency will eventually be in the hands of locals. Rising money supply will in turn lead to rising transactions and hence demand-pull inflation.
- Since the cause is due to a monetary phenomenon, then MP may be effective as it is a demand-side policy. However, a tight MP may further worsen the economic slowdown (Extract 1: US is facing slowing GDP growth) especially since Asia's economies are export-dependent. A fall in income in one country will mean fewer exports to its trading partners.
- However, Extracts 1 and 2 also indicate that the sources of inflation are due to supply disruptions and rising living standards and industrialization ("surging demand by India and China").
- Inflation due to non-monetary causes like supply shocks or imported inflation (as a result of globalization) cannot be addressed by MP. Consider the consequences of a mismatch of policies to the cause of the problem. Eg. the use of contractionary MP to reduce supply shocks inflation will further reduce growth with no effect on rising GPL.
- To deal with supply shocks, price or trade policies can be adopted as in the case mentioned in Extract 1. This will help to mitigate the temporary effects of cost-push inflation.

- However, for countries causing the rise in demand for oil due to industrialization or higher income (eg. China and India), MP will be effective since AD is curbed. In China's case, allowing its currency to appreciate will help to reduce its growing trade surplus (Table 2) since this is a main cause driving the inflation.
- Additional supply-side measures could be adopted to reduce the inflation. In Extract 3, having a flexible labour market such as linking wages to performance (Eg. civil service system in Singapore) will ensure that wages does not rise in tandem to inflation and hence higher wage cost does not lead to higher prices. Use of technology and R&D will also ensure greater energy efficiency and hence reduced demand for oil.

Conclusion:

- The effectiveness of MP lies in determining "what has been driving inflation up" (Extract 1). While there is evidence to suggest that excessive money supply could be the cause, this will partially solve the problem of inflation. Supply disruptions or possibility of other real factors (like population growth etc.) not provided in the data could also be the causes. Hence the need to ensure that the policies match the cause of inflation.

Knowledge, Understanding, Application and Analysis		
L2	• A 1-sided view that explains how MP alone can reduce inflation mentioned in the data • Show attempts to match policies with causes with gaps in the explanation. Some attempts to support with the use of data.	4-5
	• Consider possible macroeconomic trade-offs when using policies to tackle inflation • Provide a balanced view that the policies in use must match with the cause of the inflation with support from the data. Explain possible consequences due to a mismatch of policies to causes. • Consider the use of at least 2 relevant polices (other than MP) with evidence from data	6-7
L1	• Identify relevant data with hardly any explanation • Provide definition of relevant concepts like MP	1-3
E	• Conclude that the most effective way is to match causes of the problem with the relevant policies bearing in mind the possible cost/trade-offs. Consider limitation of data like real factors	1-3

Suggested answers for Question 2: <u>The Inflation Tsunami</u>

(a) (i) With reference to Figures 1 & 2, compare the trends in consumer prices between the UK and Singapore over the period 1998 – 2007. [2]

Consumer prices have generally been rising in both countries over the years. However, while prices in UK have been rising at a relatively steady rate, the rate of increase in prices in Singapore is more uneven. In addition, there were years where consumer prices fell in Singapore (2002 compared to 2001), unlike in UK where prices have always been rising every year.

Candidates need to recognise the similarities and differences.

(a) (ii) To what extent does the information in Figures 1 & 2 suggest that there is a stable relationship between inflation and unemployment in the UK and Singapore? [4]

- A 'stable relationship' would exist if the both inflation and unemployment within the country exhibit a consistent trend with one another over the same period. As such, Figure 1 provided more evidence of a stable relationship. The variations in the rates of inflation and rate of unemployment are not significant. Throughout the period from 1998 to 2007, the year-on-year change in inflation and unemployment rate is consistent with each other.
- However, such a stable relationship is not evident in Figure 2. There are greater fluctuations in inflation rate during the whole period compared to unemployment rate. While unemployment rate increases from 1998 to 2003, inflation rate fluctuates – it increases and falls and increases again – with the change in percentage point being greater.
- Thus, the information in Figures 1 & 2 does not offer a clear conclusion that there is a stable relationship between inflation & unemployment.
- A variety of responses as to whether there was a stable relationship between the 2 variables will be accepted provided the meaning of 'stable' is clearly stated and there are clear references to the data.

(b) Using AD/AS analysis, explain how higher global fuel prices have contributed to a rise in consumer prices in the Singapore economy. [3]

- Higher fuel prices increase the petrol costs, which in turn raise the transport costs of firms. Cost of shipping and importing goods becomes more expensive too. Since Singapore imports all its raw materials, and many of its intermediate and final goods, this will inadvertently increase the average production costs for many firms. This may cause producers to cut down on production to maintain profits levels, ceteris paribus, causing the aggregate supply to fall in the short run.
- With a reduction in planned production and aggregate demand remaining unchanged, this will cause the general consumer prices to rise, as the higher costs is passed on down to the whole supply chain and ultimately to the consumers.

Note: Candidates need to explain the underlying process.

(c) Using extract 2 and your own relevant knowledge, discuss the possible consequences of inflation on the UK economy. [8]

- Inflation refers to an economic situation where there is a sustained rise in the general price level. According to Extract 2. inflation in UK had soared to its highest level in 2008, based on changes in both CPI & RPI. This may likely bring about many negative consequences, although there are possible positive impacts as well.
- With inflation, shoe-leather and menu costs are often incurred. Since each dollar can now buy fewer goods and services, households will demand more cash for transactionary purposes (e.g. for paying the utility bills etc) and this may necessitate more trips to the bank.
- This incurs time & effort. Firms, on the other hand, will have to adjust their price lists upwards to reflect the higher prices. Extra resources are again needed to carry this out. As a result, there are opportunity costs involved when there is inflation. Such opportunity costs will rise in UK if inflation rises.
- Secondly, inflation can bring about inefficiency in the UK economy if it rises too rapidly and one is no longer able to anticipate the inflation rate correctly. When firms are no longer certain of the future costs and prices, they may find it difficult to predict the profitability of additional investments and are thus less willing to engage in such risky ventures. As a result, new investments may be less forthcoming. This can adversely affect the long run aggregate supply of UK as its productive capacity would now grow at a slower rate. Inflation can also lower the ability of firms to invest. As mentioned in Extract 2, with energy prices rising by its highest rate since 1991, certain sectors in the UK are already suffering from lower profits (e.g. food manufacturers mentioned in Extract 2, para 7), causing unemployment to rise in these sectors. With less profit, such firms are less able to invest in capital goods and new technologies, negatively impacting on future growth.
- In addition, rising inflation may drive firms and household to hedge against the falling value of money. Resources may be diverted into other assets whose values are rising, such as properties and gold. However, these are usually non-productive assets, which do not really increase the productive capacity of the country. As a result, with more resources allocated in these areas, firms will have less funds to invest in new plants and machineries.
- Capital formation is adversely affected and growth in productive capacity may slow down in the long run. This will negatively impact on the potential growth of the UK economy. Externally, inflation can adversely impact on the UK's balance of payments in the current account. If relative inflation rate in the UK is higher than its trading partners, then UK exporters (e.g. food manufacturers) will have difficulty selling their goods and services as the prices will now be relatively higher. Conversely, UK residents may turn to importing more as they are relatively cheaper than domestic goods. If export demand is price elastic, then export value will fall, while import expenditure will rise. This can worsen the balance of payments, assuming all other things are constant.

- However, not all the consequences of inflation are necessarily undesirable. There are certain sectors that may actually benefit from inflation. As seen in Extract 2, oil and energy
- firms are actually earning more with inflation. This is because demand for such products is generally inelastic as they are basic inputs in the production of many goods and services. As such, with higher prices, their total revenue tend to rise as well. In addition, inflation can bring good news to pensioners and other people receiving state benefits (Extract 2, para 5) because such handouts are indexed to

the inflation rates, although it remains debatable whether such nominal increases will actually raise their overall purchasing power.

- In conclusion, the net impact of inflation on the UK economy depends very much on what are the underlying causes and whether it is anticipated or not. But given that the inflation is unanticipated (Extract 2 para 1), the soaring inflation that the UK is currently facing will therefore spell more trouble for the economy if it is not contained soon enough.

Knowledge, Understanding, Application and Analysis		
L2	Two sided (positive and negative) possible consequences of inflation on the UK economy	4-6
L1	One sided (positive or negative) possible consequences of inflation on the UK economy	1-3
E	Evaluative comment on possible consequences of inflation on the UK economy	1-2

(d) (i) Explain one possible link between changes in short term interest rates and nominal GDP growth rates in the emerging economies as shown in Figure 4. [3]

- There is inverse relationship between the changes in short term interest rates and nominal GDP growth rates.
- Explanation (any one):
    - o interest rate → ↓ cost of borrowing → If MEI > interest rates, it would be profitable to borrow and invest more → ↑I → ↑AD → stimulates production and output → GDP growth rises (since GDP measures the total value of output produced within the country)
    - o interest rate → lower rates of returns from savings → opportunity cost of consumption falls → households have less incentive to save and more incentive to spend out of current income → ↑C → ↑AD → stimulates production and output → GDP growth rises
    - o SR interest rates (relative to other countries') → lower rates of returns from saving in domestic currency → more outflow of short term capital → ↓ demand for domestic currency falls while supply of domestic currency rises → currency depreciates → export prices fall in foreign prices while import prices rise → assuming Marshall-Lerner condition is satisfied → ↑(X-M) → ↑AD → stimulates production and output → GDP growth rises

(d) (ii) Assess whether central banks in these economies should adjust their interest rates in the face of rising inflation and an expected slowdown in the US economy. [10]

- Candidates should discuss the merits of using monetary policy to deal with the various economic problems plaguing the country.
- First, they should consider the merits of changing interest rates. This can be done through various ways. For example, they could argue that by keeping interest rates constant, problems may worsen and then go on to explain how changing interest rates can at least help to deal with one of the economic problems. (eg. by raising interest rates, this can help curb inflation to a certain extent, or by reducing interest rates, this can help to deal with the unexpected slowdown in the economy). Alternatively, they could highlight some of the limitations of other policies (eg. fiscal policies

involve more time lags etc.) and then go on to explain how interest rates can be effective. Sound economic analysis should be evident when explaining how the policy works.

- Secondly, candidates should consider the demerits of changing interest rates within the context of rising inflation and potential slowdown in economy. Focus should thus be on the potential conflicts in goals caused by changing the interest rates. For example, lowering interest rates can worsen inflation.
- Lastly, they should make a concluding assessment on whether central banks should adjust their interest rates. Judgement should be based on sound economic principles and the information provided in the case study (eg. using Figure 3 to decide which of the emerging economies will be more seriously harmed by adjusting the interest rates.)

Knowledge, Understanding, Application and Analysis		
L2	Answers provide clear accurate explanation	5-7
L1	Answers are descriptive or contain errors in explanation	1-4
E	Concluding assessment on whether central banks should adjust their interest rates.	1-3

SECTION 3 – Essays

SECTION 3A – Lower-Order Skills

Suggested answers for Question 1

1. **Explain why a country may experience a persistent rise in its general price level. [10]**

Suggested Answer

Introduction:

- Define inflation: Inflation refers to an economic situation where there is a sustained rise in the general price level. Inflation causes the value of money to fall. It reduces the purchasing power of money.
- Define persistent inflation: A persistent inflation is said to have lasted for more than three quarters.

Body:

a) Causes of inflation

- The level of prices in an economy is determined by the interaction of aggregate demand and aggregate supply. For prices to rise, either aggregate demand or aggregate supply must change. Hence inflation can be caused by either demand or supply issues.

b) Demand-Pull Inflation

- Results when persistent increase in aggregate demand cannot be matched by aggregate supply. Firms thus respond by increasing prices.
- A persistent increase in aggregate demand can result from factors like income rise, population growth, excessive investment, government expenditure and so on.
- When full employment is reached, aggregate supply cannot be increased as the economy is at its maximum productive capacity.
- If aggregate demand increases, (due to increases in consumption and investment, increase in foreign demand, government expenditure financed by borrowing) and if aggregate supply remains the same, prices will rise.
- This will continue due to increase in production costs as firms try to meet the increased demand by bidding up the prices of scarce labour and materials in order to attract them from their existing jobs.
- The higher cost will be passed on to the consumers in the form of higher prices. Workers demand higher wages and this results in further increase in aggregate demand. The process continues as prices in factor and product markets are pulled upwards. (Diagram)

c) Cost-Push Inflation

- This is caused by an increase in costs of production within the economy.
- As a result of an increase in cost which will be passed on in the form of increase in prices of goods and services, trade unions ask for higher wages in the absence of higher demand or increase in productivity. This will in turn further increase the cost for the firms which will push the increased wage costs on to the consumers by raising prices of their goods setting in motion a wage price spiral.
- When there is an increase in the cost of production, AS fall and is shifted to the left resulting in an increase in the general price level. This type of inflation is called cost push inflation. (Diagram)

- Imported inflation:
  - Caused by higher import prices. Singapore imports all her raw materials, food and many products. When prices of food and oil rise in other countries, importers will face higher cost and will pass on the cost to the consumers in Singapore.

- Structural Inflation:
  - At times there may be changes in demand or supply in an economy or sectors of the economy may be facing different changes. Due to structural changes, supply may not be responsive enough to changes.
  - Assume that resources are either geographically or occupationally immobile and wages and prices tend to be sticky downwards following a fall in demand while they tend to rise following a rise in demand.
  - As a result of such immobility, the costs of production rise. In declining industries wages remain high or do not change as people remain in the industry. In rising industries, due to lack of labour resources as workers do not shift to such industries, wages rise as firms compete for the limited pool of labour. Overall costs of production increase and inflation occurs. This is the structural view of inflation.

Conclusion:

- In the real world, it may not be easy to identify the primary cause of inflation. Demand pull and cost push inflation can occur simultaneously. For example, when excessive aggregate demand in a specific industry brings about increases in prices, structural inflation can occur as supply cannot adjust to the new situation. The resulting demand for higher wages by workers can cause cost push inflation.

Knowledge, Understanding, Application and Analysis		
L3	Detailed explanation of the interaction of various causes of inflation with diagrams	8-10
L2	Explain the main causes of inflation with some elaboration with or without diagrams	5-7
L1	Explain at least one cause of inflation which may be brief and not elaborated with no diagrams.	1-4

Section 3B: Higher-Order Skills

1. In August 2000, the Chinese government was concerned that increases in AD were putting too much pressure on the economy.

(a) Explain why a government is concerned about the excessive pressure created by rising AD. [10]
(b) Discuss whether fiscal policy alone might be effective in reducing this pressure. [15]

Suggested Answer

Part (a):

The "excessive pressure created by rising AD" refers to the sustained increase in general price levels caused by persistent rises in aggregate demand (AD) that are not matched by the output of goods and services. This is otherwise known as demand-pull inflation. Internally, inflation can affect consumers, producers and government. Externally, inflation can cause Balance of Payments deficit hence, depreciation of currency.

A persistent increase in AD can be caused by a continuous rise in any of its components, namely consumption expenditure (C), investment expenditure (I), government expenditure (G) and net exports (X-M), or a combination of these. At the same time, goods and services may be limited in supply either because the economy is operating at or near full capacity or its supply is slow in responding to changes in market conditions.

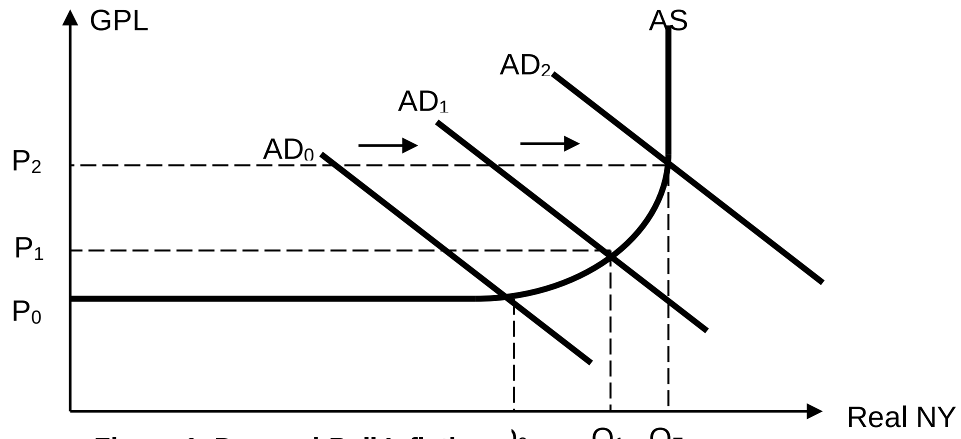


Figure 1: Demand-Pull Inflation

As can be seen from Figure 1, demand-pull inflation is triggered by rising AD only when the economy is at or near full employment of resources (ie. intermediate or classical range). At any point before Qo, any rise in AD will not lead to an increase in general price levels as aggregate supply is able to meet increases in AD. But when AD rises from AD_o to AD_1, there is a mild increase in general price levels from P_o to P_1 as shortages of certain resources arise as firms increase demand for these resources to meet the rising aggregate demand.
As the economy moves towards full employment, resources become scarcer, pushing costs of production higher and firms respond to the increase in costs by further raising prices. Once full employment level is reached, productive capacity is fully utilised and a further increase in AD beyond AD_2 will result in an escalation of prices without an increase in output as all resources have been exhausted. This creates "excessive pressure" on prices, driving it up.

Internally, a high rate of inflation could stifle investments. Due to rapid fluctuations in general price levels, firms are no longer certain of future costs and prices, making it difficult for them to predict the profitability of additional investments. They become less willing to undertake such risky ventures and hence, new investments may be less forthcoming. This would slow down economic growth both in the long and short-run.

High rates of inflation could also bring about lower production and productivity as input costs are likely to rise faster than product prices. Firms may find themselves operating at a loss and choose to close down or cut down on production. With a fall in the production of goods and services, the demand for resources (including labour) will also fall, causing employment to fall since labour is a derived demand. Unemployment therefore rises. It may affect a few industries at first, but as business pessimism grows, unemployment will spread to other industries in the economy.

Additionally, inflation discourages savings because the real value of savings is eroded. People tend to spend rather than to hold cash to avoid suffering further loss. Hence, consumption rises and savings fall. To hedge against the falling value of money, firms and households may divert resources to other assets whose values are rising, such as properties and gold. However, these are usually non-productive assets, which do not really increase the productive capacity of the country. As a result, with more resources allocated in these areas, firms will have less funds to invest in new plants and machineries.

The erosion of real savings will also affect economic activity as it means less funds is channelled to the banks. As such banks will not be able to loan out these funds to potential investors. This creates a credit squeeze. In fact, the fall in savings will force banks to raise interest rates and this causes a further fall in investments, leading to slower growth.

Externally, inflation can adversely impact on the country's balance of payments. If the relative inflation rate in a country is higher than that of its major trading partners, then the country's exports will become relatively more expensive to foreign consumers and their imports will be relatively cheaper domestically. If demand for exports and imports is price elastic, export revenue will fall while import expenditure will rise, thereby leading to a deterioration of the trade balance. Higher inflation rates in the country relative to other countries would also make the economy seem less stable and hence less attractive to foreign investors leading to long-term capital outflow due to a fall in foreign direct investment. The worsening of the balance of trade due to the net outflow of funds from the economy leads to deterioration in the balance of payments and a fall in the external value of the currency due to an increase in supply of the domestic currency in the exchange rate market. This may cause the country's general price levels to increase further as the cost of imported resources increases, leading to a fall in aggregate supply, thereby leading to slower growth.

In a nutshell, a government would be concerned about high levels of inflation as it can undermine the other macroeconomic objectives of sustained economic growth, low unemployment rates and favourable balance of payments. Once started, inflation can quickly escalate if not checked and this could spell trouble for the economy. As such, government intervention is needed to mitigate the adverse effects of inflation.

Knowledge, Understanding, Application and Analysis		
L3	Good knowledge of demand-pull inflation caused by rising AD. Accurately developed answer to explain effect of inflation and why government is concerned. Good use of diagram and examples	8-10
L2	Accurately pointing out that rising AD cause demand pull inflation. Merely stating the effects of demand-pull inflation without explaining why government is concerned. Accurate but undeveloped explanation.	5-7
L1	Answer shows some knowledge of aggregate demand. But fail to recognize that rising AD causes demand pull inflation. Hence, unable to explain why government is concerned.	1-4

Part (b):

Demand-side policies are used to deal with demand-pull inflation as these policies focus on lowering AD so as to reduce the general price levels. Fiscal policy provides a means to achieve this by altering government spending and/or tax revenue. However due to inherent policy limitations, fiscal policy by itself may not be effective in reducing inflation.

Contractionary fiscal policy can be used to address demand-pull inflation through the lowering of Chinese government spending and/or the raising of taxes. The Chinese government can reduce expenditure on goods and services such as in the areas of defence, education, healthcare and even infrastructure development would lower the 'G' component of AD, causing AD to fall. At the same time, cuts in transfer payments from the government to consumers such as unemployment benefits would reduce their purchasing power and hence cause a fall in consumption expenditure, thus lowering AD.

Raising direct taxes such as personal income tax and corporate tax can also solve inflation. Raising personal income tax will cause consumer disposal income to fall, hence reducing their purchasing power. Consumption expenditure hence decreases. Corporate taxes levied on profits of firms would lower their after-tax profits, causing a reduction in investment expenditure. The fall in consumption and investment expenditure have the effect of lowering AD.

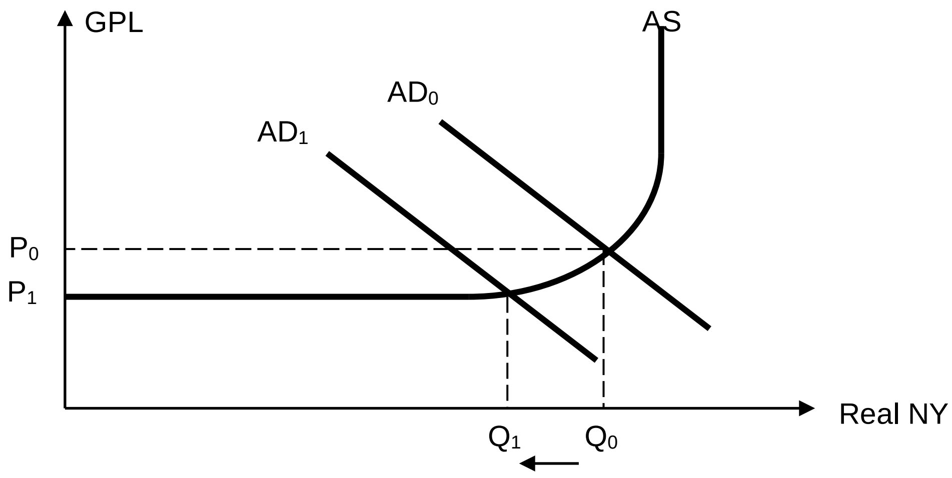


Figure 2: Falling AD to solve Demand-Pull Inflation

Diagrammatically, a fall in AD would shift the AD curve from ADo to AD_1 as seen in Figure 2. This causes general price levels to fall from Po to P_1, thereby reducing the pressure on prices, although real national income also falls from Qo to Q_1.

Contractionary fiscal policy can therefore be used to ease the pressure of rising prices. However, its effectiveness is limited by several factors, one of which is time lag. Time is needed for the policy to take effect. There is the decision lag where the problem must first be identified, studied and appropriate action decided upon. Once a decision has been made to reduce government expenditure and/or raise taxes, there may be an execution lag as it takes time for the measures to be implemented. And even then, time is needed for the measures to exert their effects on the economy. By that time, conditions may have worsened such that the remedies are no longer adequate, or worse still, the demand-pull inflation has been solved and the policy may end up creating deflation instead.

Another limitation is the rigidity of government spending. It is difficult for the Chinese government to postpone government expenditure on certain projects as they are tied to population growth and the expectations of people such as the construction of schools, hospitals and infrastructures. Additionally, long-term projects cannot be abruptly halted. In the case of China, the growing urban population growth has strained the transport infrastructure and the extent to which the government spending can be scaled down is limited.

In light of these shortcomings, another demand-side policy that the government can adopt to address demand-pull inflation is contractionary monetary policy, which aims to reduce money supply to affect interest rates.

Money supply can be reduced, for example, by raising the bank rate, raising cash ratio or selling government bonds. The fall in money supply will have the effect of raising interest rates. With higher interest rates, cost of borrowing rises and this reduces profitability, resulting in a fall in investments. In addition, higher interest rates discourage consumption as consumers may now choose to save more to earn the higher interest. The fall in C and I would lower AD from ADo to AD_1, thereby causing general price levels to fall from Po to P_1. This reduces the pressure of rising prices.

However, the effectiveness of contractionary monetary policy in reducing inflation depends on the interest elasticity of investments and consumption.

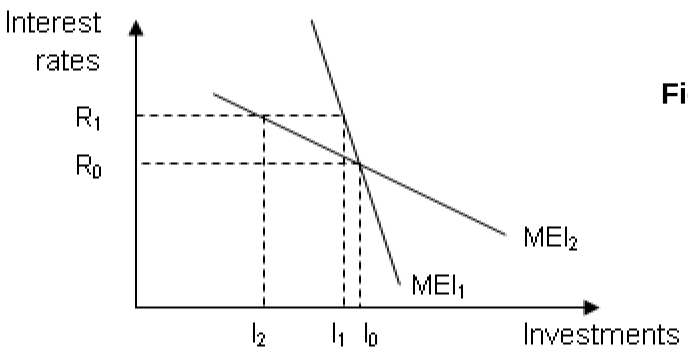


Figure 4: Interest Elasticity of Investments

If investments are interest elastic, as represented by MEI_2 in Figure 4, then a rise in interest rates from Ro to R_1 will bring about a more than proportionate fall in investments from Io to I_2. But if investments are interest inelastic (MEI_1), then the same rise in interest rates would only result in a less than proportionate fall in investments from Io to I_1, rendering the policy less effective. Given China's rapid economic growth, investors' expectations of future profits are high, causing MEI to be interest-inelastic. As such, any reduction in interest rate has to be significant in order to effectively curb investment expenditure. Moreover, while contractionary demand management policies can effectively curb demand pull inflation, it would inevitably cause a fall in national income and increase in unemployment, which are equally detrimental to the Chinese economy in view of her large population.

Finally, long run supply side policies should be implemented to complement the contractionary demand management policy. Chinese government can provide training to raise labour productivity, provide subsidies to encourage innovation and raise efficiency. All these measures would allow China to increase its productive capacity, in order to accommodate the rising AD, to prevent general prices from rising. However, such measures takes time and might cause a short term increase in government expenditure which would probably worsen the demand-pull inflation in China.

In conclusion, fiscal policy can be used to curb demand-pull inflation. But given its limitations, fiscal policy alone may not be effective in addressing this problem and may need to be used together with other policy tools such as monetary policy and supply-side policy to deal with the issue on hand. The combination of short term demand management policies and long term supply policies would allow the country to relieve the inflationary pressure in the short term while achieving sustained economic growth in the long term.

Knowledge, Understanding, Application and Analysis		
L3	Good and sound economic analysis to explain how fiscal policy might reduce inflation. Recognise that there FP alone is not effective thus bringing in other policies. Good explanation of various policies how inflation rate can be reduced. Well developed answers.	8-10
L2	Ability to explain how fiscal policy can reduce inflation. Recognise that FP alone is not the best solution. Manage to demonstrate how other policies such as ERP, monetary policy can be used although explanation is undeveloped. Not much evidence of ability to recognition limitation, assumptions and implications of the policies. **OR** only show a one-sided answer explaining why fiscal policy is effective to reduce AD.	5-7
L1	Display basic knowledge of fiscal policy on how it works to reduce inflation.	1-4

E3	For evaluation explained with economic analysis, ie. one that considers the strength and weakness of various policies as anti-inflationary tools.	4-5
E2	Largely unexplained judgements.	2-3
E1	For evaluation not explained or unsupported by analysis.	1

2. Singapore's inflation hits 25-year high of 6.6%.

www.channelnewsasia.com, 25 February 2008

(a) Explain the possible causes of inflation in Singapore. [10]

(b) Discuss whether a low rate of inflation should be the economic priority of the Singapore government. [15]

Suggested Answer

Part (a):

Inflation refers to an economic situation where there is a sustained rise in the general price level. The possible causes of inflation in Singapore are largely influenced by the characteristics and nature of the economy. Singapore has a small, open economy with limited resources, and relies heavily on trade as a source of sustained economic growth. Singapore mainly imports raw materials and primary products while exporting high-end manufactured goods such as microchips, wafers, oil rigs and increasingly services as well. External demand contributes a significant proportion of Singapore's aggregate demand and total trade is approximately 4 times of Singapore's GDP.

The possible causes of inflation in Singapore can be attributed to demand and supply factors in the economy and is usually classified as demand-pull and cost-push inflation.

Demand-pull inflation occurs when there are persistent rises in aggregate demand (AD) that are not matched by the output of goods and services, causing a shortage and hence driving prices up.

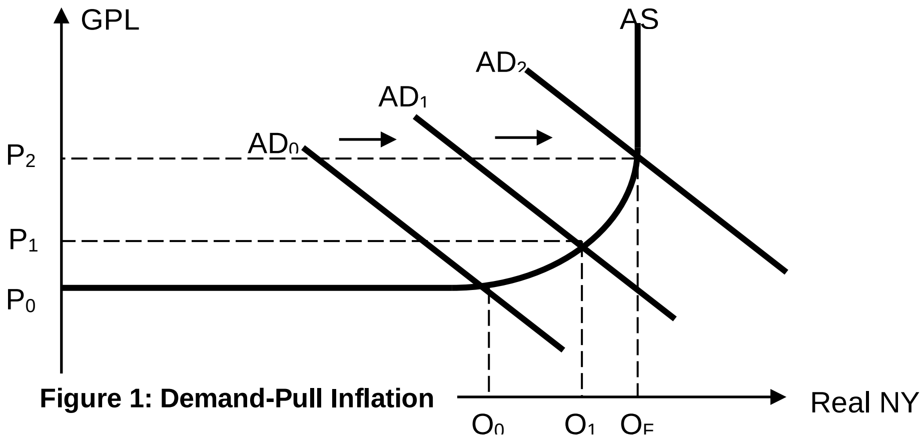


Figure 1: Demand-Pull Inflation

Assuming that the economy is operating near full employment (ie. intermediate range), Figure 1 shows that a rise in AD as a result of an increase in its components would shift the AD curve from AD_0 to AD_1. There is mild increase in general price levels from P_0 to P_1 as shortages of certain resources arise. As the economy moves towards full employment, resources become scarcer and firms respond to the increase in demand by further raising prices. Once full employment level is reached, productive capacity is fully utilised and a further increase in AD beyond AD_2 will result in an escalation of prices without an increase in output as all resources have been exhausted. If the price increase is sustained, inflation occurs.

A persistent increase in AD can be caused by a rise in any of its components, namely consumption expenditure (C), investment expenditure (I), government expenditure (G) and net exports (X-M), or a combination of these. Given the small and open nature of Singapore's economy, demand-pull inflation is likely to be triggered by rising exports which forms approximately 200% of its GDP. This could be due, for example, to robust growth in the economies of Singapore's trading partners resulting in higher purchasing power and hence greater demand for Singapore's exports.

At the same time, goods and services may be limited in supply either because the economy is operating at or near full capacity or its supply is slow in responding to changes in market conditions.

Cost-push inflation occurs when there are persistent rises in costs of production (eg. increase in wages, rents and interest), independent of aggregate demand. Firms typically respond to the rising cost by passing on part of the increase to consumers in the form of higher prices and also by cutting back on production. This translates to a fall in aggregate supply (AS) causing the AS curve to shift from AS_o to $AS_1$to AS_2 as illustrated in Figure 2. This results in a rise in general price levels from P_o to P_1 to P_2. If this increase is sustained, inflation occurs.

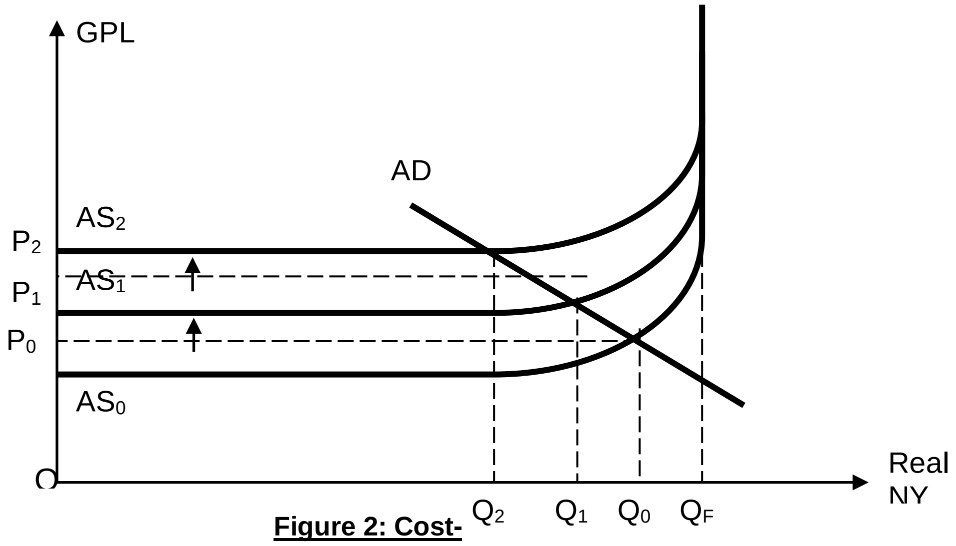


Figure 2: Cost-Push Inflation

Small and open economies like Singapore would be susceptible to cost-push inflation caused by rising import prices, which may arise, for example, due to inflation in their country of origin. If these imported goods are intermediate goods, this will increase the cost of production and hence the price of the goods produced. Imported final goods will also be more expensive, which contributes to the overall increase in general price levels. Given our reliance on imported raw materials for production and imported final goods, Singapore is particularly vulnerable to import-price push inflation, which is a type of cost-push inflation.

In conclusion, inflation can be caused by both demand-side and supply-side factors. In reality, these tend to overlap, interact and reinforce each other so that if inflation is left unchecked, it could escalate, bringing about detrimental effects on the economy.

Knowledge, Understanding, Application and Analysis		
L3	Well-developed explanation showing good knowledge on the **BOTH** the AD and AS factors (Demand pull and cost push inflation) that can lead to inflation. Good examples are given with detailed explanations and sound reasoning.	8-10
L2	The candidate shows good knowledge on the AD/ AS factors resulting in inflation. Insufficient examples to illustrate the points. Max 6 marks are given to well developed source of inflation (e.g. Demand pull OR cost push inflation)	5-7
L1	For an answer that shows some knowledge and the candidate is able to identify some relevant factors resulting in inflation. However, the explanation given is brief.	1-4

Part (b):

The four macroeconomic objectives of a government are price stability (or low inflation rates), sustained rate of economic growth, low unemployment rates and favourable balance of payments.

Low inflation rate refers to a low rate of increase in general price levels, usually between 1 to 3% annually.It is important it helps to promote investment and export competitiveness, thus leading to a more sustained economic growth. But whether it should be the “economic priority” of the Singapore government would depend on the relative importance of the other competing macroeconomic objectives which, to a large extent, is determined by the current economic conditions in Singapore.

We will start by considering in greater detail why low inflation rates are desirable and hence should be maintained.

Fundamentally, the Singapore government would aim for low rates of inflation to avoid the damaging effects of high inflation rates on the economy. For one, a high rate of inflation could stifle investments. Due to rapid fluctuations in general price levels, firms are no longer certain of future costs and prices, making it difficult for them to predict the profitability of additional investments. They become less willing to undertake such risky ventures and hence, new investments may be less forthcoming. This would slow down economic growth both in the long and short-run.

High rates of inflation could also bring about lower production and productivity as input costs are likely to rise faster than product prices. Firms may find themselves operating at a loss and choose to close down or cut down on production. With a fall in the production of goods and services, the demand for resources (including labour) will also fall, causing employment to fall since labour is a derived demand. Unemployment therefore rises. It may affect a few industries at first, but as business pessimism grows, unemployment will spread to other industries in the economy.

Externally, inflation can adversely impact on Singapore’s balance of payments, especially so given our high dependence on exports and imports. If the relative inflation rate in Singapore is higher than that of our major trading partners, then Singapore’s exports will become relatively more expensive to foreign consumers and our imports will be relatively cheaper locally. If demand for exports and imports is price elastic, export revenue will fall while import expenditure will rise, thereby worsening our balance of payments.

However, while high inflation rates can be damaging to our economy, mild inflation can be beneficial. For example, rising costs resulting from mild inflation can force firms to become more efficient in order to survive under challenging market conditions. Also, greater production and investment may be encouraged with mild inflation due to higher expected returns.

But while there are clear advantages of maintaining price stability, the Singapore government may also be concerned with other macroeconomic goals. These include:

- economic growth, which refers to an increase in real national income in the short-run due to increased utilization of resources, and in the long-run due to increased productive capacity. It is desirable as it leads to a more sustained increase in living standards and employment.

- low unemployment rate, which refers to a low rate of workers who are willing and able to work but who cannot find a job. It is necessary to promote low unemployment so as to minimize wastage of resources and reduce social and political instability.

- favourable balance of payments, which refers to a situation when the international receipts are equal to the international payments between the residents and government of the reporting country and the rest of the world. It is important so that a country does not need to incur external debt to finance any deficit or be forced to devalue its currency which would lower the country's living standard.

If the Singapore government chooses to focus primarily on maintaining price stability in the economy, this could be in conflict with some of these other macroeconomic objectives such as economic growth and low unemployment rates, thereby imposing an opportunity cost for making it an "economic priority".

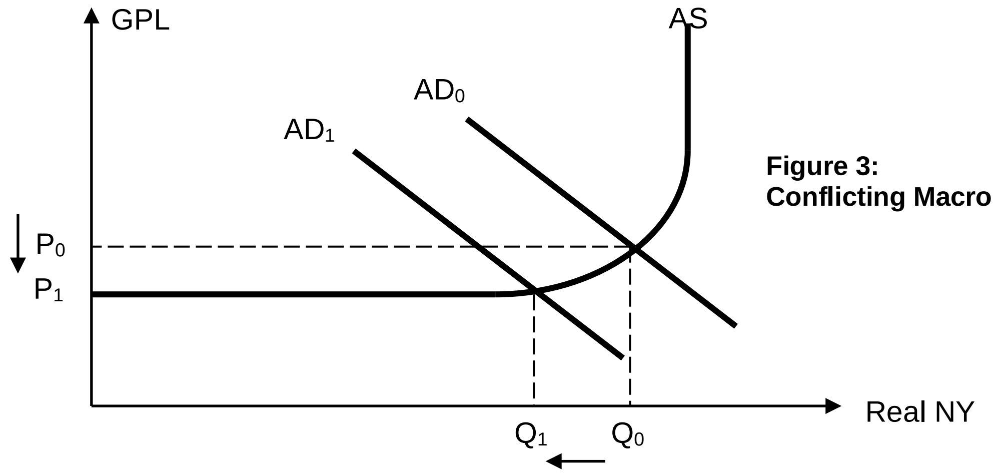


Figure 3:
Conflicting Macro Goals

To illustrate, suppose the Singapore government aims to reduce inflation by employing the exchange rate policy of a gradual appreciation of the Singapore dollar. This makes exports relatively more expensive in terms of the foreign currency and imports relatively cheaper in terms of the domestic currency. Assuming the Marshall Lerner's condition holds, whereby the demand for exports and imports are price elastic, the appreciation of the Singapore dollar will result in a fall in export revenue and a rise in import expenditure. This causes AD to fall from ADo to AD_1 as shown in Figure 3. The effect is a fall in general price levels from Po to P_1, thereby reducing inflation. But at the same time, real national income falls from Qo to Q_1, reflecting slower economic growth.

As a result of slower economic growth, the fall in production output in turn would translate to rising unemployment rate as less labour is needed for the production process. Wages would also fall due to the decrease in demand for labour.

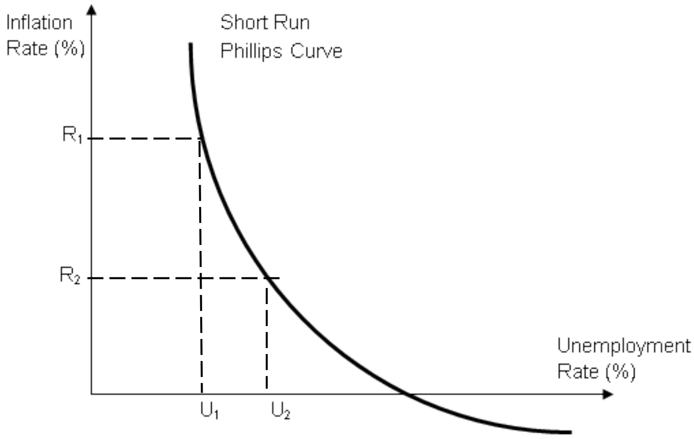


Figure 4:
Phillips Curve

This inverse relationship between inflation and unemployment can be illustrated using the Phillips Curve. From Figure 4, a fall in inflation rate from R_1 to R_2 is accompanied by a rise in unemployment rates from U_1 to U_2.

Given the trade-offs in achieving all the macroeconomic objectives simultaneously, the Singapore government has to consider the current economic conditions and the magnitude of the problems when deciding on whether maintaining low inflation rates should be the economic priority.

For instance, if the Singapore economy is overheating, with productive capacity unable to keep pace with rising aggregate demand and leading to high levels of inflation, then maintaining price stability should be the economic priority of the government, at least in the short-run. When this happens, the Singapore government should necessarily be concerned with implementing policies to reduce the inflationary pressures in order to avoid the adverse effects of high inflation rates discussed earlier. In fact, it can be argued that domestic price stability is likely to be the pre-requisite before other macroeconomic aims can be achieved. But if the rate of economic growth has fallen significantly and unemployment is high, then the government should choose to focus on these issues first.

Given that growth is negative for the second quarter of 2012 and that the world economy is still rather weak due to the Euro zone debt crisis and a weak US recovery, the Singapore government may be more concerned with the objectives of economic growth and unemployment currently. However, this is not to say that they should completely ignore the other macroeconomic goals. We know, for instance, that high inflation can quickly dampen growth and business confidence. With the anticipation of further rise in global prices of oil and food in the coming months, it is important for the Singapore government to also continue to adopt appropriate measures to ensure that price increases are being moderated even though it may not be the main focus of their economic policies.

Knowledge, Understanding, Application and Analysis		
L3	For an answer that shows good knowledge of the importance of price stability. Candidates also produced a good discussion of the other macroeconomic aims.	8 - 10
L2	For an answer that shows some knowledge of the reasons for maintaining price stability. Candidates also made an attempt to discuss about other aims. Underdeveloped in some parts.	5 – 7
L1	For an answer that has some basic knowledge of the macroeconomic aims of a government. Candidates were able to briefly explain the importance of maintaining price stability.	1 – 4

E3	Judgment based on analysis. The evaluative comments are well-explained.	4 - 5
E2	Largely unexplained judgement.	2 - 3
E1	Unexplained judgment.	1

3. **"In tandem with the slowing economy, price pressures have eased. After averaging 6.5% in 2008, inflation fell to 2.1% in Q12009."**

- MAS Annual Report 2008/2009

(a) With reference to the statement above, explain the causes of falling inflation in Singapore. [10]

(b) Discuss the view that a strong Singapore dollar is the most appropriate policy to maintain price stability. [15] (CJC, 2009)

<u>Suggested Answer</u>

(a)

Introduction:

- Define inflation: the sustained increase in the general price level and it is inversely related to the purchasing power of money.
- Explain the meaning of "falling inflation" as a rate of inflation that is lower than the previous years' rates of inflation (slower rate of increase in prices).

Body:

- Explain the different causes of inflation, ie. demand-pull inflation and cost-push inflation (including imported inflation).
- Explain the causes of inflation in Singapore in recent years.
  - Cost-push inflation → high oil prices and high food prices (household necessities like bread, noodle and live chicken).
  - Demand-pull inflation→ robust economy in 2006 and 2007.
- Explain the causes of falling inflation in Singapore, given in the statement that "After averaging 6.5% in 2008, inflation fell to 2.1% in Q1 2009.... "
  - falling oil and food prices, resulting in easing of cost-push inflation.
  - global recession, resulting in falling demand and easing of demand-pull inflation.

(Explain with the help of appropriate AD/AS diagram to illustrate falling inflation).

Knowledge, Understanding, Application and Analysis		
L3	For a comprehensive and detailed analysis explaining clearly the causes of inflation and the causes of falling prices in Singapore, with reference to changes in both AD/AS.	8-10
L2	For an answer that shows some basic understanding of the causes of inflation (both AD and AS factors) and the hence, the causes of falling inflation, but with limited application to the Singapore economy.	5-7
L1	For an answer that shows some knowledge of the causes of falling inflation (e.g. only AD or AS factors) but not elaborated. Answer contains some concept errors.	1-4

(b)

Introduction:

- The aim of price stability is consistent with the government's macroeconomic objectives. The key objective of Singapore's monetary policy is to maintain price stability for sustained economic growth. Since 1981, monetary policy in Singapore has been centred on the exchange rate.
- Given the small and open nature of the Singapore economy, it is imperative that a strong S$ policy be maintained to keep out imported inflation to achieve price stability so as to sustain economic growth. However, exchange rate policy cannot act alone

but a policy mix of supply-side policies and fiscal policy need to be used to overcome the limitations and constraints faced by the exchange rate policy.

Body:

I. Explain how the exchange rate policy through targeting a trend appreciation of the nominal effective exchange rate could dampen inflation via the 2 channels of the Monetary Transmission Mechanism outlined by MAS:

Impact on inflation via changes in import prices

- The most direct channel that exchange rates affect inflation is through its impact on import prices.
- A stronger exchange rate will result in lowering the price that domestic consumers have to pay for imported goods and services and reducing the price of locally produced goods and services that make use of imported factors of production. Both these effects result in a fall in the overall level of prices of goods and services within an economy.

Impact on lower inflation via changes in AD

- A stronger exchange rate would result in domestic goods and services being less competitively priced in foreign markets. This would reduce the demand for Singapore exports from the rest of the world, assuming price elasticity of demand for our goods is greater than one. Domestic demand will be boosted by the substitution effect as lower prices for imports decrease the demand for locally-made goods. To the extent that the economy is at full capacity, this will translate into a lower demand-pull inflation on domestically produced goods.

Evaluation of the Exchange Rate Policy:

- Transmission lags → takes time for the changes in the exchange rate to work through the economy.
- Need for the economy to maintain a large pool of foreign reserves to support the exchange rate policy.
- The choice of managing the exchange rate must necessarily imply the relinquishing of control over interest rates (ie. changes in interest rates would cause changes in the exchange rate, so it is not possible to control both.)
- Finally, it primarily dampens cost-push inflation resulting from imported inflation. It may not be effective in curtailing cost- push inflation due to higher wages, rental, taxes and profits.
- Hence, the limitation of the exchange rate policy implies that a combination of other policies might be necessary to complement the exchange rate policy.

II. Explain how other policies may also be appropriate to maintain price stability.

Prudent Fiscal Policy

- To ensure that budget deficit will not offset the benefits of exchange rate policy. This is appropriate during periods of economic boom where the threat of demand pull inflation is increasing. Any increase in budget surplus or a balanced budget will lead to a lower inflation.

Evaluation of the Fiscal Policy:

- The sole aim to dampen inflation by maintaining a budget surplus or balanced budget may hinder infrastructural development and economic capacity.

- The timing of a budget surplus is crucial to avert other macroeconomic problems. Eg. a Budget surplus may reduce the provision of the public goods and merit goods.

<u>Supply-Side Policy</u>

- Cost-push inflation – the lowering of costs through increased productivity via education and training, greater efficiency, more competitive pricing and wage restraint.
- Demand pull inflation - Government can increase the productive capacity of the country through encouraging effort and investment, privatisation and research and development. The increase in AS lowers the general price level.

Evaluation of the Supply-Side Policy:

- Supply-side policies are long term in nature.
- Education and training is dependent on the attitudes of the workers to undergo further training.
- Spending on research and development may lead to government budget deficit.

Conclusion:

- The exchange rate policy, despite its limitations, has been effective policy in curbing imported inflation in Singapore. However, it is necessary for a continual monitoring of the major sources of inflation and its impact on the economy.
- Where appropriate, the exchange rate policy can be used together with policies like supply-side policies to improve the competitiveness and control the general price level of the economy.

Knowledge, Understanding, Application and Analysis		
L3	High L3 - Detailed explanation with good examples and graphs to illustrate the impact of the policies (ie. exchange rate, demand management and supply side policies) in explaining how these policies reduce demand pull and cost push inflation in Singapore context. Low L3- Adequate explanation with some attempt to support with examples and graphs of exchange rate, demand management and supply side policy in explaining how these policies reduce demand pull and cost push inflation in Singapore context.	9-10 8
L2	An answer that covers various policies but with undeveloped explanation and limited application to the Singapore context.	5-7
L1	Answer shows knowledge of the various macroeconomic policies without application to the Singapore economy.	1-4

E3	Evaluative assessment based on economic analysis of the various macroeconomic policies	4-5
E2	Largely unexplained judgements	2-3
E1	Unexplained assessment or one that is not supported by analysis	1

4. Discuss whether supply-side policies are best for achieving low inflation in the Singapore economy. [25]

Scope requirements: Market and interventionist supply-side policies; short and long run; alternative policies linked clearly to inflation.

Introduction:

- Introduce low inflation as 2-3% inflation for the Singapore economy.
- Define what is best:
  - o Context as small and open economy: Much inflation is imported- Tools needed to deal with imported inflation.
  - o Economy is operating near or at full employment: Demand pull inflation is a significant problem- Tools needed to expand productive capacity.
  - o Need to also consider time period and trade-offs.

Thesis:

1. Supply side policies are effective in helping Singapore achieve low inflation:

a. Interventionist supply-side policies to upgrade quality of human capital, eg, Continuing Education and Training programmes, enhance the quality of human capital which increases productivity and decreases unit COP, thus mitigating cost-push inflation. Such programmes also raise productive capacity, creating more capacity for growth which reduces both cost push and demand pull inflation.

b. Market-oriented supply side policies in the product markets, which reduce barriers to entry, including firm dominance, are effective as they promote competition and encourage productive and dynamic efficiency, which lowers unit cost of production thus mitigating cost push inflation:

   i. Policy detail 1: Promotion of entrepreneurship through Spring Singapore.

   ii. Policy detail 2: Attracting FDI: Further enhances competition within domestic market to drive efficiency gains. At the same time, FDI promotes fixed capital formation thus enabling capital deepening and widening, which boosts productivity and increases productive capacity whilst, at the same time, lowering unit COP.

c. Market oriented supply side policies such as the buffer labour policy and income tax cuts, can also be used to reduce unit COP and increase productive capacity.

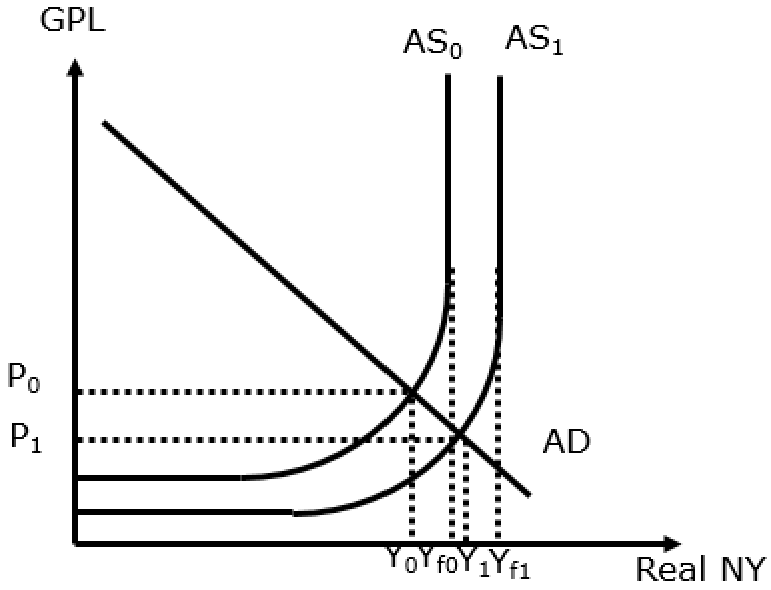
   i. Buffer labour policy allows foreign workers and talents into Singapore. This helps to increase the supply of both skilled and unskilled labour, thus mitigating rising wages in the face of rising demand for labour and managing, in the process, wage push inflation. Increase in quantity of skilled and unskilled labour helps increase productive capacity. [Accept market diagram for labour.]

   ii. Income tax cuts may also be effective as they encourage workers to seek work, thus lowering wage push inflation: Income tax cuts increases the disposable income of workers thus promoting their participation in labour force, which mitigates wage push inflation as it increases supply of labour and limits wage increases. Further, an increase in labour force participation rate helps increase quantity of labour thus boosting productive capacity.

The effect of CET market oriented supply side policies aimed at reducing BTEs, and labour force oriented supply side policies will help mitigate inflation in Singapore as follow:

- These policies reduce unit COP whilst also increasing the productive capacity of the Singapore economy. These cause AS to increase from AS0 to AS1.
- Also, if economy is experiencing cost push inflation, falling unit COP aising from these policies would help mitigate cost push inflation.

These explain how supply side policies can help Singapore achieve low inflation.



At the same time, supply side policies allow for other economic goals to be achieved concurrently. With an increase in AS from AS0 to AS1, NY increases from Y0 to Y1.

- Such economic growth is in line with what the Singapore governments hopes to achieve.
- As the economy grows, firms also hire more FOPs, including labour. This reduces demand deficient unemployment CP.
- This mitigation of rising GPL, CP, would allow us to maintain or even improve the price competitiveness of our exports thus boosting our BOP current account.

Such supply side policies thus allow the Singapore economy to achieve low inflation without significant trade-offs in terms of other macroeconomic objectives foregone.

Antithesis:

2. Supply-side policies may not help Singapore achieve low inflation in an appropriate manner:

a. Time is needed for such supply side policies to take effect- Workers need time to train and industries need time to become more competitive.

b. Further, supply side policies may not be effective as their benefits may not materialise.

i. The success of CET depends on workers' aptitude and attitude.

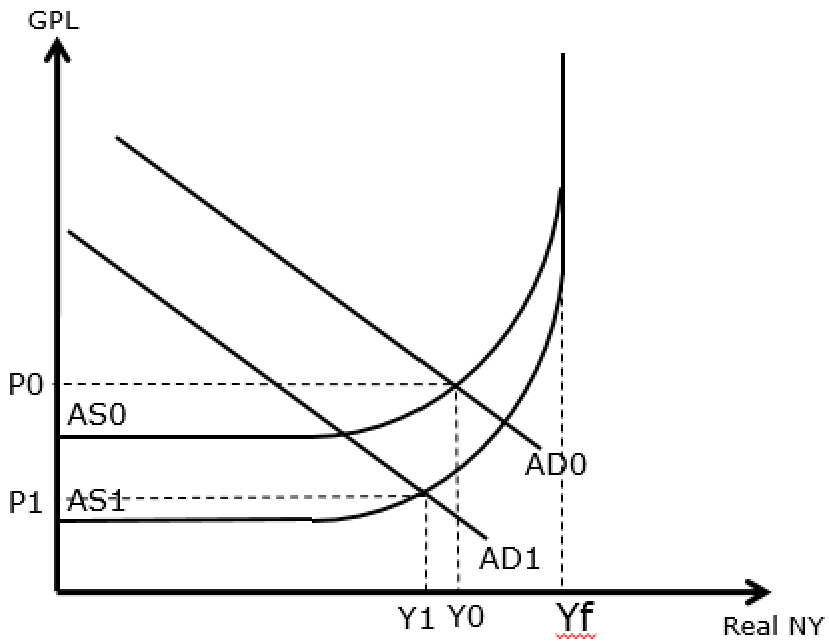
ii. Also, firms may collude or strengthen entry barriers through product differentiation and securing of key inputs and distribution channels.

iii. Additionally, tax cuts may not be effective encouraging labour force participation rates. Singapore already has amongst the lowest tax rates in the world- little scope to cut taxes further. Also, a reduction in income tax could worsen budget balance and limit the government's ability to spend on much needed merit and public goods.

3. Appreciating exchange rate will help achieve low inflation better.

a. Given Singapore's small and open nature, import cost push inflation is likely the key source of inflation in the Singapore economy.

b. An appreciating exchange rate will help limit cost push inflation. This is because with appreciation, prices of imported goods and services, both final and intermediate, will become less costly in SGD terms. This reduces unit COP and increases AS from AS0 to AS1 as shown below:



c. This helps reduce GPL from P0 to P1, thus helping alleviate import cost push inflation. At the same time, Singapore exports will become more expensive in foreign currency terms. Given the price elastic nature of Singapore's highly substitutable exports, export demand will fall, causing an autonomous fall in export revenue which, in turn, decreases AD from AD0 to AD1.This will also help mitigate demand pull inflation.

d. However, reduction in exports may slow down economic growth by multiple times the initial fall in autonomous exports to a factor of 1/mpw. In the figure above, economic growth has been reduced from Y0 to Y1. Further, BOP CA is likely to worsen due to falling export revenue arising from the SGD appreciation. Hence, the use of exchange rate policies to achieve low inflation is costly for Singapore in terms of other macroeconomic policy conflict.

- However, it should be noted that an exchange rate appreciation may not lead to a significant fall in AD because it would help reduce unit COP. As unit COP falls, domestic exports become more price competitive and hence increases.
- Further, Singapore is particularly susceptible to imported inflation due to its small and open nature. Exchange rate policy is thus a highly effective tool in helping Singapore achieve low inflation.

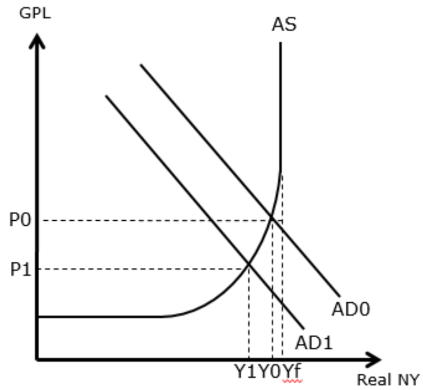
4. **Contractionary fiscal policy can help Singapore achieve low inflation:**

   a. Demand pull inflation is a major source of concern in Singapore as the economy is frequently operating near full capacity. This is especially so when the Singapore economy finds itself at the peak of the business cycle. In such instances, any increase in AD will cause significant inflation in the Singapore economy.

   b. When faced with such inflation, the Singapore government can mitigate demand pull inflation to achieve low inflation by reducing G and increasing T.

      i. Government can reduce G by postponing large government project. eg, infrastructure spending such as MRT line expansion and HDB upgrading to reduce G.
      ii. Raising personal income and corporate taxes will help decrease disposable income and thus reduce Cd and Id respectively.

   c. These cause a contraction of AD and thus mitigates demand-pull inflation.



   d. In the figure above contractionary fiscal policy will help reduce AD from AD0 to AD1, thus lowering GPL from P0 to P1, hence mitigating demand pull inflation.

      2. However, this is difficult to achieve given that much of Singapore's government spending is on public and merit goods which are considered necessities, such as healthcare and education.
      3. Further, the Singapore government is unlikely to raise taxes as it is keen on attracting both foreign talent and FDI.
      4. There are also negative side effects of using contractionary fiscal policy to mitigate demand pull inflation:
         - In the diagram above, the use of contractionary fiscal policy causes a fall in real NY from Y0 to Y1, thus causing negative economic growth. While this is mitigated when the economy is operating at full employment, it is difficult for the government to achieve fiscal marksmanship- the contraction in AD might be too excessive.
         - As NY falls, unemployment also rises.

   a. Additionally, it is important to note that fiscal policy in Singapore has much supply-side effects. A reduction in G might actually cause a fall in productive capacity as government spending on important merit goods, such as CET and social overhead infrastructure spending (infrastructure), may fall. This causes a fall in AS and worsens inflation, thus causing Singapore to become less able to achieve low inflation.

5. **Evaluation**

   a. Supply side policies indeed the best policy to achieve low inflation on two counts: First, it is highly effective in helping Singapore achieve low inflation. Second, it achieves low inflation without much trade off in terms of other macroeconomic objectives foregone.

b. However, it is not robust enough to deal with all inflationary situations faced by the Singapore economy: First, the time lags and the uncertainty surrounding its effectiveness means that other faster-acting policies with more certain outcomes, such as fiscal and monetary policy, should be considered.

c. Given that much of our inflation is imported, monetary policy is the next best policy to help Singapore achieve low inflation. Exchange rate appreciation is also particularly relevant in the context of a negative supply shocks causing stagflation in the Singapore economy.

d. Contractionary fiscal policy is probably the least best policy to help Singapore achieve low inflation as it conflicts with other important macroeconomic aims. It is only appropriate when the economy is clearly operating at the full employment level of output.

e. However, given the strengths and limitations of each policy, and also the diverse sources of inflation in the Singapore economy, a mix of policies should be used in order to help Singapore achieve low inflation.

Knowledge, Understanding, Application and Analysis	
L3 (15-20m)	For a well-developed answer that uses the AD-AS and other economic frameworks to explain and illustrate how supply-side policies and other economic policies may or may not be appropriate in achieving low inflation. The highest L3 marks (19-20) may only be achieved by answers that • discuss a range of market oriented and interventionist supply-side policies. • makes clear distinction between lowering GPL and moderating the rate of increase in GPL to achieve low inflation
L2 (9-14m)	For an under-developed answer that explains and illustrates how supply side policies and other economic policies may or may not be appropriate in achieving low inflation. Cap at • 10m - for a one-sided discussion. • 12m - where discussions are restricted to SR supply-side policies (cost-cutting measures) • 14m - for discussions that limit to 2 (correct) policies including ss-side policies
L1 (1-8m)	For an undeveloped answer that attempts to link economic policies to low inflation. Low L1 (Max 5): For an answer that merely shows knowledge of supply side policies and/or low inflation.
E3(4-5m)	Economic judgement with justification using clear economic framework. Candidates need to present their own opinion backed up by economic theories.
E2 (3-4m)	Largely unexplained judgements.
E1(1m)	Unsupported evaluative statements.

SECTION 3C – Challenging Essays

1. The annual inflation rate in Singapore rose from 2.8% in 2010 to 5.2% in 2011.

(a) Explain how monetary factors can cause inflation. [10]
(b) Discuss whether an increase in the rate of inflation is more likely to cause problems for the domestic or external sector of the Singapore economy. [15]

Examiner's Report

This was a very popular question with the vast majority of candidates attempting it. The question discriminated well with a very wide spread of marks. These were some excellent answers which were well directed to the question set. Weaker candidates tended to give rehearsed answers on inflation.
(a) This part of the question was, in the main, well answered with the majority of candidates being awarded over half the marks available. The best answers tended to use the Keynesian transmissions mechanism and used appropriate diagrams to explain the link between increases in the money supply and the rate of inflation. A minority also referred to the quantity theory of money. Mid-range answers tended to be descriptive or gave appropriate diagrams without explanation of the diagrams themselves.

A common error within the weaker scripts was to resent a "write all I know about inflation" answer with limited and, in some cases, no reference at all to monetary factors. These answers concentrated on cost-push and demand-pull expansions in broad terms.

(b) The second part of the question also saw some excellent responses although these were less frequent in number. These answers dealt with domestic and external effects and further showed the potential links between the two with some appropriate evaluative discussion. Mid-range answers tended to be balanced in coverage but were descriptive in nature and lacked evaluative discussion, whilst weaker answers considered only the external or the domestic side with cursory reference to the other.

A common error was to believe that the price of imports fell in actual terms rather than in relative terms. Many candidates also tried incorrectly to use the Marshall-Lerner condition to show the impact of inflation on the balance of payments.

Finally, all too often the evaluative contribution was limited to a single comment such as "the external sector will be affected the greater" without any explanation of the reasons for this conclusion.

2. "Since inflation is undesirable, deflation must be desirable." Discuss. [25]

<u>Suggested Answer</u>

Inflation is the sustained increase in the GPL while deflation is the opposite of inflation.

Inflation is not necessarily undesirable. Depends on the degree of inflation and causes of inflation.

<u>Inflation is undesirable</u>

- Arbitrary redistributive effects on income (unanticipated inflation)
- Inflation is costly (i.e. uses up resources which could have been used for other purposes)
- Distorts the price mechanism
- Cost-push inflation causes falling output and rising unemployment. It also discourages investment. This adversely affects the country's potential growth rate.
- Pm, Px affected and hence adverse BOT and BOP
- When inflation is very severe – hyperinflation – money becomes a very poor store of value. Saving will be discouraged. The resultant reduction in investment reduces the country's potential growth rate.
- In very severe inflation, money ceases to be accepted as a medium of exchange.

<u>Inflation could be desirable</u>

- Mild inflation (demand-pull) is actually good → producers are encouraged tp produce more. Through Keynesian multiplier there is an expansionary effect. Output, NY and employment increase. SOL rises. Increase in investment also leads to economic growth.

<u>Deflation is desirable</u>

- Depends on causes. If productive capacity increases and hence LRAS shifts rightwards, then GPL would fall. The increase in AS brings about increase in productive capacity and economic growth. Therefore fall in prises due to this is not considered as bad.

<u>Deflation is undesirable</u>

- Leads to redistribution of income.
- Deflation is considered undesirable if fall in prices is due to fall in AD rather than rise in AS. Undesirable when it co-exists with low output, employment and income.

Knowledge, Understanding, Application and Analysis		
L3	Considers and explains both the negative and positive effects of inflation as well as deflation. Considers the extent or degree too and provides relevant examples.	15-20
L2	One sided essay on just inflation or deflation or discusses both but superficially.	9-14
L1	Merely identifies the negative effects of inflation or positive effects of deflation.	1-8

E3	Evaluation explained with sound economic analysis.	4-5
E2	Largely unexplained judgements	2-3
E1	Evaluation not explained or unsupported by analysis	1

3. **“The policies which a government usually adopts to reduce the rate of inflation in an economy may do more harm than good.”**

Explain and evaluate the policies which a government may adopt to reduce the rate of inflation in an economy.” [25]

Suggested Answer

Explain inflation:

- Inflation refers to an economic situation where there is a sustained rise in the general price level. This results in falling purchasing power of money.
- This increase in general price level accelerates with people’s expectations and this hurts the people and the economy in that cost of living rises to erode living standards, unemployment soars, economic growth hindered and balance of payments deteriorates.

State the possible causes of inflation:

- Cost-push theories: rises in the costs of production of goods and services, particularly wages, and passed on to consumers and situation can be worsened by firms profiteering.
- Demand-pull theories: rising pressure of consumption and injection is too great for output to keep pace as the economy approaches full employment.
- Money supply theories: rising pressure due to the government allowing money supply to rise too rapidly.

Policy measures adopted depends on the underlying cause of inflation.

Explain and evaluate the policies in the light of its impact on the economy:

(1) Fiscal policy – Demand management policy
  - To counter demand-pull inflation.
  - This involves cutting government expenditure and raising taxation with the main aim of reducing consumption. Thus aggregate demand pressure is being reduced. General price level will fall. (Diagram)
  - In theory, the government can estimate the effects by calculating the size of the multiplier.
  - A reduction in government expenditure:
    - Is fast and effective
    - However, government expenditure may be large and inflexible as government is committed in various important expenditures like basic services, development programs and defence.
    - Compromising provision of social services and infrastructural development has the effect of dampening economic growth and development.
  - Raising taxes
    - Raising income tax will reduce disposable income which in turn contract consumption thereby relieving the upward pressure on prices.
    - Raising corporate taxes will reduce corporate profits and hence reduce the ability of firms to invest.
    - However, increasing direct taxes creates the disincentive effect to work, save and invest which in turn raise unemployment and hinder economic growth.
    - Raising indirect taxes is highly regressive and it directly raises prices fuelling wage-push inflation further.
  - Time lags (decision, action and impact lags) occur as it requires parliamentary consent and it takes a fiscal year for results to have full effect, which by the time

the economic situation may have changed, making the policy unsuitable and destabilising to the economy.

- Fiscal policy has a blanket effect on the economy thereby retarding expanding industries and hence economic growth.
- It is also difficult to accurately estimate the size of the multiplier so fiscal policy may lead to an over-kill of the economy.
- It may be effective for demand-pull inflation but is difficult to implement as it conflicts with other objectives.
  - If unemployment results, government will have to spend more on benefits that will counter the policy of cutting government spending.
  - If growth is impeded and the economy shrinks, living standards are compromised and the government will have to boost growth.
- Since unemployment and slower growth are by no means a lesser evil than inflation, curing inflation may do more harm than good.

(2) Monetary Policy – Demand management policy

- Since inflation is believed to be caused by excessive growth of money supply in relation to growth of output, money supply must be reduced until it grows in line with the expansion of output.
- This policy involves the reduction of money supply or increase in interest rates.
- Reduction of money supply:
  - Creates a shortage of money and so households and firms cut back on their spending in an attempt to increase their holding of money → aggregate demand falls.
- Increasing interest rates to deter borrowing and thus reducing demand-pull pressure that comes about when too much money chases after too few goods.
- Monetary policy may be undermined as:
  - Borrowers are able to find sources of funds outside of central banks' direct control, especially if businesses as optimistic.
  - Raising interest rates attract inflow of hot money which drives up exchange rate. This could be damaging to exports industries.
- Higher interest rates restrict consumption, investment and growth thus creating unemployment and stagnation.
  - With unemployment, fiscal spending in the form of unemployment benefits will counteract monetary policy. Government would have to cut spending in other areas. Eg. health, education which are also crucial for economic and social development.
  - Government's debt burden is increased but perhaps this is a lesser evil by comparison.
- Policy is effective for demand-pull inflation but disastrous in the case of cost-push inflation as higher interest rates fuel inflation.

(3) Incomes Policy (Supply-Side Policy)

- This involves restraining the rate of wage rises which must be complemented by direct price controls.
- Wage restraints may take the form of statutory or voluntary wage freeze or cuts (in severe inflation) or to peg wage increase to increment in productivity (in expanding industries)
- Implication of policy is illustrated by the Phillips curve:
  - Phillips curve shows that when there is little or no unemployment, wage increment will rise and thus full employment will lead to higher wages.

- This to reduce the rate of wage rises, unemployment is needed or wages must be controlled in order to preserve employment and prevent wage-push inflation.

- Thus it is effective in controlling wage-price spiral but it may lead to confrontation with trade unions.
  - To placate trade unions, prices would have to be controlled with price ceiling and a system of rationing.
  - However, the bottled-up demand is likely to express itself in black markets thereby undermining this policy.
- Another concern is that wage drift may also arise. Earnings surge ahead of wages in expanding industries with consequences such as disincentive effect on work effort without easing the wage-push inflationary pressure.
- Wage rises may cause employers to compensate by reducing the number of workers employed. Thus, wage control may help reduce unemployment by preventing workers from gaining wage rises.

(4) Exchange Rate Policy (Supply-Side Policy)

- Helps to avoid imported inflation as appreciation of the exchange rate will reduce import prices of raw materials and finished goods directly → successfully deployed in Singapore.
- This may force domestic producers to stay competitive by lowering their prices and accepting lower profit margins thereby easing inflationary pressure.
- This is possible only if government has sufficient foreign reserves ot engage in exchange rate manipulation.
- It also has implications on balance of payments for the reason that cheaper imports and dearer exports will boost outflow and check inflow of foreign exchange.
- However, this is acceptable if the country's balance of payments has been healthy or if the imbalance is a temporary state of affairs as the government could supplement this policy with measures to raise productivity. (Singapore)

Conclusion:

- Curbing inflation with a mixture of fiscal, monetary, incomes and exchange rate policies is recommended to minimize the associated pains:
  - Monetary policy as well as fiscal policy may result in unemployment and so the burden or ridding the economy of inflation falls squarely on the unemployed.
  - However, in fiscal policy, it is possible to juggle with different taxes that might help spread the burden more evenly.
  - Incomes policy, exchange rate variations or import controls might help to preserve employment.
  - Furthermore, inflation once started tends to become multi-causal in nature.
  - Simultaneously, supplementary measures can be taken to raise productivity (through research and development and labour training) and thus output so that excess demand will ease.
  - If appropriate policy mix of supplementing the short-term measures with long-term ones to raise productivity is implemented, the side effects can be minimised.
- Overall, it is important to note that some pains are inevitable in eradicating inflation.

Knowledge, Understanding, Application and Analysis		
L3	For an answer that explains the policy measures well and the negative effects of policies in the light of the preamble.	15-20
L2	For an answer that merely mentions the causes and negative effects of inflation and briefly explain the corrective measures with some attempt to evaluate the measures.	9-14
L1	For an answer that briefly explains the measures that could be used to control inflation.	1-8

E3	For a discussion of the need for government intervention or how the painful consequences could be minimised.	4-5
E2	Largely unexplained judgements	2-3
E1	For an unsupported evaluative statement	1