NYJC

TUTORIAL QUESTIONS

Resource Allocation in Competitive Markets:

Demand & Supply

(In Product & Factor Markets)

Demand & Supply
Essential Question: How do markets operate, and how do consumers, producers and government make decisions about the choices they face in the market?
Key Questions: 1. What are the main factors that would affect the market price for a particular good or service? 2. What is the significance of demand and supply factors in influencing the equilibrium price and quantity traded for a product or service in the market?

SECTION 1 – Economics ALIVE!

ARTICLE #1: The Price of Oil: How high will it go?

On a long-term trend basis, the price of oil has been rising relentlessly. If you had bought a barrel of crude twenty years ago, you would have spent under $20. Today, it would cost you over $100. From $20 to $100 in two decades: how might one account for the oil price surge? There are some simple reasons for oil inflation. Above all, sustained economic growth in many parts of the world has dictated a continually rising level of demand for oil.

Soaring demand has driven up prices. And in the oil sector this has been reinforced by factors on the supply side of the market where the dominant influence is limited availability. The sheer *scarcity* of worldwide oil resources is summed up by the term '*black gold*', a name sometimes applied to oil.

But what is particularly interesting is that although the trend in the oil price has been decidedly upward for many years, there are constant *fluctuations around the trend*. These movements tend to be characteristic of the oil market.

Indeed, oil prices can be very volatile over relatively short periods of time. In January 2008, for example, the $100-a-barrel threshold was breached for the first time. And, having broken through that barrier, the price went on rising. It soared, and by July 2008 had reached $147. Observers assumed there was a strong possibility that a price of $200 a barrel was only just around the corner.

But what actually happened in 2008 was forecast by no one: there was a sudden and dramatic price *collapse* in the second half of the year. By Christmas 2008, the oil price had sunk beneath $40 – it was down from above $140 to below $40 in a mere few months.

Autumn 2008 saw the intensification of the global financial crisis and the beginning of 'the Great Recession'. It would seem logical that when economic activity shrinks in the US, the EU and elsewhere, the demand for oil – and thus its price – could be expected to fall.

More recently, in 2012, we observed further fascinating fluctuations, albeit on a more modest scale than in 2008. 2012 was a year in which the expansion of aggregate demand was constrained in most of the industrialised countries; economic growth was, at best, weak. Even China, accustomed to near double-digit growth in recent years, recorded a slowing down of GDP expansion in 2012. Thus, there was an easing of the derived demand for oil in China, the world's second largest oil importer.

Deliberating about the oil market as described above, there tends to be more than enough uncertainty to worry about on the demand side.

Clearly, price can be influenced by such supply-constraining events as extremely bad weather, or by a major oil well leak. In the Gulf of Mexico – the location of an agglomeration of oil wells and refineries – we have seen the disruption caused by hurricanes, and by the loss of millions of barrels of oil during BP's Deepwater Horizon disaster in 2010. Such supply side factors are examples of potential influences on price in the short term. In the long term, though, discoveries of major new reserves of oil have the ability to constrain price increases. In the Arctic Circle, global warming has made possible the opening up of a vast new oilfield. As the Arctic ice has melted, oil, gas and other mineral deposits have suddenly become accessible to drilling, and sea routes for oil tankers, etc. have become navigable. The Arctic is thought to be the location of up to 90 billion barrels of oil and about 1,700 trillion cubic feet of gas. The Arctic is a difficult environment for oil prospecting and extraction: wilderness, extreme weather, opposition of environmentalists, governmental regulation.

Understanding Article #1:

1. Account for the "long-term trend" of relentlessly rising oil price.

   Guiding questions:

   - *What factors determine the price of a product*

Income, Price of related goods, Weather, costs of production etc

   - *Economists categorise these factors into 2 broad groups; what are these 2 groups?*

Demand and supply factors.

   - *What are the changes in these factors that caused price to relentlessly rise?*

Supply is limited, fixed resource, extraction costs may rise. *Demand is continually rising, increased economic activity (production) requiring increased amounts of energy and thus oil (derived demand)*

2. Which factors are more important in explaining changes in the price of oil, in the shorter term; 2008 to 2012?

   Guiding questions:

   - *What is the short term changes in oil prices?*

Price fell

   - *Which kind of factors have caused these changes?*

"global financial crisis", "bad weather", "opening of new oil fields", [Dd decreased, Ss increased]

   - *Would you categorise these factors as 'demand' or 'supply' factors? (or both?)*

"global financial crisis" ⇒ demand; *"bad weather" ⇒ disrupted supply thus Supply. Note that weather can also change demand* *"opening of new oil fields" ⇒ supply*

   - *Explain your reasoning for categorisation you have made.*

Students must relate to the demand or supply factors (reasoning)

   - *Of the factors you have identified and explained; which do you think is more influential (important)? Why?*

*Students should weigh the factors w.r.t. the **relative proportion** of total demand or total supply the factor affects.*

Questioning Article #1:

3. Do you agree that the depressed oil prices in 2008 to 2012 was a short term phenomenon and that oil prices will continue to rise in the long term?

   Guiding questions:

   - *What are the factors that have caused the price of oil to fall?*

Dd↓& Ss↑

   - *Are these changes permanent or temporary? Justify your answer.*

Dd↓ largely due to poor economic growth (not permanent), Ss↑ due to discovery of new sources; fairly permanent.

4. What are the consequences of continually rising oil prices, in the long term?

   Guiding questions:

   - *Who would benefit from the increase in oil prices? (Use the DM model)*

Oil producers, governments (interesting to bring up Saudi Arabia which the govt owns the major oil exporting company in the country). Producers of alternative energy sources. (solar energy; electric & hybrid cars etc)

   - *Who would stand to lose from increased oil prices? (Use the DM model)*

Oil consumers (major oil importing countries), Producers that require oil as raw material.

   - *Would there be changes in the market for goods related to oil? How?*

Complements (mechanics who maintain and repair internal combustion engines) would find less and less work. *Substitutes (demand for solar panels, batteries and electric motors)*

ARTICLE #2: Low Oil Prices

Source: http://news.kuwaittimes.net Sept 5 2018 (Adapted)

In the past few months, crude oil prices have registered record low levels which have resulted in a state of confusion around the world, especially in the Arab Gulf countries, whose economies and public budgets are heavily dependent on oil revenues.

We briefly review some of the reasons that precipitated the significant decline in world crude oil prices.

First, Iran's return to the international oil scene. No doubt that the recent signing of the US-Iran nuclear deal on 14 July 2015 paved the way for removing the international sanctions against Iran. This allowed Iran to return to the oil market and expand its oil production to approximately 3.6 million barrels of oil per day. This major increase in world oil supply led to a large surplus in oil supply.

Second, the increase in the production of other oil producing countries and the continuing efforts of the shale oil producers in the United States to maintain output despite the high cost of production. Indeed, according to a report issued by the US Energy Information Administration, the United States has increased the pace of its oil production, reaching 9.2 million barrels per day in 2015 compared to 7 million barrels in 2013 and raising US inventories to around 400 million barrels.

Third, it is known that there is an inverse relationship between oil prices and the price of the dollar in international currency markets. Given that oil is priced in US dollars, there is no doubt that the strength of the dollar negatively effects oil demand and consequently the prices. The strong dollar in the past year combined with incremental increase in oil production by the Organization of Petroleum Exporting Countries put additional downward pressure on oil prices.

Fourth, the global recession and very low rates of economic growth in most of industrialized countries and the emerging economies significantly added to the lower oil prices. For example, the Japanese and the Russian economies are witnessing a noticeable recession; also, China, India and Brazil are experiencing lowest economic growth rates in decades.

Lastly, the most important reason is OPEC's policy regarding oil production. No doubt that the role of OPEC's policy in determining the price of oil is critical and significant. Once OPEC declared that it would not reduce production to support prices, the price of oil began to fall more and more (OPEC collectively produces about 31 million barrels per day). It is important here to emphasize the leading role of Saudi Arabia which is the most important oil exporter in the world (it produces about eleven million barrels per day). Saudi Arabia declared that it is not in its national interest to reduce production to protect its market share unless there is cooperation among all members to freeze output collectively.

Currently, oil price has lost 60% of its value, compared with 2014 prices which has alarmed the Gulf States and forced them to consider tightening their budgets and consider various means of raising revenues including the possibility of imposing taxes. Saudi Arabia, the United Arab Emirates, Qatar, Oman, Kuwait and Bahrain have all taken steps to reduce their spending and boosting revenues in the past six months. For example, Saudi Arabia, quickly announced a plan and economic vision to reduce dependence on oil by the year 2030 and floated the idea of possible privatization of a part of Aramco, which is one of the most expensive companies in the world.

Understanding Article #2:

1. The author has identified 5 reasons for the depressed oil prices in 2018. Which of the 5 does the author feel is the 'most important'? How can this conclusion be justified?

   Guiding questions:

   - *What are the 5 reasons (factors)?*

Iran's return to the oil mkt, increased production (incl 'shale' oil), rising US$, Global recession, OPEC's decision.

   - *Are they demand or supply factors?*

Iran's return to the oil mkt,	*⇒ Supply*
increased production (incl 'shale' oil),	*⇒ Supply*
rising US$,	*⇒ (Price Factor) neither DD nor SS*
Global recession,	*⇒ Demand*
OPEC's decision.	*⇒ Supply*

   - *What makes one factor more important than another?*

*Point out the **relative effect** that factor has on the amount of oil supplied or demanded.*

   - *What additional data would help you assess the relative importance of each factor?*

Composition of the amounts contributed to demand or supply. E.g data on how much OPEC supplies (as a proportion of the total supply), the amounts China and India's oil imports.

Questioning Article #2:

2. Using information from both articles 1 and 2 as well as your own knowledge, do you agree that oil prices will continue to be depressed? Justify your answer.

   Guiding questions:

   - *Which changes in the factors affecting demand and supply would be considered as permanent? Support your answer with evidence from the articles wherever possible.*

The discovery of new sources of oil (through global warming and new extraction techniques) is a changes the supply fairly permanently. Subject to the finite availability of oil these methods can extract. However, the demand changes due to slow-downs in economic activity can be seen as less permanent as economies recover and economic growth is once again increased. But the change in demand due to changes in preferred sources of energy such as solar, electric sources can be viewed as more permanent changes to demand.

- *Is there evidence in article 2 to support or debunk the idea that oil prices will continue to rise "relentlessly" (Article #1)?*

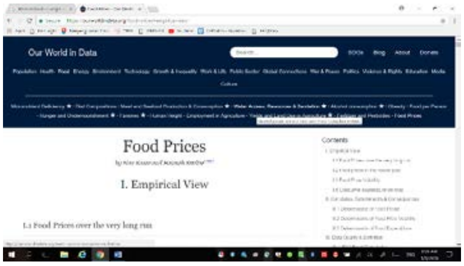
Allow students to argue from both sides. Their arguments should hinge on how permanent they would believe the changes in demand and supply changes to be.

Mind Map/Flowchart
Draw a mind-map or a flowchart showing the factors affecting the price of a good or service.

1. *What determines price in the market?*
2. *How do economic agents use the decision making model to achieve the market equilibrium?*
3. *How does the price mechanism address the central problem of economics?*
4. *Other than the price mechanism, what are the other ways to allocate goods and resources?*
5. *Does the allocation of goods and resources via the price mechanism bring about maximum welfare for all economic agents?*

Food Prices

Use the following website to help you answer the following questions:
https://ourworldindata.org/food-prices



Part 1 (based on Chp 2)

1. Based on the information in the website, describe the overall historical trend in global food prices.

Decreasing

2. Provide reasons for the above trend,

i. from the data.

increased supply, GMO

ii. other possible reasons.

production technology

3. Using a demand and supply diagram, show account for the trend in global food prices, despite the increase in world population.

SS↑ > DD↑

4. Recent trends show increasing food prices. Explain the economic relationship between fuel prices and food prices.

Potential learning points: - Fuel is part of the CoP to produce food - Fuel (bio-fuel) and food are in competitive supply.

5. What reasons have the authors claimed to explain why this relationship is "more complex"?

There are other determinants of the price of food such as economic growth, or the introduction of genetically-modified crops (which have the opposite effect on prices)

6. Do you think this trend in world food prices will continue in the coming decades? Justify your answer using economic analysis.

Accept any explanation (either increase or decrease) reward students based on the justification of their answer.

Part 2 (based on Chp 3 & 4) {This section is intended for the tutorial on Chp 3 & 4}

1. Explain the possible reasons for the historical volatility in food prices.
2. Explain why the introduction of mobile phones has helped reduce this volatility.
3. Explain the consequences of volatile food prices.
4. Explain the reasoning behind Engel's Law.
5. "The demand for food in general is very price inelastic but the demand for specific kinds of food may be very price elastic" Explain this statement.

NOTE to tutor:

- This worksheet is designed for students to visit and re-visit. Their answers should be re-looked at and improved on by themselves (with your guidance)
- The marks for the questions are intentionally excluded so they learn to develop their answers fully and extensively. This will prepare them to 'cast their net wide' when exploring answers to exam questions. Then they will need to narrow their focus depending on the mark allocation and the requirements of the question.

SECTION 2 – Case Studies

CSQ 1: Challenges Facing the Movie Industry
[Suggested Answer on Page 2-13T]

Extract 1: Revision of Ticket Prices in Singapore

Golden Village Multiplex announced that it will raise its ticket prices at all nine multiplexes. The new rate will take effect on 27th March 2008. The ticket prices adjustment will be introduced through a 50 cents increase in the basic tier of ticket prices. Earlier in January, Cathay Cineplexes also revised their ticket prices. For Cathay, the general ticket prices are upped by 50 cents while a new Blockbuster tier has been introduced where tickets to selected movie titles will be increased by an additional 50 cents. Movie titles which fall under the Blockbuster category will need to satisfy at least two criteria before they can thus be categorized. These conditions include an A-List cast or director, be a part of a successful franchise, have a production budget of more than US$100 million and opening date in Singapore coinciding with same day and date release in the USA. Both firms cited that the price increase 'is an inevitable consequence of current market situation'.

Source: Cathay Organisation & Golden Village 2008

Extract 2: Movie Pirates Using Cell-phones to Record Shows

High-end mobile phones have emerged as the recording device of choice for movie pirates in the region, with more than 30 people nabbed in cinemas this year for recording the latest blockbusters this way. Those nabbed were turned over to the police. Since Motion Picture Association (MPA) began its crackdown in late 2004, the organization and police in the Asia-Pacific region has conducted 7,400 raids, arrested more than 4,300 people and seized almost 30 million pirated discs.

According to a 2005 MPA study, piracy had cost movie studios more than US$6 billion in lost revenue.

Mr Edward Neubronner, MPA's Asia-Pacific director for operations, said that the use of mobile phones to record movies in cinemas is a relatively recent phenomenon. Pirates previously used camcorders to record the shows. The video quality of the current generation of high-end mobile phones had almost caught up with that of camcorders. And improved storage capacity, via memory cards, allowed mobile phones to record for hours.

But compared with a theatrical release or a genuine DVD, the playback quality of movies recorded by cell-phones remains questionable, said Mr Neubonner. While it is hard to differentiate between films recorded by cell-phones and those by camcorders, industry sources tell The Straits Times that some movies recorded using mobile phones had already appeared in illegal file-sharing networks and on pirated discs.

Source: The Straits Times July 2007

Extract 3: Hollywood Faces New Piracy Threat

Apart from stiff competition from other firms in the movie industry and other movie industries in other countries, Hollywood is now facing a bigger threat from piracy. Movie fans downloading free pirated films are no longer Hollywood's worst nightmare but that's only because of a newer menace: cheap and equally illegal subscription services.

Foreign, often mob-run businesses compile illegally obtained movies into "cyber-lockers" similar to Internet storage sites used by individual consumers to squirrel away pirated video. But the for-profit version of this phenomenon has spawned an array of sophisticated and seemingly reputable sites selling unlimited digital movie files for as little as $5 a month.

"Cyber-lockers now represent the preferred method by which consumers are enjoying pirated content," Paramount Pictures chief operating officer Fred Huntsberry said.

Huntsberry detailed the evolution of professional piracy methods. Commonly, Hollywood movies are made available via illegal for-profit sites within days of theatrical release, while the advent of global releasing now allows the proliferation of individual titles into an array of language dubs within the first month of a theatrical debut. When movies are released on DVD and Blu-ray Disc, the sites upgrade the quality of video offered from camcorded images to pristine digital copies. Cyber-locker-based businesses operate from Russia, Ukraine, Colombia, Germany, Switzerland and elsewhere.

On a grander scale, the motion picture industry is combating the situation with country-by-country campaigns for tougher laws against video piracy.

Source: www.abcnews.go.com, June 2010

Extract 4: Combating Film Piracy

Danny Boyle, Slumdog Millionaire director suggested a fresh tactic in the war against film piracy: cut the ticket prices.

Speaking at the launch of National Schools Film Week, Boyle conceded that many parents found that a trip to the cinema costs "too much" and suggested that cinema operators adopted "more aggressive marketing techniques to do with price". One way of combating internet piracy, he added, was to encourage more young people to visit the cinema.

"There has always been this feeling of a special occasion when you go to the movies," said the Slumdog Millionaire director. "I think there's something wonderful about sitting in the dark. It is very built into the DNA of the cinema."

Source: www.guardian.co.uk, 2009

Table 1: Cinema Capacity in Singapore

Year	2003	2004	2005	2006	2007	2008
Cinema Screens	147	147	146	167	175	174
Seating Capacity ('000)	38	38	36	38	40	37
Attendance ('000)	14,644	15,877	15,084	15,588	17,956	19,058

Source: Singapore Department of Statistics

<table>
<tr><th>Cinema Type</th><th>Days</th><th>Before 5pm</th><th>After 5pm</th><th>Sneaks/ Seasonal Sneaks*</th></tr>
<tr><td rowspan="10">Regular Cinema Halls</td><td>Monday</td><td colspan="2" rowspan="3">$7.50</td><td rowspan="4">$8.50/10.00</td></tr>
<tr><td>Tuesday</td></tr>
<tr><td>Wednesday</td></tr>
<tr><td>Thursday</td><td>$7.50</td><td>$8.50</td></tr>
<tr><td>Friday</td><td>$8.50</td><td>$10.00</td><td rowspan="6">$10.00</td></tr>
<tr><td>Saturday</td><td colspan="2" rowspan="2">$10.00</td></tr>
<tr><td>Sunday</td></tr>
<tr><td rowspan="2">Eve of Public Holiday</td><td>$8.50
Mon-Fri</td><td rowspan="2">$10.00</td></tr>
<tr><td>$10.00
Sat-Sun</td></tr>
<tr><td>Public Holiday</td><td colspan="2">$10.00</td></tr>
<tr><td rowspan="2">Cinema Europa</td><td>All Days</td><td colspan="3">$10.00</td></tr>
<tr><td>Students</td><td colspan="3">$8.00
Mon-Fri except Eve of/and Public Holiday</td></tr>
<tr><td rowspan="2">Gold Class</td><td>Mon-Thu</td><td colspan="3">$25.00</td></tr>
<tr><td>Fri-Sun, Public Holiday and Eve of Public Holiday</td><td colspan="3">$30.00</td></tr>
</table>

Figure 1: Golden Village Revised Ticket Price

*Seasonal sneaks applies to the eve of/and public holidays, seasonal May, June, July, November and December Holidays.
*Gold class cinemas are equipped with plush recliner seats with call buttons for faster and more discreet service. Seating capacity is 24-28.

Source: Golden Village

Questions

(a) (i) With reference to Table 1, describe the trend of cinema attendance in Singapore from 2003 to 2008. [1]

(ii) To what extent does the data in Table 1 indicate that the price increase of movie tickets 'is an inevitable consequence of current market situation'? [3]

(b) Using economic analysis, explain why the price increase of blockbuster movie tickets was twice the price increase for general movie tickets? [2]

(c) (i) Explain the economic relationship between pirated movies and movies screened in cinemas. [2]

(ii) Explain the threats posed by film piracy to the movie industry. [4]

SECTION 3 – Essays

Before attempting Qn 1.

- ✓ *Re-look at your mind map or flow chart (you did for the Research Assignment).*
- ✓ *Modify the flow chart using your improved knowledge and understanding.*

1. "Motorists face more misery at petrol pumps as oil prices hit record high. The government has proposed to use price controls and subsidies to curb the problem."

   (a) Explain why the price of oil would increase. [10]
   [Suggested Answer on Page 2-16T]

2. Demand and supply shocks are likely to create shortages and surpluses in a market.

   (a) Explain how the price mechanism attempts to solve the above imbalances faced in a free market. [10]
   [Suggested Answer on Page 2-20T]

3. A look at global unit sales makes clear that no region is being spared the sharp decline in automobile markets, especially luxury cars.

   http://motoring.asiaone.com.

   (a) Using demand and supply analysis, explain why there is a sharp decline in the luxury car market in 2009. [10]
   [Suggested Answer on Page 2-22T]

4. Outsourcing and the influx of foreign labour have hurt the low skilled Singaporeans in terms of falling wages, worsening inequality in Singapore.

   (a) Using economic analysis, explain why the wages of low skilled Singaporean workers have been falling. [10]
   [Suggested Answer on Page 2-26T]

Chapter 2: Demand & Supply Suggested Answers

SECTION 2 – Case Studies

Suggested answers to Question 1

(a) (i) With reference to Table 1, describe the trend of cinema attendance in Singapore from 2003 to 2008. [1]

The trend of cinema attendance in Singapore is increasing from years 2003 to 2008.

(ii) To what extent does the data in Table 1 indicates that the price increase of movie tickets 'is an inevitable consequence of current market situation'? [3]

The data in Table 1 does indicate that the price increase of movie tickets is an unavoidable result of the current market situation. From Table 1, it shows that the attendance in cinemas has increased over the years. With the increase in cinema attendance, demand for movie tickets increases. This leads to an increase in the price of movie tickets, ceteris paribus. From Table 1, it also shows that the seating capacity has decreased although there were fluctuations. This could mean that the supply for movie tickets will decrease which leads to an increase in the price of movie tickets.

However, there are many other factors that affect the supply of movie tickets and seating capacity is not the most significant factor in determining the price of movie tickets.

The price increase in movie tickets could also be due to other supply side reasons which were not reflected in Table 1. The price increase of movie tickets could be due to a higher cost of production in producing the movie. When the cost of production increases, profits will start to fall as Profit = Total Revenue – Total Cost. Thus, the supply of movie tickets will fall as supplying more movie tickets will only result in incurring more losses which will then reduce the profit further. This leads to an increase in the price of movie tickets.

Since no information on costs was given in Table 1, Table 1 only indicated to a small extent that the price increase of movie tickets is a result of the current market situation.

(b) Using economic analysis, explain why the price increase of blockbuster movie tickets was twice the price increase for general movie tickets? [2]

The price increase of blockbuster movie tickets was twice the price increase for general movie tickets because the cost of producing a blockbuster movie is much higher. An increase in cost of production of blockbuster movie will result in a higher rental cost for movie operators when they want to rent the blockbuster movies. To cover these higher costs, the price increase of blockbuster movie tickets had to be much higher than that of the general movie tickets.

Another reason would be that the demand for a blockbuster movie is generally more price inelastic than that of a regular movie which means that a price increase in the blockbuster movie ticket will result in a less than proportionate change in quantity demanded as the quantity demanded here is not very responsive to price changes. This is because of the A-List cast which means the movie is usually made up of a popular cast and that the blockbuster movie is part of a successful franchise. Hence, the price increase is larger.

(c) (i) Explain the economic relationship between pirated movies and movies screened in cinemas. [2]

Pirated movies and movies screened in cinemas are substitutes. This means that they have positive cross elasticity of demand where the increase in the price of movie tickets will lead to a fall in the quantity demanded for watching movies screened in the cinema. This will ultimately result in an increase in the demand for pirated movies.

(ii) Explain the threats posed by film piracy to the movie industry. [4]

As pirated films and movies screened in the cinema are substitutes, the threat posed by film piracy to the movie industry is that it will reduce the demand for screened movies and <u>erode the profits of the movie industry in the short run</u> as it was mentioned in Extract 2 that “piracy had cost movie studios more than US$6 billion in lost revenue”.

<Impact of film piracy on demand for movies screened in cinemas> Firstly, <u>pirated movies are sold at a very low price</u>. In Extract 3, it was mentioned that there are “cheap and equally illegal subscription services” for obtaining pirated films and there are sites that sell “unlimited digital movie files for as little as $5 a month”. The relatively low pricing associated to pirated films as compared to watching movies screened in cinemas or purchasing original DVDs, has enticed a significant number of consumers to pay for the pirated films instead, resulting in a reduction in demand for movies screened in the cinema.

Secondly, it was mentioned in Extract 2 that the “video quality of the current generation of high-end mobile phones had almost caught up with that of camcorders” and in Extract 3, it was mentioned that pirated movies in illegal sites have upgraded “the quality of video offered from camcorded images to pristine digital copies.” This means that the <u>quality of pirated movies have improved</u> in this age of digital recording technology producing a copied video that is very close to being authentic and of a very good quality as well. These very similar services provided by pirated and original movies will lead to a huge fall in demand for watching movies screened in the cinema or to purchase the original DVD.

Lastly, pirated movies are also <u>increasingly made accessible to consumers</u> as it is “made available via illegal for-profit sites within days of theatrical release” and via Cyberlocker, which provides file-sharing services that has already been operated in a few countries according to Extract 3. These developments in the Internet technologies and distribution techniques by film pirates made it easier for consumers to enjoy cheaper products at their convenience, increasing the threat posed to the movie industry by reducing the demand for screened movies even further.

<Impact on revenue and profits of movie industry>
The low price, improved quality and increase in accessibility of the pirated films will lead to a reduction in demand for movies screened in cinemas. Ceteris paribus, this leads to a fall in equilibrium price and quantity of screened movies, resulting in a large fall in revenue. With a declining revenue, its profits will fall as Profit = Total Revenue – Total Cost.

In the ***long run***, the low profitability of making movies may lead to a fall in numbers of movies produced and creative output of movies which hurt consumers eventually and leads to stagnation or even collapse of the movie industry. Hence the movie industry has to constantly innovate and evolve new technologies in screening movie to differentiate itself from pirated movies.

SECTION 3 – Essays

1. **"Motorists face more misery at petrol pumps as oil prices hit record high. The government has proposed to use price controls and subsidies to curb the problem."**

   (a) Explain why the price of oil would increase. [10]

Suggested Answer

Analysis of Question (to be done in 1-2 mins)

Command word: ***Explain -*** *requires you to select and apply economic concepts and principles (in this case dd/ss analysis) to analyse the rise in price of oil*	***Key word***: ***Price –*** *to look at demand and supply factors that would cause the price to increase*	***Key word***: ***Increase -*** *Note to talk about a rise in the price of oil*

Question requirement
This question requires you to clearly explain how the ***causes*** *(**dd and ss factors**) lead to the* ***effect*** *(**increase in oil price**), (**Causal Link)***

Schematic Plan (to be done in 2-3 mins)

Increase in oil price

Increase in demand

- global expansion
- rising national income in emerging countries
- expectations of future increase in prices

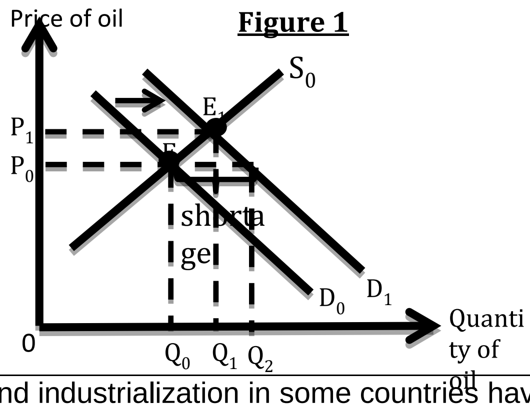
Fall in supply

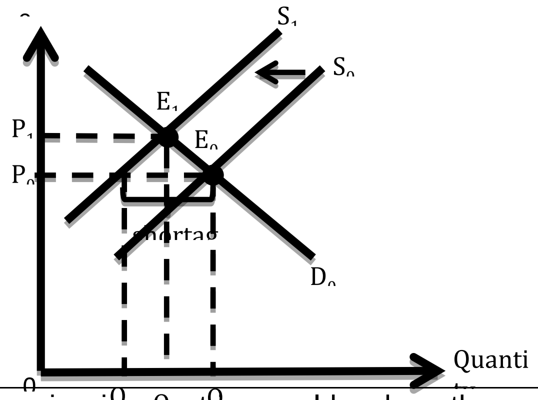
- depletion of oil resources
- political tension in the Middle East has limited oil production
- OPEC cut back SS to increase price

Price of oil increase

Write out full essay (to be done by following closely to the outline in 15 mins)

Thinking Process	Content / Analysis / Evaluation
Introduction: Define key concepts	The price of a commodity such as oil is determined by demand and supply conditions where demand is defined as the amount of goods consumers are willing and able to buy in a given period of time, ceteris paribus whereas supply is defined as the amount of goods producers are willing and able to sell in a given period of time, ceteris paribus. Therefore, changes in demand and supply conditions will cause changes in the price of oil. An equilibrium price occurs when the quantity

Thinking Process	Content / Analysis / Evaluation
Address the question	demanded by consumers is equal to the quantity supplied by producers. A rise in the price of oil can either be caused by an increase in demand for oil or a decrease in supply for oil or both. In this essay, we will be looking at both the demand and supply factors that influence the price of oil to change.
Body: Factor 1 – Global expansion (DD)	The global economic growth has led to an increase in the demand for fuel to power production in most countries. This global economic growth is due to the global expansion. ***(Point)*** As a country's output and production increase, the demand for a raw material like oil would increase as well since oil is needed to run the machinery in the plants and factories. Rising national income and strong economic growth would in turn induce optimism in investors who would increase their investment, thus increasing production and the derived demand for oil. ***(Elaboration & Example)***
Explain full price adjustment process due to increase in demand	These would thus lead to an increase in the demand for oil, causing the demand curve to shift right from D_0 to D_1 as shown in Figure 1 below. During the immediate period, quantity demanded Q_2 is greater than quantity supplied Q_0 resulting in an initial shortage of Q_0Q_2 at the original price level P_0. In the short run, this shortage will exert an upward pressure on price as unsuccessful buyers are willing to pay a higher price for oil. However, as price rises, there are some consumers who are not willing to pay the higher price. Thus, quantity demanded for oil falls along the demand curve D_1. On the other hand, as price rises, quantity supplied will increase along the supply curve S_0 as producers are motivated to supply more oil as their profit level will rise when consumers are willing to pay a higher price. Eventually, a new market equilibrium is reached at point E_1. This shows that due to global expansion, the equilibrium price of oil has increased from P_0 to P_1. ***(Link)***
Give appropriate diagram as tool of analysis	**Figure 1** 
Body: Factor 2 – Rising national income and industrialization (DD)	The rising income and industrialization in some countries have led to the increase in demand for goods that require oil, in turn increasing the demand for oil as well. ***(Point)*** The world has witnessed the phenomenal growth of emerging countries like China and India in the recent years. The rising income in such emerging countries, especially with the expansion of the middle class, would result in a rising demand for private transport like cars, which is a luxury good and is likely to be income elastic. This means that the rise in income would thus result in a more than proportionate increase in the demand for cars. This would lead to a rising demand for petrol, which in

Thinking Process	Content / Analysis / Evaluation
	turn drives up the demand for oil. ***(Elaboration & Example)*** Rapid industrialization in these countries has also caused production to increase, thus increasing the demand for oil, causing the demand curve to shift to the right from D_0 to D_1 as shown in Figure 1 above. This shows that due to the rising income and industrialization, the equilibrium price of oil will increase from P_0 to P_1. ***(Link)***
Body: Factor 3 – Speculation (DD)	Expectations about the future changes in the price of oil would also affect its demand now. ***(Point)*** If speculators expect the price of oil to increase in the future, they would buy more oil now and increase the demand for oil. This is so that when the price of oil does increase in the future, these speculators would be able to make a profit by selling their stocks. ***(Elaboration & Example)*** The increase in demand would thus cause the demand curve to shift to the right from D_0 to D_1 as shown in Figure 1 above. This shows that due to the expectations of the increase in the price of oil in future, the equilibrium price of oil will increase from P_0 to P_1. ***(Link)***
Body: Factor 1 – Depletion of oil resources (SS) Explain full price adjustment process due to fall in supply	Besides demand factors, changes in supply would also affect the price of oil. The depletion of oil resources will decrease the supply of oil. ***(Point)*** This could be due to the continuous extraction of oil as oil is a non-renewable resource. Bad weather conditions such as hurricanes and typhoons might also have destroyed oil refinery facilities reducing the availability of oil. ***(Elaboration & Example)*** These would cause the supply of oil to fall and the supply curve to shift to the left from S_0 to S_1 as shown in Figure 2 below. During the immediate period, quantity demanded Q_0 is greater than quantity supplied Q_2 resulting in an initial shortage of Q_2Q_0 at the original price level P_0. In the short run, this shortage will exert an upward pressure on price as unsuccessful buyers are willing to pay a higher price for oil. However, as price rises, there are some consumers who are not willing to pay the higher price. Thus, quantity demanded for oil falls along the demand curve D_0. On the other hand, as price rises, quantity supplied will increase along the supply curve S_1 as producers are motivated to supply more oil as their profit level will rise when consumers are willing to pay a higher price. Eventually, a new market equilibrium is reached at point E_1. This shows that due to the depletion of oil resources, the equilibrium price has increased from P_0 to P_1. ***(Link)***
Give appropriate diagram as tool of analysis	Figure 2 
Body: Factor 2 –	Political tensions occurring in countries could reduce the supply of oil.

Thinking Process	Content / Analysis / Evaluation
Political tension (SS)	***(Point)*** Most of the oil production in the world takes place in the Middle East. The violence and the political tension taking place in the Middle East would have disrupted or limited oil production in these countries. Such security concerns may increase the cost of production or hamper the production of oil, causing a fall in supply and the supply curve to shift to the left from S_0 to S_1 as shown in Figure 2 above. ***(Elaboration & Example)*** Political tensions have in fact led to a rise in the equilibrium price of oil from P_0 to P_1. ***(Link)***
Body: Factor 3 – OPEC (SS)	Actions of the supplier of oil can influence the supply of oil and in turn the price of oil. ***(Point)*** One such organization is the Organization of the Petroleum Exporting Countries (OPEC). OPEC is the international cartel which controls the supply of oil and thus supplies oil to the rest of the world. OPEC might be reluctant to increase production levels in order to maintain high prices for oil. Alternatively, OPEC might be cutting back or hoarding the supply of oil to push up the price causing a fall in supply and the supply curve to shift to the left from S_0 to S_1 as shown in Figure 2 above. ***(Elaboration & Example)*** This will lead to a rise in the equilibrium price of oil from P_0 to P_1. ***(Link)***
Conclusion *Though not required in this qn, bringing in elasticity concepts serves to explain how oil prices may increase even more significantly*	In conclusion, the rise in the price of oil is a combination of both demand and supply factors. The combined effect of a rise in demand and a fall in supply of oil will lead to the rise in the price of oil. However, the recent increase in the price of oil is largely demand driven due to the huge increase in demand of oil from countries like China and India. The supply factors serve to exacerbate the increase. The demand for oil is fairly price inelastic as it is a raw material needed in production processes and its supply is price inelastic as well since it takes time and a lot of effort to extract oil. With an inelastic price elasticity of demand and price elasticity of supply, the increase in price of oil is even more significant.

Knowledge, Application, Understanding and Analysis		
L3	Clear explanation of both demand and supply factors causing the increase in oil prices and application of current real world examples to explain price changes. (2D and 1S factors or 2S and 1D factors)	8-10
L2	Explanation of demand and supply factors increasing prices but explanation is not contextual. (At least 1 demand and 1 supply factor)	5-7
L1	For an answer that shows some knowledge that prices are determined by demand and supply intersection. Mere listing of the demand and supply factors.	1-4

2. Demand and supply shocks are likely to create shortages and surpluses in a market.

(a) Explain how the price mechanism attempts to solve the above imbalances faced in a free market. [10]

Question Analysis
• Candidate must explain how price mechanism attempts to solve both shortage and surplus. • Application to real-world situations with assumptions would garner high marks. • Suitable diagrams could be drawn to aid in explanation.

<u>Suggested Answer</u>

<u>Introduction</u>

- State what is meant by free market – Qe and Pe determined totally by free market forces of demand and supply. No government intervention.
- State that price signal is the main tool to resolve shortages and surpluses in the market.

<u>Body</u>

Framework:

- What is mkt eqm? Conditions for eqm?

Shortage:
State condition for a shortage ➔ Qd > Qs

- At original eqm, either ↑ in dd or ↓ in ss (or various other combinations) would lead to a shortage. Provide real world examples.
- Explain how price mechanism, through the use of price signals, guides the market towards a new equilibrium via the incentives given to the producers to increase quantity supplied (Law of Supply) and also for some consumers to no longer be vying for the goods and services.
- Process will continue so long as shortage remains in the market and will stop once new eqm is attained.

Surplus:
State condition for a surplus ➔ Qs > Qd

- At original eqm, either ↑ in ss or ↓ in dd (or various other combinations) would lead to a surplus. Provide real world examples.
- Explain how price mechanism, through the use of price signals, guides the market towards a new equilibrium via the incentives given to the consumers to increase quantity demanded (Law of Demand) and also for some producers to no longer be willing and able to sell the goods and services.
- Process will continue so long as surplus remains in the market and will stop once new eqm is attained.

<u>Assumptions for price signal to work (Explain either one of the following)</u>

- Perfect information between suppliers and consumers
- Perfect factor mobility
- No government intervention

Conclusion

- Price mechanism may attempt to bring market to equilibrium given perfect conditions. However equilibrium is an ideal as the market is more likely to be in a constant flux due to the constant changing shocks to the market.

Knowledge, Application, Understanding and Analysis	
L3 (8 – 10)	Detailed, thorough, sequential explanation from introduction of shock till attainment of new equilibrium. Minimal forgivable errors detected. Candidate has a clear grasp of economic theory on demand & supply.
L2 (5 – 7)	Able to somewhat explain price mechanism and end up with a new equilibrium. Clumsy explanation coupled with some errors/gaps may be present though candidate may still be regarded as possessing the grasp of the theory. Marks capped at 5m if only one imbalance is explained.
L1 (1 – 4)	Illogical explanation, fatal mistakes detected (e.g. wrong labelling of demand and supply curves, if diagram is used). Did not mention price signal at all in guiding the market to the new equilibrium.

3. **A look at global unit sales makes clear that no region is being spared the sharp decline in automobile markets, especially luxury cars.**

http://motoring.asiaone.com

(a) **Using demand and supply analysis, explain why there is a sharp decline in the luxury car market in 2009. [10]**

Suggested Answer

Introduction

- Briefly explain the meaning of sharp decline in automobile markets
- Sharp decline in automobile markets sector → lower sales → lower output exchanged
- Assuming the sector operates in a free market economy, forces of demand and supply will determine the equilibrium price and output of cars.
- Briefly explain laws of demand and supply and equilibrium.
- Explain that output can fall with several possibilities. Firstly decrease in demand or/and decrease in supply. Secondly, decrease in demand greater than increase in supply. Lastly, decrease in supply greater than demand.

Main Body

Decrease in demand

- Fall in income: global economic slowdown → for luxury cars → a fall in income will lead to fall in demand for luxury cars. The demand curve for luxury cars will shift to the left → output fall. (Illustrate with diagram).
- Expectation of future income: With the general economy not doing well → consumers expect further fall in income → fall in demand for luxury cars → fall in output.
- Prices of related good: Relatively cheaper alternatives such as other brands of car → consumers will switch from luxury cars to its substitutes→ fall in demand for luxury cars → output fall.
- Other possible factors include change in taste and preferences, government policies, size and composition of population, prices of related goods etc.

Decrease in supply

- Higher cost of production: with the increase in prices of inputs for making luxury cars → higher cost of production → fall in supply of luxury cars → fall in output.
- Smaller number of distributors in Singapore: bigger market overseas such as China → distributors are reallocating to China → reduction in the number of sellers in Singapore → fall in supply of luxury cars → fall in output.
- Other possible factors include change government policies, producers' expectation of price, technology and so on.
- Draw diagram to illustrate that decrease in demand and supply of Porsche will lead to a fall in equilibrium output of the Porsche cars.

Conclusion

- Hence the automobile sector, especially luxury cars, has shrunk due to the factors as mentioned.
- Economic analysis should take into consideration the perspectives of both demand and supply.

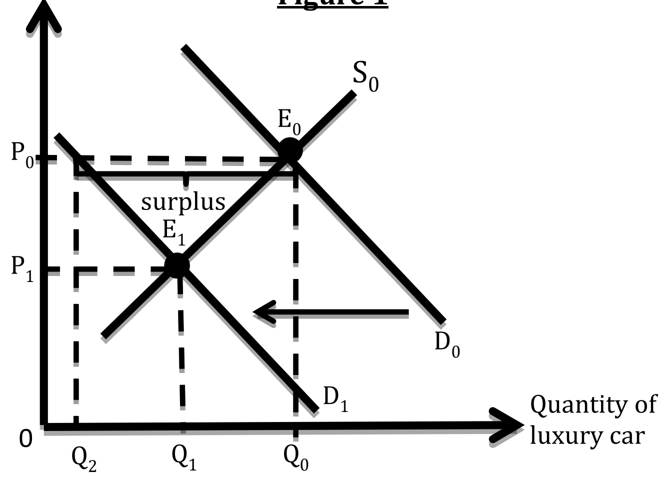
Knowledge, Application, Understanding and Analysis		
L3	Answer shows a thorough and complete explanation of relevant demand and supply factors, the relative shifts and elasticities and provides accurate and developed explanation of their respective effects on the luxury cars market using diagrams.	8-10
L2	Answer shows attempt to explain the relevant demand and supply factors and their respective effects on the luxury cars market, is unbalanced and with or without diagrams.	5-7
L1	Answer is mostly irrelevant and only consists of a smattering of valid points. Basic theoretical errors may be made such as the explanation of the relevant demand and supply factors	1-4

Sample Answer to Qn 3

A sharp decline in the luxury automobile markets would mean that these markets are experiencing lower sales. Lower sales will equate to lower output exchanged and this is especially so for the luxury cars. Assuming that the automobile sector operates in a free market economy, the equilibrium price and output of cars will be determined by the interaction of demand and supply forces. Demand here is the amount of cars consumers are willing and able to buy in a given period of time, at a given price, ceteris paribus whereas supply is defined as the amount of cars producers are willing and able to sell in a given period of time, at a given price, ceteris paribus.There are many different possibilities that will attribute to the decline in the luxury car market per se. It could be due to a fall in demand, a decrease in supply, a fall in both demand and supply or a fall in demand is greater than the fall in supply.

The fall in income has led to a fall in demand for luxury cars. In 2009, the world experienced a global economic slowdown where consumers experience a fall in their incomes. Their purchasing power falls and they demand lesser for luxury cars shifting the demand curve to the left from D_0 to D_1 as shown in Figure 1 below. During the immediate period, quantity supplied Q_0 is greater than quantity demanded Q_2 resulting in a surplus of Q_2Q_0 at the original price level P_0. In the short run, this surplus will exert a downward pressure on price as producers will try to get rid of the excess stock by offering a lower price. This will reduce the quantity supplied for luxury car resulting in a movement along the supply curve S_0. As price falls, consumers will be attracted to the lower price offered and quantity demanded will increase resulting in a movement along the demand curve D_1. Eventually, a new market equilibrium is reached at point E_1. This shows that due to a fall in income, the equilibrium price and output of luxury car has fallen from P_0 to P_1 and from Q_0 to Q_1 respectively.

Figure 1

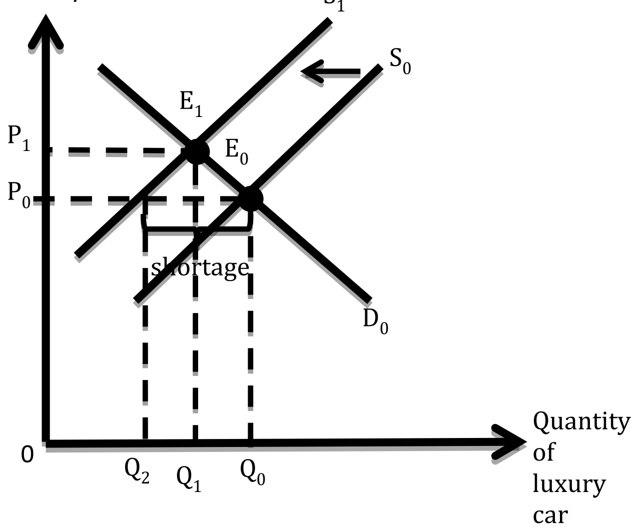


With consumers' expectation of future fall in income, it will lead to a fall in output for luxury cars. With the global economy slowing down, consumers will expect a further fall in income. This will again result in a fall in demand for luxury cars shifting the demand curve to the left from D_0 to D_1 as shown in Figure 1 above. This shows that due to the expectation of a further fall in income, the equilibrium price and quantity for luxury car will fall from P_0 to P_1 and from Q_0 to Q_1 respectively.

The availability of a cheaper substitute will lead to a fall in demand for luxury cars. A substitute product is an alternative product that can replace another because it satisfies the same want. The availability of cheaper substitute such as other brands of car will make consumers switch from luxury cars to its substitutes. This will again result in a fall in demand for luxury cars shifting the demand curve to the left from D_0 to D_1 as shown in Figure 1 above. A luxury car such as a Porsche car can be substituted with a cheaper alternative such as Hyundai where both serves the same purpose of being able to transport one from one place to another. This shows that due to the availability of a cheaper substitute, the equilibrium price and output of luxury car has fallen from P_0 to P_1 and from Q_0 to Q_1 respectively.

A higher cost of production in producing luxury cars may lead to a fall in supply for luxury cars. Should raw materials such as steel experience a price increase coupled with an increase in cost of labour and machineries, this will mean that the price of inputs for making luxury cars has increased. The higher cost of production will in turn result in a fall in supply shifting the supply curve leftwards from S_0 to S_1 (Figure 2) as producers would not want to supply goods that will incur a high cost as it will affect the profits they can reap since profit is the difference between total revenue and total costs.

Figure 2



During the immediate period, quantity demanded Q_0 is greater than quantity supplied Q_2 resulting in an initial shortage of Q_2Q_0 at the original price level P_0. In the short run, this shortage will exert an upward pressure on price as unsuccessful buyers are willing to pay a higher price for luxury cars. However, as price rises, there are some consumers who are not willing to pay the higher price. Thus, quantity demanded for luxury cars falls along the demand curve D_0. On the other hand, as price rises, quantity supplied will increase along the supply curve S_1 as producers are motivated to supply more luxury cars as their profit level will rise when consumers are willing to pay a higher price. Eventually, a new market equilibrium is reached at point E_1. This shows that due to the higher cost of production, the equilibrium price has increased from P_0 to P_1 while quantity of luxury car fell from Q_0 to Q_1.

The fall in the number of suppliers resulted in a fall in supply of luxury cars. Distributors of luxury cars will tend to relocate themselves to bigger markets to gain more sales. This will result in a reduction in the number of sellers of luxury cars in the area that they have relocated from resulting in the supply curve to shift leftwards from S_0 to S_1. For example will be in Singapore where the smaller number of distributors reallocated themselves to China where the market is bigger. This shows that due to the fall in the number of suppliers, the equilibrium price has increased from P_0 to P_1 while quantity of luxury car fell from Q_0 to Q_1.

The imposition of tax on luxury cars will result in a fall in the supply of luxury cars. A luxury car tax will increase the cost of producing the car. To avoid incurring losses, suppliers of luxury car will reduce the production of such cars. Supply thus falls and supply curve will shift to the left from S_0 to S_1. For example will be in Australia where a 33% tax is imposed on luxury cars. Suppliers of cars are required to pay this amount of tax when they sell a luxury car. Due to the imposition of tax, the equilibrium price has increased from P_0 to P_1 while quantity of luxury car fell from Q_0 to Q_1.

It is clear that the automobile sector and especially the luxury car market have shrunk, most probably due to a fall in demand and supply of luxury cars. Luxury car companies should develop and create new products to attract customers and hopefully sales will regain overtime to boost the luxury car market.

4. **Outsourcing and the influx of foreign labour have hurt the low skilled Singaporeans in terms of falling wages, worsening inequality in Singapore.**

   (a) Using economic analysis, explain why the wages of low skilled Singaporean workers have been falling. [10]

<u>Analysis of Question</u>

Candidates are expected to make use of a simple demand and supply framework, applied into the context of the labour market to analyze the reasons for falling wages.

Candidates may suggest any plausible reasons that could account for the decrease in wage rates. It is expected that candidates demonstrate sufficient scope in their choice of reasons to include both demand factors as well as supply factors. They are then expected to explain how the suggested causes led to falling wage rates. Recognition of the difference between wages and wage rate is expected of candidates. Only a simple demand and supply approach is necessary. Use of elasticity concepts is not required for full credit.

<table>
<tr><th colspan="3">Knowledge, Application, Understanding and Analysis</th></tr>
<tr><td>L1</td><td>The candidate's answer is not aimed at answering the question. It may contain relevant ideas on how wage rates are determined but does not go on to identify and explain reasons for falling wage rates. Answer may contain many conceptual errors.</td><td>1-4</td></tr>
<tr><td>L2</td><td>The candidate's answer clearly demonstrates the main requirement of the question to identify and explain reasons for falling wage rates. The explanations provided demonstrate good content mastery and analytical ability. Strong reasoning ability coupled with appropriate use of diagrams and economic terminology is expected. However the answer may lack scope, including only demand side reasons or supply side reasons but not both. Answer may contain some minor conceptual errors.

Alternatively, a candidate's answer may reach this level if the choice of reasons for falling wage rates demonstrates sufficient scope and application even though the explanations provided are not sufficiently in depth.</td><td>5-7</td></tr>
<tr><td>L3</td><td>Candidate's answer demonstrates both strong analytical and application skills, together with a choice of reasons that demonstrates scope. Answer may contain few minor conceptual errors.</td><td>8-10</td></tr>
</table>