J1 June Intensive Revision

## Demand and Supply – Q2 (H2 A Level 2012)

**The Market for Cotton**

**Table 1: Cotton in selected economies (million bales)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Production** | | **Consumption** | |
|  | **2008/09** | **2009/10** | **2008/09** | **2009/10** |
| **Brazil** | 5.4 | 5.3 | 4.2 | 4.4 |
| **China** | 36.7 | 32.0 | 44.0 | 48.5 |
| **India** | 22.6 | 23.2 | 17.7 | 19.5 |
| **Pakistan** | 8.7 | 9.6 | 11.3 | 11.0 |
| **United States** | 12.8 | 12.2 | 3.6 | 3.5 |
| **World total** | 107.1 | 101.2 | 109.9 | 117.2 |

*Source: United States Department of Agriculture*

**Extract 1: Brazil's cotton growers seek to boost output as India restricts exports**

Cotton prices have soared 73% in the past year and reached a 15-year high of US$1,064 on 28 September 2010 after India, the world's second-biggest exporter after the United States, said it would limit exports. The Indian government will limit exports to 5.5 million bales in 2011, compared to 2010 when exports were 8,3 million bales. The price of cotton is expected to stay above US$1 until June 2011.

Cotton growers in Brazil, the world's fifth-largest exporter of the fibre, plan to increase output in 2011 after the rise in world prices. Planting for the 2011 harvest may rise to 1.1 million hectares from 830 000 hectares in 2010.

Brazil's government may consider increased financial support for cotton growers to encourage them to raise output in 2011, according to the Brazilian Agriculture Ministry. A four-month drought hurt the quality of the crop this year in Brazil, causing output to fall. In September the government temporarily eliminated a 10% tariff on cotton imports as domestic supplies fell short of demand.

*Source: Bloomberg, 1 October 2010*

**Extract 2: UK retail clothing firms far from cheerful about future of cheap fashion**

It was a sign of the times; fashion so cheap it became "disposable’ as globalisation brought container-loads of low-cost clothes to the UK. But clothes retailers are now warning that the era of constantly falling prices is coming to an end and that prices could rise in 2011. A huge rise in the price of cotton to a 15-year high could not be ignored, they said. At the same time, retailers are facing higher labour costs in Asia, the impact of a weaker pound and a rise in Value Added Tax (VAT) from 17.5% to 20% from January 2011.

The chief executive of clothes retailer Next predicted that the prices of Next's clothes were going to rise by up to 8% in 2011. He said that he suspected that shoppers would have to cut back on the number of new outfits they buy: 'Our best guess is that if prices do rise by 8%, then volume of sales will be down by 10%. The clothing retail industry hasn't experienced price increases for 15 years and the truth is we don't really know what the response will be.’

The director of a leading research company said consumers are facing what could be a permanent change in the clothing market: 'Prices can't keep failing forever: they reach a floor, and we are now at a point where retailers' profits are really quite low. Because of the recession they are finding it difficult to maintain sales. This means that when costs rise, they have to be passed on to the consumer.'

Primark, a clothing company known for its ability to emulate designer looks at rock-bottom prices, has been at the forefront of the disposable fashion movement. Its breathtaking prices - this autumn you can still buy jeans for £8 and a top for £4 - caused a stampede when its first store opened, on London's Oxford Street in 2007, Another company. Asda, sold its cheapest pair of own brand jeans for £14.97 in 2000; now the price is down to £4.

Some have argued that the increase in the cotton price has its roots in the financial crisis of 2008, when farmers stopped planting low-value cotton and switched to higher-value crops such as corn and soya, When retail sales picked up, demand for cotton also rose and prices shot up - just at a time when major cotton-producing regions such as China and Pakistan were suffering devastating floods, and India, the second largest producer, was limiting exports.

The deputy chief executive of a well-known department store explains that 60% of the cost of clothing is in the fabric and about 30% of the fabric cost is in the raw materials: ‘The approach we are taking is to pass it on to customers and we think most other retailers will have to do the same.’ He says its prices will rise, like Next's, by up to 8%, He also points to Increased labour costs all around the world’, less spare capacity in Chinese factories, rising freight costs and the unfavourable impact of foreign exchange movements as other pressures being faced by retailers.

Some analysts argue, however, that the gloom is being overdone. The chairman of the department store John Lewis Partnership, which last week reported a 20% increase in fashion sales, certainty thinks the future is brighter than some of his peers say. ‘Prices may rise a little but tough competition will take some of the heat out of these rises.’

*Source: The Observer, 19 September 2010*

**Extract 3: Tesco, the supermarket chain, is set to take on its rivals with the opening of a specialist clothing store in London**

Tesco, which is more used to selling clothes in its supermarkets than high street boutiques, is planning to open a store dedicated to selling clothing in London's West End. The store would be branded F&F, after Tesco’s own-label clothing range. The move will see Tesco try to succeed where its competitors have failed. In 2008 arch-rival Asda closed its chain of specialist high street clothing shops following a four-and-a-half-year trial run, because it could not make sufficient profit,

Tesco's move could be partly driven by the fact that fashion brands are having to compete more aggressively in an ever-more-crowded marketplace. As well as being home to thousands of stores from established brands like Primark and Next, the UK is attracting a large number of international clothing brands. US chain Abercrombie & Fitch entered the UK market a few years ago, and chains such as Forever 21, Vero Moda and Victoria's Secret are also set to enter the UK.

If Tesco can get the look and feel right in a dedicated clothing store, then it could be a good way of building brand awareness.

*Source: Daily Telegraph, 9 July 2010*

**Questions**

(a) (i) Why might the changes shown in Table 1 have led to an increase in the world price of cotton? [1]

(ii) Given the information contained in Table 1, identify the country that has had the greatest impact on world prices. Justify your answer. [3]

(b) What can you conclude from the evidence in Extract 1 about the price elasticity of supply of cotton in Brazil? [2]

(c) Explain the likely reason why the Brazilian government eliminated the 10% tariff on cotton imports and the Indian government restricted cotton exports. [3]

(d) In Extract 2, the chief executive of Next considers the effect of an 8% rise in the price of Next’s clothes. With reference to the concept of price elasticity of demand, explain the expected impact of this price rise on the firm's total revenue. [3]

(e) With reference to the data where appropriate, discuss the view that supply factors are likely to be more important than demand factors in explaining changes in the price of cotton. [8]

(f) Using the evidence in the data, discuss how the market structure of the retail clothing industry in the UK will affect the ability of firms in this industry to make excess profits in the long run when faced with an increase in the price of cotton. [10]

**[Total: 30]**

**Suggested Answers**

**(a) (i) Why might the changes shown in Table 1 have led to an increase in the world price of cotton? [1]**

There was an increase in world demand from 109.9 million bales in 2008/09 to 117.2 million bales in 2009/10 while there was a fall in supply from 107.1 million bales in 2008/09 to 101.2 million bales in 2009/09. As a result, an excess demand condition occurred in the world market for cotton, contributing to the increase in world price of cotton.

**(a) (ii) Given the information contained in Table 1, identify the country that has had the greatest impact on world prices. Justify your answer. [3]**

China. It is the country with the largest production in the cotton market and the largest consumer market. As the production capacity of cotton in China has decreased from 2008/09 to 2009/10 while its consumption capacity has increased from 2008/09 to 2009/10. This will create an excess demand condition in China’s market which will raise the price of cotton in China. This is likely to influence China to resort to import more from other countries, such that there will be an increase in demand for cotton in the world market while it cuts down the export of cotton to the world market. Furthermore, China is a significant importer in the world market, given that her consumption is greater than her production and this difference between the consumption and production capacity has widened which will raise her import demand more significantly. As a result, China’s demand in the world market for cotton will rise, contributing to an extensive rise in world price for cotton.

**(b) What can you conclude from the evidence in Extract 1 about the price elasticity of supply of cotton in Brazil? [2]**

The price elasticity of cotton is price-inelastic as there is a limited capacity of production in Brazil and the source of supply is restricted. As cotton is an agricultural product, it is limited in production due to long gestation and limited supply of resources like land. At the same time, the imposition of 10% tariff will mean that the supply is also limited by high imported price of cotton.

**(c) Explain the likely reason why the Brazilian government eliminated the 10% tariff on cotton imports and the Indian government restricted cotton exports. [3]**

The Brazilian government eliminated the 10% tariff to lower the price of import of cotton so as to ensure that there is an increase in the supply of cotton to meet the rising demand. As seen from table 1, Brazil has an increase in production of cotton by 0.1 million bales from 08/09 to 09/10 while the demand for cotton increases by 0.2 million bales for the same time period. As for India, it has restricted cotton export as there is greater increase in the local consumption which is greater than the increase in production of cotton in India. This will mean that it may have shortage in the local market, indicating that it may need to increase in import. To avoid importing more cotton, which will push price of cotton higher compared to the local market, leading to higher cost of living, it will prompt India to reduce export of cotton to ensure that there is sufficient supply in the local market. Furthermore, the higher degree of import expenditure will lead to outflow of currency, leading to depreciation. This will mean higher price of import in local value, undermining the cost of living of India, which is very import-dependent on resources like oil.

**(d) In Extract 2, the chief executive of Next considers the effect of an 8% rise in the price of Next’s clothes. With reference to the concept of price elasticity of demand, explain the expected impact of this price rise on the firm's total revenue. [3]**

As considered by Next’s chief executive, the effect of an 8% rise in the price of Next’s clothes will lead to a reduction in quantity demanded of Next’s clothes. If as projected, the fall in quantity demanded is about 10%, which has more than proportionate decrease in quantity demand in response to increase in price and this will contribute to a fall in total revenue.

Price of Next’s Clothes

P1

Gain

Fig. 1 – Price-elastic demand for Next’s Clothes

P0

SS

Loss

Qty of Next’s Clothes

Q0

Q1

As seen from the diagram, there will be a fall in the total revenue for Next’s clothes as the gain in revenue due to the rise in price of Next’s clothes is lesser than the loss in revenue due to the fall in quantity demanded of Next’s clothes, given that the demand is price-elastic, given that the price elastic demand for clothing is price-elastic.

It is likely that the demand is price-elastic since there are extensive substitutes like Primark and Asda and other stores, given its high degree of competition. As clothes are durables, which means there is low degree of necessity of demand for the good, shaping it to be price-elastic in demand.

**(e) With reference to the data where appropriate, discuss the view that supply factors are likely to be more important than demand factors in explaining changes in the price of cotton. [8]**

In the determination of the price of cotton, the forces of demand and supply will affect the price of cotton. Whether the supply or demand is more influential, there is a need to consider the nature of the good based on the understanding of the market forces influencing the demand and supply and the factors affecting the price-elasticity of demand and supply.

It is likely that supply is more significant in influencing the change in price of cotton as cotton is an agricultural product. This means that the production is affected by factors like weather factors and lack of resources like land. As stated in the Extract 2, major cotton-producing regions such as China and Pakistan were suffering devastating floods’, implying that cotton can be reduced extensively in the short run by weather conditions. In addition, as an agricultural product, it has long gestation and is limited by the availability of land for planting. This would mean that the supply is price-inelastic since the production capacity cannot be increased easily within a short period of time. Consequently, if there is an increase or decrease in demand, the price will fluctuate more extensively for cotton as the supply is price-inelastic.

The control by the government as seen in the measures adopted by India and Brazil (export restriction and tariff imposition) will also add on the cost of goods sold in the world market, leading to reduction in supply of the goods persistently and this will imply that supply can affect extensively the change in price of cotton.

Although the percentage increase in demand is at 6.6% which is greater than the percentage reduction of 5.6% for the world market for cotton as calculated from the table over the two time periods, the demand factor still has a less significant influence on the price of cotton. The demand for cotton seemed to increase only from developing countries which has lower purchasing power and may not have a sustainable demand in the long run. Furthermore, the demand is price-elastic as there are many other forms of materials which can be manufactured synthetically to substitute cotton as a raw material for clothing, implying that the change in price is less extensive, given a reduction in supply when demand is price-elastic.

In sum, the supply factor is the persistent and pivotal factor influencing the price of cotton. However, in short run, a rise in demand may also affect the price of cotton. The key factors to consider in this demand and supply analysis would be the nature of agricultural products and the growth of population.

**(f) Using the evidence in the data, discuss how the market structure of the retail clothing industry in the UK will affect the ability of firms in this industry to make excess profits in the long run when faced with an increase in the price of cotton. [10]**

In the examination on whether the firms in the UK retail clothing industry will make excess profit condition, it is imperative to consider the nature of the market structure and how the cost condition will affect the production of cloth as seen from the rise in price of cotton.

In the retail clothing industry, the firms will face a monopolistic market structure and it will affect the slope of the marginal and average revenue of the firms.

The change in the price of cotton will lead to a rise in cost of production which will affect the excess profit of the firms in the cloth retailing industry. It is also important to take note of the nature of the market structure of retail clothing as the market demand is affected by the characteristics of this type of industry.

To determine the level of profit in the retail clothing industry, we need to derive the production equilibrium of the firm in this industry, which is based on profit maximization where the price and output level is set at the level where MC=MR. As the firm in the cloth retailing industry is under the monopolistic competition market structure, where there are many buyers and product is differentiated in an imperfect market structure and immobility condition, the marginal revenue (MR) and average revenue (AR) will be downward-sloping but price-elastic as there is limited market power for the firm as it is created through product differentiation. As for the marginal cost (MC), it will slope upwards and from left to right as it is subjected to over-utilization of capacity of production in the short run. Thus, the firm will produce at the level where marginal cost is equal to marginal revenue and price is set based on the equilibrium on average revenue. As for the profit, it will be based on the difference between the average revenue and average cost, multiplied with the output level.

Price

MC2

MC

AC

P1

P0

Qty

Q0

Q1

MR

AR

As seen from the diagram, the price and output is at P0 and Q0, where the firm’s marginal cost (MC) is equal to the marginal revenue (MR). The firm will experience normal profit at this level as average revenue (AR) is equal to average cost (AC) at Q­0.

The rise in the price of cotton will lead to a rise in the cost of production which will raise the marginal cost from MC0 to MC1 as the rise in raw material is seen as an increase in variable cost. Given that the profit maximization level is now at Q1, where the MR now intersects MC, and thus the price and output level is at P1 and Q1, contributing to the subnormal profit condition as AR is less than AC at Q1. Hence, it can be observed that the firm is making subnormal profit.

In the long run, the profit condition for the firm will be at normal profit, when the industry adjusts to the subnormal profit condition, contributed by the characteristics of the monopolistic market structure of the barriers to entry. Due to subnormal profit condition, firms which are experiencing loss will exit from the industry and this will lead to an increase in market demand for the remaining firms and the MR and AR will become more price-elastic as there are less firms in the monopolistic competitive market. This adjustment will continue until the firm reaches the production level where there is normal profit and production level will be at profit maximization level.

Price

LRMC

LRAC

P0

MR0

Qty

Q**0**

AR1

As seen from the diagram, the production level is set at P0 and Q0 based on profit maximization and the profit level is now at AR=AC.

It can be observed that the firm will adjust to the condition of normal profit in the long run despite the rise in the price of cotton which will raise the cost of production. This is due to the condition of low barriers to entry which will allow the exit of firms till the remaining firms in the industry attain normal profit. This is seen from how the industry adjusts the slope of MR and AR, which is influenced by the degree of substitution for goods produced by lesser firms existing in this industry.