Tutorial #22.3: Essay Question 1
TYS N2000 Q3: Distinguish allocative efficiency and productive efficiency. [10]

Introduction
- Allocative efficiency is defined as the allocation of resources to produce the combination of goods and services most wanted by the society while productive efficiency on the other hand, is defined as the production of goods and services at the lowest possible average costs of production.

Body
Allocative efficiency is achieved when Price equals Marginal Cost (P = MC).

However, productive efficiency is achieved when firms produce along the Long Run Average Cost curve (LRAC) as it shows all the lowest possible unit cost for the production of each output level. And if the output is at the minimum efficient scale, it is where most of the internal economies of scale is reaped.

With reference to the figure above:
When Price > Marginal Cost at output 0Q1:
- the consumer values the additional unit of good more than the resources required to produce it (a > b), so there will be a net gain in social welfare if the additional unit is produced.

When Price < Marginal Cost at output 0Q2:
- the value that the consumer places on the additional unit of good is worth less than the opportunity cost of producing it (d < c).
- in other words, society will be better off if the additional unit is not produced, & if the resources are diverted to produce some other commodity which can fetch a higher price (reflecting a higher value).

At output 0QE:
- when marginal cost equals marginal benefit (price), the last unit produced is valued as much as any other good that could have been produced using the same resources.
- once P = MC, it is not possible to improve the situation by reallocating resources.

Conclusion
Allocative efficiency is concerned of how resources are allocated for the best interest of society whereas productive efficiency focuses on whether least cost methods are used for production.
Question 2: 2010 A levels Q2
Retailers in Singapore supply a wide range of services of services and products in a variety of market structures.
(a) Explain the key differences between oligopolistic competition and monopolistic competition. [10]
(b) Consider different retailers in Singapore and discuss which of these two market structures best explains their market behavior. [15]

Part (a)

Introduction

Key Words

<table>
<thead>
<tr>
<th></th>
<th>Oligopolistic competition</th>
<th>Monopolistic competition</th>
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<tbody>
<tr>
<td>Number of firms</td>
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<tr>
<td></td>
<td>*Examples: A few major players in fast-food chain and telecommunication retailing.</td>
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<tr>
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<td>*Examples: Telecommunications retailing characterized by high legal barriers, high start-up costs, extensive EOS etc.</td>
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<tr>
<td>Nature of Product</td>
<td>Product can be homogenous OR differentiated.</td>
<td></td>
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<tr>
<td></td>
<td><strong>Homogenous product</strong> The products sold by the firms are identical and of the same quality.</td>
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<td>Example: Crude oil - The product is so highly standardized to the point that consumers are assured the quality is the same no matter which seller supplies this product. Consumers are not brand-conscious.</td>
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<tr>
<td></td>
<td>Differentiated products For differentiated products – Real and/or imaginary (perceived) differences can exist. Products may vary in</td>
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</tbody>
</table>

Note: It is not meaningful to compare profits in the short-run as all firms can earn any of the 3 types of profits, namely, supernormal/abnormal, normal and subnormal profits in the short-run.

Body

Note: To explain the differences, it is important that candidates do not contrast the individual characteristic by itself. A good answer will attempt to link related points together. E.g. Oligopoly has a few dominant firms due to the high barriers to entry in contrast with monopolistic competition as there are no barriers to entry.

Differences in Characteristics/Features leading to different behaviour and profits in the long-run

<table>
<thead>
<tr>
<th>Features</th>
<th>Oligopolistic Competition</th>
<th>Monopolistic Competition</th>
</tr>
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<tbody>
<tr>
<td>Number of firms</td>
<td>Market dominated by a few large producers and each with significant market share.</td>
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<td></td>
<td>*Examples: A few major players in fast-food chain and telecommunication retailing.</td>
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</tr>
<tr>
<td></td>
<td>*Examples: Local hawker food - Real differentiation in terms of cooking style and ingredient and imaginary based on packaging.</td>
<td></td>
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</tbody>
</table>
terms of attributes, service, accessibility, branding and packaging.

*Example: Cars*

Cars are deemed to be a means of transportation to carry one from a destination to another. Yet, different brands and models are meant differently to the consumers. From the engine power, the design, safety concerns and even the brand names are different.

As firms do not have high supernormal profits like the oligopoly as there are numerous of firms selling similar products, the differentiation is not prominent.

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**Implications for Profits in the long-run**

<table>
<thead>
<tr>
<th>Output</th>
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<tbody>
<tr>
<td>Rev/Co</td>
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<td>LRMC</td>
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<td>Qe</td>
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<td>0</td>
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<tr>
<td>Output</td>
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</table>

Explain firms are able to retain the supernormal profits in the long-run due to high barriers to entry.

*Figure 1*

From Figure 1, at the profit maximizing output where MC=MR, the firm has a total revenue of 0PbQe and total cost of 0abQe and will earn supernormal profit of Paba.

Explain firms only earn normal profits in the long-run as supernormal profits in the short-run will result in entrance of new firms and the existing firms will experience a drop in demand as consumers turn to substitutes.

*Figure 2*

From Figure 2, at the profit maximizing output where MC=MR, the firm has a total revenue of 0PeAQe and is the same as total cost, 0CAQe, thus earning normal profit.

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**Conclusion**

As a result of no barriers to entry, firms in a monopolistic competition sell slightly differentiated products, and thought they are price-setter and independent, they earn only supernormal profits in the long-run. On the other hand, there are huge barriers to entry in an oligopoly and thus there are a few dominant firms and they are price-setter. As there are few large firms, they are mutually dependent in their pricing strategy and able to retain supernormal profits in the long-run.
(b) Consider different retailers in Singapore and discuss which of these two market structures best explain their market behavior. [15]

Focus on the Application based on what has been analysed in part (a). Students need to apply specific contexts of retail (not manufacturing!) businesses in Singapore for this question.

Schematic Plan

<table>
<thead>
<tr>
<th>Introduction</th>
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<tbody>
<tr>
<td>Retailing refers to the sale of products and services to the final/end consumers.</td>
</tr>
<tr>
<td>Retailing covers a broad spectrum of industries ranging from petrol retailers, telecommunication companies, hawkers to online blogshops.</td>
</tr>
<tr>
<td>Using appropriate examples to discuss whether oligopoly or monopolistic competition best explains the behavior of retailers in Singapore.</td>
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</tbody>
</table>

| Body |
| (I) Oligopoly explains the market behavior of retailers in Singapore. |
| Oligopoly can explain the market behavior of many retailers in Singapore |
| Case 1 – Petrol retailers |
| Case 2 – Telecommunication companies |

| (II) Monopolistic competition explains the market behavior of retailers in Singapore. |
| On the other hand, some forms of retailing exhibit the market behavior of monopolistic competition. |
| Case 1 – hawker food; bubble tea retailing |
| Others – hairdressing/haircuts; beauty salons etc. |

| Evaluation |
| There can be “transition” of market structures in certain cases or an industry with behavior of both oligopoly and monopolistic competition. |

| Conclusion |
| Provide final judgment that oligopoly explains the market behavior of many large retailers in Singapore. Smaller retailers tend to exhibit behaviours of monopolistic competitive firms. |

Introduction

**Key Words**

- Retailing refers to the sale of products and services to the final/end consumers and the retail industry is a major sector of the Singaporean economy.
- Retailing covers a broad spectrum of industries ranging from petrol retailing, telecommunication, hawkers to online blogshops.
- Oligopoly and monopolistic competition are the two common market structures among retailers in Singapore.

**Issue & Approach**

I shall discuss whether oligopoly or monopolistic competition best explains the behavior of retailers in Singapore.

Body

(I) Oligopoly best explains the market behavior of retailers in Singapore

In retail markets where the firms are few and large, I shall highlight 2 good examples found in Singapore context that oligopoly best explains their behavior.

**CASE 1A- PETROLEUM RETAILING**

**Market features:**

- Few large firms relative to market size (e.g., Singapore Petroleum Company (SPC), ExxonMobil, Shell, Caltex)
- Significant barriers to entry (e.g. petrol stations, storage facilities, tank trucks)
- Differentiated (Note: Though petrol itself maybe rather homogeneous, they are sold under different “iconic” brand names and together with different service, they are deemed different by consumers.)
Petrol kiosk chain operators e.g. SPC, ExxonMobil and Shell are notable examples of non-collusive (competitive) oligopolies due to the unique characteristic of mutual interdependence (should be elaborated in part (a)).

Pump prices tend to be "uniform" (PRICE RIGIDITY) at various petrol kiosks throughout the year for the 3 different grades of petrol, 92, 95 and 98.

This price rigidity can be explained using the kinked demand-curve model.

- In the kinked demand theory, it is assumed that rival firms will match any price decrease initiated by any one firm among them, but will not match any price increases.
- If SPC raises the price of its petrol above the current ruling price, rival firms will not follow suit because then they can gain the customers who switch away from buying from the higher-priced SPC. This means that if SPC raises its price, it would experience a more than proportionate fall in its quantity demanded, and thus a fall in its total revenue. Thus, SPC would be reluctant to raise its price.
- However, if SPC were to lower its price, rival firms would lower their prices to prevent loss of their customers and to preserve their market share. SPC would thus experience only a less than proportionate increase in quantity demanded, and it would experience a fall in total revenue. Thus, SPC would be reluctant to lower its price.
- Since any price change results in less total revenue than before, SPC and similarly, any oligopolist would have no incentive to alter the market price.
- If there is no significant change in the marginal cost of the oligopolist, the oligopolist will absorb the higher costs and leave the existing price-output combination unchanged.
- This theory helps to explain the phenomenon of price stickiness or price rigidity under oligopolistic market structures. This is the behaviour in which prices in the oligopolistic industry tend to change very little over time.

**Price-leadership**

However, it does not mean the petrol companies do not change price at all. For example, there was pump price revision once in a while. Why? No explicit collusion (e.g. price fixing or cartel because it is outlawed). But, there seems to be tacit collusion in the form of price leadership. The revision of prices among the various firms occurred within days after one raised its price.

Nonetheless, petrol companies do not compete base on price or revise pricing frequently (usually only when crude oil price is exceptionally high). Usually, they focus on non-price competition.

**Non-Price Competition**

- Instead of price competition, the petrol retailer would focus more on non-price strategies.
- For example, petrol kiosks branding their unique quality of their product as well as offering complementary services like car wash, mini-supermarts; gifts; contests and credit facilities to draw customers.
- Thus, the petroleum retailers' market behaviour adheres to the kinked-demand curve model of a non-collusive oligopoly to a large extent.

**Evaluation**

- However, occasionally wars do erupt or breakout among the retailers especially in a downturn. But again, this is only temporary and last only for a few days. It seems to be more of a publicity stunt than real price-war.
- Other non-price behavior of petrol retailers that strengthen the case of oligopoly: Merger (exxon-mobil in 1999), market penetration (presence of many outlets at key traffic junctions, expressways)

**OR CASE 1B - TELECOMMUNICATION COMPANIES**

**Market features**

- Few large firms relative to market size (Market Concentration Ratio of 3 largest firms of SingTel, Starhub and M1 is close to 100%)
- Significant barriers to entry (e.g. satellites, government license, etc)
- Pricing for basic subscription plan is the same and similar pricing for others.
- Focus on non-price competition such as the quality of reception, joint promotion with mobile phones brand/models, number of incoming calls/SMS, customer loyalty points and lots of advertising.
Evaluation
Nowadays, to make pricing ‘ambiguous’ to the customers, the companies have been trying to bundle services together. Offers such as a ‘promotional package’ of mobile phone line with land-line, internet and pay-TV services are bundled and charge a seemingly attractive pricing.

**Another area that students may want to highlight is that large firms have the ability to practice price discrimination. Refer to Part 4 of the notes.**

*Note: Given time constraint, you may not be able to use another example to further exemplify/substantiate your analysis. So the tip is to use ONE GOOD example to illustrate all the main points (kinked demand curve, price-leadership, price war and non-price competition). Do not choose an example that can only illustrate one point and not the others. Nonetheless, it is acceptable to use different retailers to illustrate different main points.*

(II) Monopolistic competition best explains the market behavior of retailers in Singapore.

Besides big retailers there are small retailers that operate in other industries in Singapore where the market structure resembles monopolistic competitive model rather than oligopoly.

CASE 2A: ONLINE BLOGSHOPS SELLING LADIES APPAREL

- Many blogshops selling ladies apparel in the Internet with insignificant market shares.
- **Low to zero barriers to entry/exit:** Internet start-up costs is minimal – setting a blog is free and the only thing is the knowledge to set up a blog. The cost of the items sold on the internet can be low, depending on the quality and quantity the owner wants to sell. As a result, the cost of exit is low too as sellers can exit without much penalty. She can simply sell the clothes to other sellers, wear the clothes herself or give away as gifts.
- **Slight product differentiation:** Sellers can try to scout for different designs in other countries that cannot be easily found on other blogshops together with customized service such as free delivery, award points for consumer’s loyalty, etc. It can also advertise in different websites.
- As a result, the owners of the blogshops can price independently and prices are not the same for the blogshops. This means, they need not lower price when a competitor lowers its price.
- In fact, even if they were to undercut their rivals the impact is unlikely to be significant as their share of the total market is negligible.
- Typically such firms earn normal profits in the long run limiting their ability to expand the scale of the businesses and to innovate.

OR CASE 2B: CHICKEN RICE SOLD IN HAWKER CENTRES

- Dining at hawker centre is part of the Singapore culture. There are hawker stalls such as chicken rice stalls located in hawker centres spread across Singapore. Each of these stalls has only an insignificant market shares.
- Barriers to entry relatively low (e.g. inexpensive to rent a stall space, buy cooking equipment; usually small family business)
- Product (Services) tend to be slightly differentiated (e.g. in location, different styles of cooking; service etc)
- Price is not the same for every stall.
- As monopolistically competitive firms, their selling point is in “differentiating” their products from those of their rivals e.g. personalized service; good location; yummy chilli sauce, etc

Evaluation
- In some industries, small retailers co-exist with big establishments. Examples, Breadtalk and Four Seasons with huge market shares are found in the midst of the confectionary shops, Jean Yip amongst the beauty salon, etc. In fact, with franchising and internal expansion, more and more traditionally monopolistic competitive industries are turning oligopoly. So we can observe that small firms in these industry just following the pricing of the leaders. And the bigger players do not really compete on price but focus on non-price competition.
- On the other hand, in a monopolistic competitive industry like hawkers, sometimes we observe ‘price war’ which is usually present in an oligopoly. This is especially true if there are a few shops selling similar products in the same vicinity or a new player enters.
Conclusion:
In Singapore, oligopoly best explains the market behaviour of big and mid-size retail enterprises where barriers to entry are high. Economies of scale are extensive, with firms exhibiting mutual interdependence in pricing behavior. For industries where barriers to entry are low and economies of scale are limited, firms exhibiting independence in pricing behavior, the monopolistic competition model seems to be more applicable.

Question 3: TYS N2012 (attempt part (a) only)
Internet or on-line shopping has grown rapidly in recent years. Low barriers to entry have allowed a wide range of small specialised retail firms to market their products on the internet. At the same time economies of scale have led to small number of large internet retail companies dominating the market for other products.

(a) Explain the existence of these two different types of online retailers and which market structure best explains the market behaviour of each of them. [10]

Dissect Question Using the 3’Cs’

<table>
<thead>
<tr>
<th>C – Command word</th>
<th>Explain – make clear the reasons for the presence of small and large on-line retailers and which market structure can be used to classify them</th>
</tr>
</thead>
<tbody>
<tr>
<td>C – Concept (s)</td>
<td>Characteristics of market structures, namely monopolistic competition and oligopoly</td>
</tr>
<tr>
<td>C – Context</td>
<td>Online retailers under different market structures</td>
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</table>

INTRODUCTION
Briefly explain how the internet has revolutionised businesses: Products and services can now be sold via the internet and this greatly reduces the cost of production and makes it easy for many firms to join a particular industry.

This essay will explain the presence of small on-line retailers as well as the existence of big online retailers such as Amazon and eBay.

BODY
1. Reasons for existence of online retailers: Growing demand and lower barriers to entry
2. Two types of online retailers:
   a) Small personalised retail firms: Justify with characteristics of monopolistic competition
   b) Large internet retail companies: Justify with characteristics of Oligopoly

CONCLUSION
Even though internet has greatly reduce the barriers to entry and hence cost, big companies are still able to capitalise on their brand name to build a strong online presence.

Suggested Answers
Introduction
- The internet has lowered the barriers of entry for many small businesses. While the internet has made it easy to set up a business, there is however a limit to which the internet can make markets competitive. It is still possible for on-line large retailers with significant market power as attested by the presence of Amazon; the biggest internet company in terms of sales revenue to co-exist alongside smaller companies.
- This essay will look briefly at the existence of these two types of on-line retailers and explain the type of market structure that fit them.

Body
Growth of online retailers
- Low barriers to entry: Low start-up costs because there is now no need to maintain a shop/ factory space in a shopping centre or mall. To build up a presence in cyber-space only require one to set up a website and one is in businesses; no formidable or cumbersome legal barriers to stop new firms from entering the on-line shopping market.
- Demand factor: Technological advancements have led to the growth of broadband internet connection. With this increased connectivity, it becomes easier to do on-line shopping. At the same time, retailers are also using the latest software/ hardware to reduce the incidences of on-line fraud. This has increased the public’s confidence in shopping on-line. In addition, households are bombarded with many demands; and with this increased demand time pressure, many are turning to the internet to make purchases.
Monopolistic Competitive Markets
- Examples: Highly specialised blog-shops selling a mind-boggling variety of products e.g. fashion accessories, clothes, shoes; handbags; florists; health supplements.
- In reducing the barriers of entry, the internet has resulted in surge of numerous smaller online firms, each with an insignificant market share.
- Products may be “differentiated”: may be imaginary or real.
- Market behaviour aka for pricing and output decisions: Independent pricing and output decisions
- Limited pricing power. No attempt to collude e.g. price-fixing; price leadership or compete aggressively e.g. price wars.
- Firms typically do not spend large sums on branding or R&D, e.g. blog-shops.
- Firms are content to remain small as evident by the absence of mergers & acquisition would be that of a monopolistic competitive firm.

Oligopoly
- Examples: Amazon, eBay and Apple stores
- They are household names, i.e. well-known firms: brand name is a form of barrier to entry and this gives such firms an edge above others.
- Many of these bigger on-line companies are also able to reap the economies of scale in marketing, bulk purchasing and distribution (elaborate) that are not available to smaller on-line retailers. (Note: As these are retailers, refrain from giving inappropriate examples of EOS.)
- Market behaviour – strong branding to maintain market share; price-fixing (Apple accused of price-fixing in the e-reader market); substantial pricing power.
- These explain why it is still possible for large on-line retailers such as Amazon to exist alongside the smaller companies.
- This is because despite the existence of smaller bookstore that may exist to compete with Amazon, it is near impossible to erode Amazon’s dominant position due to the sheer number of titles that it can carry as compared to the smaller bookstore.

Conclusion
Internet shopping market is characterised by the co-existence of both small and big retailers each leveraging on their respective strengths (e.g. choices v economies of scale) and catering to different type of markets (e.g. niche v mass market)

Question 4: 2008 A levels Q2
Firms’ pricing and output decisions depend on barriers to entry and the behaviour of competitors.
(a) Explain why barriers to entry are a key determinant in firms’ pricing decisions. [10]
(b) Discuss the extent to which the behaviour of firms depends in reality on the actions of their competitors. [15]

Recommendations
- This is a manageable Microeconomic question.
- For part (a), candidates that attempted are to link the theoretical concept of barriers to entry to pricing behaviour. In short, the higher barriers to entry, the higher ability to set price. Need to contrast perfect and imperfect competition.
- For part (b), candidates need to link the concept of firm’s interdependence in the oligopoly characteristics and contrast with that of other market structures.

Part (a)
Suggested framework/Outline
Answering the question:
- This difference in the level of barriers to entry determines how firms in the respective market structures set their prices, with a perfectly competitive firm as a price taker and a monopoly as a price setter.
- In general, firms in all market structures set price to profit maximize at MC=MR.
- Important to focus on Long run: because, in theory all firms regardless the market structure can earn supernormal, normal and subnormal profits. It is only in the LR that new firms may be enticed by supernormal profits made by incumbent firms to enter the market or firms may leave if they earn subnormal profits and unable to cover variable costs.

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Summary of key differences in Pricing policy

<table>
<thead>
<tr>
<th>No Barriers to entry (e.g. Perfect Competition)</th>
<th>High Barriers to entry (e.g. Monopoly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price taker</td>
<td>Price setter</td>
</tr>
<tr>
<td>Normal profits in the long run: P = min LRAC</td>
<td>Supernormal profits in the long run: P &gt; LRAC</td>
</tr>
</tbody>
</table>

Introduction:

Key Words

Barriers to entry refer to the various forms of restrictions or obstacles which prevent/deter new firms from entering a market to compete with incumbent firms. They could either be natural (e.g. economies of scale/ownership of key resources) or artificially erected (e.g. legal barriers; branding).

Issue & Approach

The level of competition and hence the market structure is determined to a significant extent by absence or existence of strong barriers to entry. I shall explain why they are a key determinant of a firm’s pricing behaviour in the context of the perfect competition and monopoly.

Body

Number of firms, hence the degree of market power and price setting power in a perfectly competitive industry

In a perfectly competitive market, the non-existence of barriers to entry allows for a large number of firms, each with very limited market power and is a price taker.

Since there are no barriers to entry, new firms can easily enter the market, resulting in a highly competitive market with many sellers. Each seller only has an insignificant market share and hence does not have the ability to set prices. Instead, each perfectly competitive firm becomes a price taker and sells at a profit-maximizing level of output, \( Q_{pc} \) where \( MC = MR \).

From Figure 1, we see that the market demand and supply initially determined the price at \( P_1 \) where demand = supply.

A perfectly competitive firm which is a price-taker was initially enjoying supernormal profits in the short-run where price was set at \( P_1 \), where \( MC = MR_1 \) and \( P_1 \) is above average cost (AC). Such supernormal profit, represented by the area \( P_1 \)abc attracted new firms into the market.

With no barriers to entry in a perfectly competitive market, firms can enter easily to compete away the supernormal profit.

When new firms are attracted into the industry, the market supply increased from \( S_1 \) to \( S_2 \) and the market price fell from \( P_1 \) to \( P_2 \).

Firms will continue entering the industry until each firm charges \( P_2 \) and earns only normal profit in the long-run, with profit-maximizing price \( P_2 \) equals to average cost (LRAC and LRMC).

Similarly, if the firm is earning subnormal profits, some firms will exit the market and market supply will fall until firms earn normal profits again.

The firms are price takers both in the short-run and long-run.

This is unlike a monopolist’s who is a price setter and its long-run profit-maximizing price can be set above AC and MC.
(B) High entry barriers and Pricing behaviour

Conversely, the existence of high barriers to entry protects a monopoly from potential competitors, limiting the market to one sole seller with strong market power to set prices. (e.g. Microsoft for Windows DOS and “office”)

As a result, the industry demand curve is in fact the monopolist’s demand curve, which is downwards sloping demand in Figure 2. This means that a monopolist can lower prices in order to sell more output or restrict its output and sell at higher price, thus showing its ability to set its own price, unlike a perfectly competitive firm which has to be a price taker.

Similarly, a monopolist profit-maximize at MC=MR, with price \( P_1 \) and quantity \( Q_1 \), and profit is \( P_1C_1DB \). This supernormal profit is less likely to be eroded away as there are high barriers to entry and firms can continue to charge a high price and above AC and MC.

Conclusion:
From the above analysis it is clear that barriers to entry play a key role in pricing behaviour of firms in a market. In general, firms will have greater pricing power or market power if barriers to entry are high.

(b) Discuss the extent to which the behaviour of firms depends in reality on the actions of their competitors. [15]

Suggested framework:
Use 2 contrasting models for analysis:
(A) Oligopoly (mutual interdependence in formulating business strategies)
(B) Monopolistic Competition (Moc) (Independence)

Introduction

Key Words
The behaviour of firms refers to the formulation of business strategies or policies in order to compete with rivals in the market. Broadly these strategies revolve around pricing and output as well as non-price strategies such as product development and promotion.

Issue & Approach
In some circumstances firms’ strategies are very much influenced by the actions and reactions of their rivals whereas others could make such decisions independently.

I shall discuss and elaborate using 2 contrasting models viz oligopoly and monopolistic competitive market structures that serve to explain mutual interdependent and independent behaviours by firms respectively.

Body

Thesis: The behaviour of firms depends, in reality, closely, on the actions of their competitors

Explain why, theoretically, oligopolistic firms are the most dependent on the actions of their competitors be it price strategies (rigidity or price-war) or non-price strategies (due to their characteristics)
Few large firms dominating the industry:
\( \rightarrow \) each has a significant degree of market power
\( \rightarrow \) actions of rival firms will affect the sales of other firms which will in turn react to the actions of rival firms.
\( \rightarrow \) substantiate with real world examples – petrol retailing and telecommunication.
\( \rightarrow \) Refer to 2010 Q2b essay plan for details.
Collusive versus Non-Collusive Behaviour
Given the high degree of mutual interdependence (rival consciousness) oligopoly firms might opt to either collude or compete.

<table>
<thead>
<tr>
<th>Non-Collusive models:</th>
<th>Collusive models:</th>
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</thead>
<tbody>
<tr>
<td>Kinked Demand Curve Theory</td>
<td>Price-fixing (cartels) and Price Leadership</td>
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</tbody>
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Oligopolistic firms try to avoid price wars as suggested by the kinked demand curve theory due to possible fall in TR: firms engage in non-price competition (substantiate with real world examples – similar rewards and loyalty programmes by different petrol companies & aggressive advertising by SingTel & M1)

Note: Price Wars may erupt occasionally, when the market becomes too small /overcrowded with too many players e.g. recession or economic downturn.

Anti-Thesis 1: The behaviour of firms does not depend closely on the actions of their competitors

Explain the existence of other types of market structures (monopolistic competition & monopoly) where firms may not be dependent on the actions of their competitors

Monopolistic Competitive firms – independent of other’s behaviour
• There are many monopolistically competitive markets such as hawker food and optical shops. For instance, hawker food stalls in Singapore, each with very insignificant market power and sells differentiated products, are much less mutually independent.
• Refer to 2010 Q2 essay plan for details

Evaluation:
• Monopolistic Competitive firms – may be dependent on rival’s behaviour
• Unlike as proposed in theory, the behaviour of these firms can be dependent on the actions of competitors if the shops are within vicinity and there is a lack of real product differentiation.
• Occasionally, we do see hawkers trying to follow each other’s price cut. Nonetheless, it is usually temporary.
• Conceptually, these hawkers may be behaving like “localized oligopolists” (market defined as the neighbourhood not the country Singapore)

Anti-thesis 2: Other factors other than competitors’ behavior can affect firms’ price & output decisions.
• Constraints of location, funding, small & niche markets, etc., preventing firms from maximizing profits. Some firms may choose to remain small (keep output low).
• Government policies such as price controls and regulations. Explain how government regulations such as AC & MC pricing affect the P&Q of firms. (Refer to Part 4 of Market Structure.)

Conclusion:
In reality the behaviour of firms in formulating business strategies depends on the actions of rivals if there is a high degree of mutual interdependence or rival consciousness. This is most evident in an oligopolistic market where the market is dominated by a few big firms, each with a significant market share. In such a market the actions of one firm may pose a significant threat to sales of other rival firms. Thus they cannot afford to ignore the actions of their competitors!