



# SAMPLE FOR 70+DI

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# ECON1194 - PRICES AND MARKETS ASSIGNMENT 1 -MARKET EQUILIBRIUM ANALYSIS

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Course code	ECON1194
Course name	PRICES AND MARKETS

## Question 1:

My product A was Natural Gas, for product B I chose Coal for related products as both of them are used for generating thermal energy.

Date	Coal	Natural Gas
2020-01-01	72.11	3.63
2020-02-01	71.05	3.00
2020-03-01	70.20	2.79
2020-04-01	64.62	2.08
2020-05-01	54.15	1.46
2020-06-01	55.00	1.65
2020-07-01	51.67	1.64
2020-08-01	51.38	2.61
2020-09-01	52.01	3.85
2020-10-01	58.07	4.81
2020-11-01	62.95	4.78
2020-12-01	80.59	5.83
2021-01-01	91.00	7.30
2021-02-01	92.49	6.17
2021-03-01	95.23	6.21
2021-04-01	97.85	7.28
2021-05-01	104.21	9.00
2021-06-01	132.15	10.32
2021-07-01	153.20	12.52
2021-08-01	173.57	15.28
2021-09-01	188.12	22.23
2021-10-01	240.73	29.81
2021-11-01	177.80	27.38
2021-12-01	181.47	37.36
2022-01-01	231.76	27.89
2022-02-01	272.49	26.98
2022-03-01	353.44	41.73
2022-04-01	334.72	31.99
2022-05-01	418.49	27.46
2022-06-01	427.42	32.91
2022-07-01	433.63	51.15
2022-08-01	447.45	69.98
2022-09-01	467.78	55.18
2022-10-01	426.91	20.81
2022-11-01	368.26	28.79
2022-12-01	427.69	35.37
2023-01-01	404.54	19.89
2023-02-01	244.21	16.74

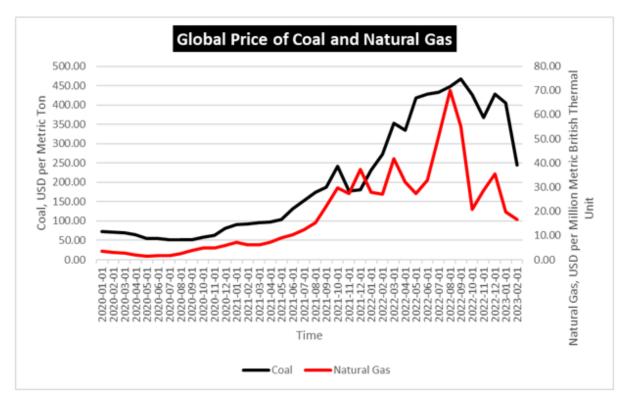


Figure 1: Global Price of Coal and Natural Gas from 2020-2023, present monthly Source: FRED 2023

Figure 1 shows that both prices of Coal and Natural Gas have a quite similar pattern and a same increasing trend from 2020 to 2023. From the beginning of 2020 to October 2021, they both increased steadily. Until that, while both products' prices increase, the price of Natural Gas is more volatile than Coal. From February of 2022, the prices both increased rapidly, which is caused by the Ukraine-Russia war I have analyzed before. Starting from August 2022, the price of both products decreased due to the weather warmed up and wind power production has increased to support the energy supply (VTV 2023).

When one product can do the job of another, we say that thing is a substitution. If a person has access to more of one good, they will need less of the other. As natural gas and oil are sources of energy, people can either choose gas or oil for generating heat and energy (GasVessel 2018). By that, Coal and Natural Gas are substitute products. There is a negative link between demand and the need for alternatives. If people use one product, they won't need to use the other as much. However, there is a positive link between alternative product demand and price. Therefore, if the

price of one good goes up, consumers will seek a cheaper alternative (CFI 2022). The below curve will evaluate further.

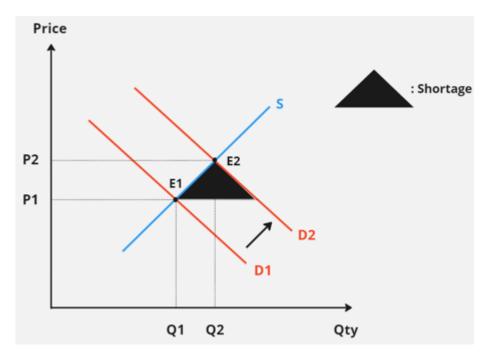


Figure 2: Supply Demand curve after the increasing price of Natural Gas

Higher price of Gas leads to the change in consumer behavior. They will change to use coal, then the demand for gas decreases and demand for coal increases, shifting D1 to the right to D2. Ceteris paribus, gas price increase will not affect the supply side of both products, the new equilibrium between D2 and S is E2, increasing the price of coal, due to the shortage.

Consumer surplus occurs when the amount that consumers are willing to pay for an item or service exceeds the actual price they pay. According to Pettinger (2018), consumer surplus refers to the extra benefit that consumers derive from paying a price lower than their willingness to pay. Producer surplus refers to the aggregate benefit that a producer receives from the production and sale of a given quantity of a commodity at the prevailing market price (Mishan 1968).

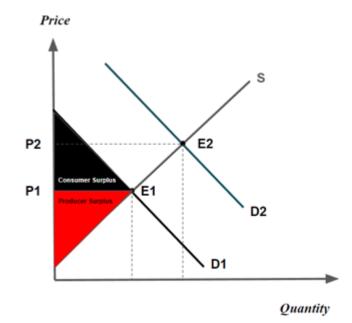


Figure 3: PS and CS of Coal before the price shock

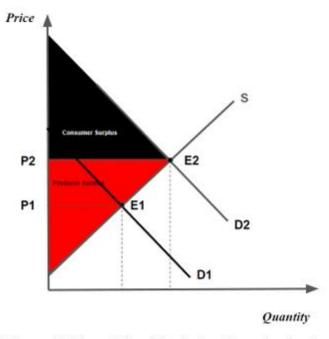


Figure 4: CS and PS of Coal after the price shock

According to Figure 4, after the increase in price of Natural Gas and also Coal, both the PS and CS expand wider, because consumers now are willing to pay at a higher price and producers can

sell their product at a higher price. By this, producers will gain more benefit because they can set a higher price and increase their profit (assuming the production cost remains).

#### Question 2: Motorbike Parking services

For the Motorbike Parking Space in Vietnam, there are many places that consumers can find easily. Most popular motorbike parking service in Vietnam is open-space parking, it is often on the sidewalk, near the hospital, under the bridge, etc (Dat 2023). There are also parking spaces for megamall, hospital and other private parking spaces. Moreover, Saigon people open motorbike parking services in their house (SPMGroup 2019). However, the number of motorbike parking services is not enough to satisfy the demand of Vietnamese people (Phap Luat 2021). The demand for motorbike parking services in Vietnam is huge, Vietnam is ranked 2nd in the ASEAN for buying motorbikes (VnExpress 2022), and the supply still cannot satisfy that.

While there is a lot of parking space, their service is still homogenous to guard for customer's motorbikes. However, each firm can provide some updates to distinguish their services, such as modern motorbike parking spaces with security cameras, e-ticket parking, parking pay with credit card (in RMIT SGS Campus) (Megaparking 2022). By that, each firm will have different prices for parking services due to the parking space upgrades. Apart from prices, firms also compete on non-price factors such as: services quality and location.

The concept of "barriers to entry" pertains to the field of economics and business, and refers to various factors that may hinder or obstruct the entry of new players into a given market or industry, thereby restricting the level of competition. Barriers to entry in a particular industry may manifest as significant initial investment requirements, regulatory complexities, or other impediments that impede the ability of potential new entrants to penetrate the market (Hayes 2021). For the motorbike parking market, the barrier to entry is low due to low set up cost and easy regulations. With the minimum of 50 million VND of start-up costs, a person can open a motorbike parking space (Võ 2020), or they just open a parking space in their house as I said before. In order to operate a motorbike park, the management establishment needs to apply for a security and order permit and a fire prevention and fighting license (Luat Minh Khue 2022).

Motorbike Parking prices of different Parking Spaces in HCMC		
23/9 Park - Parking Space	3,000 VND	
Thanh My Loi Parking Space	5,000 VND	
Calmet Bridge Parking Space	3,000 VND	
Thanh Thuy Parking Space (District 7)	7,000 VND	
Xuan Dong Parking Space (Binh Tan Dist)	5,000 VND	
Thuan Kieu Plaza	5,000 VND	
ViVo City	4,000 VND	
Parkson	7,000 VND	
Rex Hotel (Center)	10,000 VND	
Diamond Plaza	5,000 VND	

Table: Motorbike Parking price in HCMC

Source: Anh 2022, Megaparking 2023, ViVo City 2023, Tuoi Tre 2021

The price observed above is also from my real-life experiences (for ViVo City and Thuan Kieu Plaza).

In a monopolistic competitive market, several different companies provide similar but not identical goods and services to consumers. Low entry barriers define monopolistically competitive sectors, and businesses' activities inside the industry have little to no effect on their rivals. Companies compete with one another by offering varying prices and advertising campaigns (Chappelow 2020). With this definition and my analysis above, motorbike parking services in Vietnam can be considered in a monopolistic competition.

According to my research and interview with TNXP Corp, the prices of a motorbike parking space would have variable and fixed costs.

A fixed cost is a corporate expenditure that remains constant regardless of the volume of goods or services produced (Hayes 2022). For a motorbike parking space, its fixed costs would be the rent for the land, salaries of guards in the parking space (According to TNXP's staff, they recorded about 5 million VND per month). For the rental cost, they did not provide me and there is a lack of source of this.

One kind of business expenditure is known as "variable costs," and it varies as the volume of output or sales does (Kenton 2021). For the variable costs, TNXP reported that they just need to care about the insurance for each motorbike they damaged or lossed and income taxes.

For the price assumption, it is difficult to assume the cost structure for a parking service firm because the fixed cost is unknown, the variable cost is based on taxes and insurance for damaged/loss motorbike (it rarely happens). By that, I will draw the Cost Curve based on economic theories.

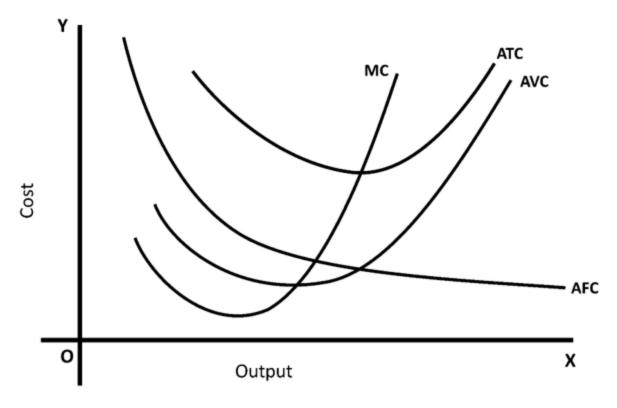


Figure 5: Cost Curve of Motorbike Parking Service

The marginal cost (MC) curve is a graph that shows how the marginal cost changes as the company makes more or less of its product (StudySmarter 2023). The price per unit of input variables used to generate products or services is known as the average variable cost. It changes in direct proportion to production level. As production rises, the AVC decreases until it reaches a minimal value (Srivastav 2019). The average fixed cost (AFC) is the fixed cost that remains constant regardless of how many products and services a firm produces (Indeed 2023). Average Total Cost (ATC) is the sum of AFC and AVC.

Except AFC is a decreasing-line, other costs usually have a U-shape. This can be explained by the law of diminishing marginal returns. When one element is fixed, employing new factors of production eventually results in a comparatively smaller rise in output, and diminishing returns happen in the short term (Pettinger 2014). At the diminishing point the curve will increase, the more output, the higher the cost.

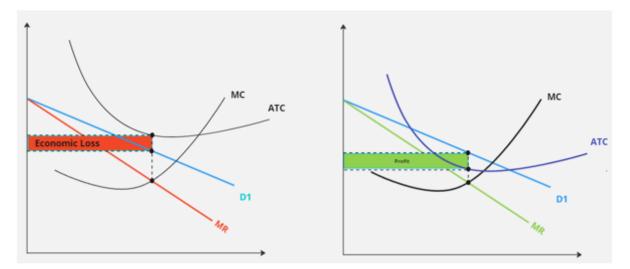


Figure 6: Economic Profit vs Economic Loss in Short-Run

In the short term, monopolistically competitive firms maximize profit or minimize losses by producing the quantity where MR-MC. The company will benefit if ATC is below market pricing. If the ATC exceeds the market price, the business loses.

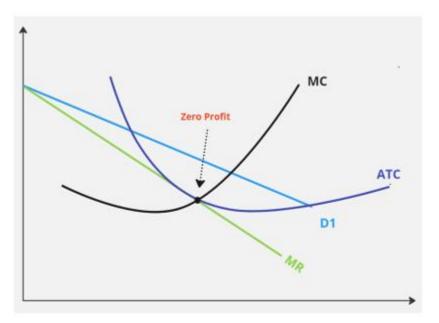


Figure 7: Profit in Long-Run

Monopolistic competition generate at minimal cost and income in the long term. Other firms joining the market will move the demand curve left. Competition reduces demand for a company's

goods, shifting the demand curve. Long-term economic profit for monopolistic competitors is zero. New industry entrants have little motivation (CFI Team 2022).

COVID-19 pandemic has affected the world economy and alo Vietnam a lot. The Government and the Prime Minister decided to apply measures to restrict the number of vehicles, request people not to leave their places of residence for a certain period of time, in a number of necessary areas and areas (VietnamPlus 2021). This has reduced the demand for people to go outside, leading to the decrease in the demand for motorbike parking.

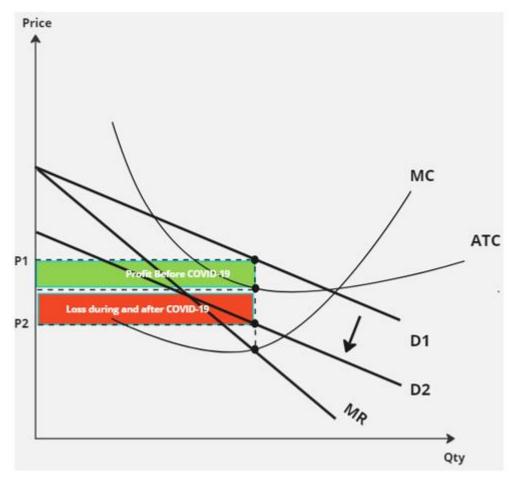


Figure 8: Effect of COVID-19

Figure 8 elaborates that, reducing in demand shifts D1 left to D2, the point where MR=MC now below the ATC, leading to the loss of firms. Because people cannot go outside, many parking spaces have to be shut down during COVID-19 (VOV 2021).

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