



RAFFLES INSTITUTION
2020 YEAR 5 PROMOTION EXAMINATION
Higher 2

ECONOMICS

9757/01

Paper 1 Case Study

23 September 2020

1 hour 10 minutes

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name, index number and civics class on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for diagrams, graphs or rough working.
Do not use paper clips, highlighters, glue or correction fluid.

Answer **all questions**.

The number of marks is given in brackets [] at the end of each question or part question.

Name: _____

Civics Class: _____

Economics Tutor: _____

Question	Marks
1	/30

This document consists of **5** printed pages and **1** blank page.



Raffles Institution

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Question 1 Long Term Trends in Transportation Technology

Extract 1: Unwelcome Concentration in the Ride-Hailing Market

The Competition and Consumer Commission of Singapore (CCCS) has issued an Infringement Decision against Grab and Uber in relation to the sale of Uber's Southeast Asian business to Grab for a 27.5% stake in Grab in return (the Transaction). The Transaction was completed on 26 March 2018. CCCS found that the Transaction has led to a substantial lessening of competition in the provision of ride-hailing platform services in Singapore. CCCS commenced an investigation on the basis that the Transaction may have infringed the Competition Act as an anti-competitive merger. The Transaction has removed Grab's closest competitor in ride-hailing platform services, namely Uber.

CCCS has received numerous complaints from both riders and drivers on the increase in effective fares and commissions by Grab post-Transaction e.g. via a decrease in the amount and frequency of rider promotions and driver incentives. Indeed, CCCS has found that effective fares have increased between 10% and 15% post-Transaction.

Potential competitors are hampered by exclusivities and cannot scale to compete effectively against Grab. CCCS finds that Grab currently holds around 80% market share. Despite recent entry by several small players, their market shares remain insignificant. CCCS's investigation found that strong network effects make it difficult for potential competitors to scale and expand in the market, particularly given that Grab had imposed exclusivity obligations on taxi companies, car rental partners, and some of its drivers. Grab's exclusivities hamper the ability of potential competitors to access drivers and vehicles that are necessary for expansion in the market.

Source: Competition and Consumer Commission of Singapore, 2018

Extract 2: Uber's Foray into Autonomous Technology

Uber has been struggling. Dara Khosroshahi's (Uber's CEO) goal is to get Uber to profitability by 2021. And the sharpest arrow in the company's arsenal to achieving profitability is also the least understood - Uber's self-driving unit, the Advanced Technologies Group (ATG).

So why the optimism around self-driving, especially for a money losing ride hailing platform like Uber? The driver represents the single largest expense in non-autonomous ride-sharing at 80% of the total per mile cost. By removing the driver from the equation, fully autonomous vehicles dramatically lower the cost of a ride while boosting its addressable market. Already offering software as a service, Uber plans to take the bet further by making the cost of rides so low (between its fleet of human and robot cars) that vehicle ownership becomes obsolete. The goal is to create a cheaper, better and safer automated option for consumers using Uber's ride-hailing service and, to achieve this, the technology has to pass through three stages: developing, piloting and commercialization. Uber's ATG unit is currently in the development stage. Cheaper means reducing the cost per mile of a self-driven ride to below that of an UberX ride today. A goal that's still "ways off," according to Uber ATG's spokeswoman. Better indicates making the ride a luxurious experience while reducing customer wait times. To this end Uber, partnered with Volvo and Toyota to co-engineer what could be the most "opulent" self-driving ride experience on the market. Goal three, and probably the most important for Uber's ATG unit, is safety, which could make or break the company's self-driving ambitions. Regulators could also cause delays over safety concerns.

But competition is building fast around the company with Waymo, GM and several others all working on self-driving technology. Uber's strategy is to be selective about where it launches

self-driving cars. Instead of launching everywhere, Uber plans to map pockets of various cities that fit the most favorable profile for a self-driven vehicle, taking factors like weather, population density and road conditions into account. This is also where Uber outshines the likes of Tesla or GM's Cruise unit, which do not have comparable riding data to leverage. An opportunity for Uber, as it analyzes its own ride-hailing usage patterns to identify opportunities most conducive for the self-driving unit to offer a self-driven ride that's cheaper than riding with a human.

Source: Adapted from CNBC, 28 January 2020

Extract 3: Boost for electric vehicles in move to reduce pollution

In declaring its ambition to phase out internal combustion engine (ICE) vehicles within the next 20 years, Singapore will make electric vehicles (EVs) more attractive from next year. The Singapore government has said that it sees climate change as an existential threat. In the Budget 2020 speech, Deputy Prime Minister Heng Swee Keat outlined a slew of measures aimed at incentivising the use of more environmentally friendly alternatives, such as EVs.

These measures include:

- An early adoption incentive scheme that will be rolled out for EV buyers from 2021 to 2023. It will offer a 45 per cent subsidy on the car's Additional Registration Fee, capped at \$20,000 per vehicle.
- Singapore will expand the EV charging infrastructure significantly from 1,600 points now to 28,000 by 2030.

But as excise duty from fuel sales contributes around \$1 billion a year to tax coffers, Mr Heng said the Government will introduce a six-monthly lump sum tax for EVs from 2021, starting at \$100, then \$200 in 2022, and \$350 from 2023 onwards.

Mr Glenn Tan, managing director of Tan Chong International, said: "Globally, manufacturers have been moving towards less pollutive vehicles, but the cost of adoption has been prohibitive. The increased subsidy will encourage more people to adopt cleaner vehicles quicker, with the lower cost of ownership."

Mr Victor Kwan, managing director of Wearnes Prestige Division added, "The move to build 28,000 charging points "will truly make a difference", even if it takes 10 years and the market will evolve - just like the taxi market evolved from diesel to hybrid models which will be positive for the environment."

However, even with the incentives, the switch over to EVs in Singapore is likely to be a gradual one for several reasons, said Associate Prof Theseira of Singapore University of Social Sciences. Among them is that there is still not a wide enough variety of EVs to meet the demands of motorists, with most buyers looking out for sports utility vehicles or minivans instead of the "niche" models automakers offer. In addition, the finer details of where charging points are located and how quickly a car can be charged also needs to be worked out to ensure a network of 28,000 can meet the demand from motorists, he said.

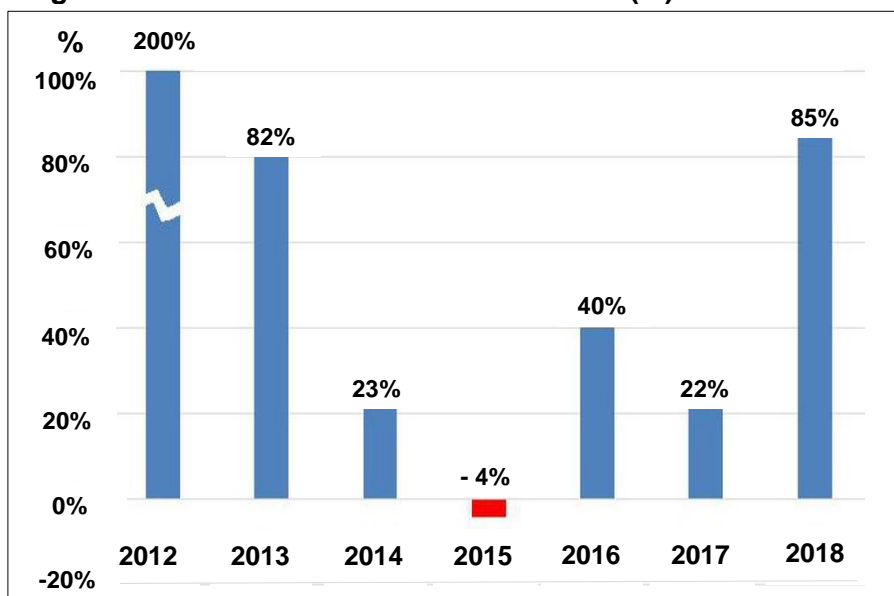
Source: The Straits Times, February 2020

Extract 4: US Sales of Electric Vehicles

In June 2019, conventional SUVs and light trucks were the most popular vehicles in America accounting for 70% of sales. They also got more expensive, an increase of 2% compared to last year. Yet electric vehicle (EV) prices keep dropping. There resulted in much cheering in

2018 when EVs hit a US sales record of 361,000. Long-term forecasts of EV sales are typically smooth. In reality, there is considerable variation.

Figure 1: US Electric Vehicle Sales Volume (%) Year-over-Year



Source: Alternative Fuels Data Center & Inside EVs

Most of that is thanks to Tesla's success selling the Model 3, which has a starting retail price of \$38,990 before incentives. Tesla now dominates the EV market with nearly 80% of EV sales in the US. Data analyzed by research house Cox Automotive show EV prices dropped by 13.4% decline over the previous year. The drop would be even more pronounced if it were not for the fact that most legacy carmakers are still focusing on rolling out luxury EVs, such as the \$74,800 Audi e-tron.

With only 2% of total US sales, the mass-market for EVs envisioned by Tesla CEO Elon Musk is still a dream. But it is growing—though how fast it grows depends on cost. Cheaper batteries, more models, and economies of scale as manufacturers ramp up assembly lines will continue to drive down EV prices and spur demand.

Car buyers outside the luxury market are famously price-sensitive and flock to more fuel-efficient models as soon as economic trouble hits. With the stock market sliding, and average fuel-efficiency rules mandating 54.5 miles per gallon set to take effect by 2025, EVs may soon have their moment in the sun.

Source: Various

Questions:

- (a) (i) Explain the market structure that best represents ride-hailing services after the merger in Extract 1. [2]
- (ii) Comment on how commuters could be affected by the merger above. [4]
- (b) Discuss the extent to which Uber is likely to benefit from the development of autonomous self-driving technology. [8]
- (c) (i) Describe the trend of electric vehicles (EV) sales volume in the US from 2012 to 2018. [2]
- (ii) Using economic analysis, account for the overall trend. [4]
- (d) Extract 3 mentions that usage of internal combustion engine (ICE) vehicles has resulted in worsening air quality.
- Discuss whether subsidising the use of electric vehicle (EV) is appropriate to correct the market failure the above. [10]

[30 marks]

Copyright Acknowledgements:

Extract 1 © Competition and Consumer Commission, <https://www.cccs.gov.sg/-/media/custom/ccs/files/media-and-publications/media-releases/grab-uber-id-24-sept-18/media-release-id-against-grab-and-uber-24-sept-18.pdf?la=en&hash=84D65C6CEE645EDAC4C9C20146C1442C6DF5FA83>

Extract 2 © CNBC, 'Uber's self-driving cars are a key to its path to profitability', <https://www.cnbc.com/2020/01/28/ubers-self-driving-cars-are-a-key-to-its-path-to-profitability.html>

Extract 3 © The Straits Times, 19 February 2019, 'Boost for electric vehicles in move to reduce pollution', <https://www.straitstimes.com/singapore/transport/boost-for-electric-vehicles-in-move-to-reduce-pollution>

Extract 4 © Forbes, 18 November 2019, '<https://www.forbes.com/sites/uhenergy/2019/11/18/whats-happened-to-us-electric-vehicle-sales/#71bca6787909>', and Quartz, 27 August 2019, '<https://qz.com/1695602/the-average-electric-vehicle-is-getting-cheaper-in-the-us/>'

Figure 1 © Forbes, 18 November 2019, Data from Alternative Fuels Data Center and Inside EVs