ANTI-COMPETITIVE MERGERS IN TWO-SIDED DIGITAL PLATFORM MARKETS

The Case of Uber–Grab

Digital platforms pose a number of challenges to regulators around the world. In particular, markets where digital platforms operate tend towards monopolies due to strong network effects, large economies of scale and scope, close to zero marginal costs and increasing returns to the use of data. On the other hand, ostensibly anti-competitive conduct by traditional businesses may in fact be innocuous or even welfare-enhancing when initiated by digital platforms due to their "two-sided" nature. This article critically evaluates the recent infringement decision of the Competition and Consumer Commission of Singapore regarding Uber's sale of its Southeast Asian business to Grab pursuant to the contemporary law and economics literature on two-sided digital platforms. Unfortunately, "one-sided" competition analysis continues to be erroneously applied to digital platforms with a "two-sided" nature. Some proposals on how merger control should be reformed in light of these deficiencies are also provided.

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I. Introduction

1 The broad range of economic activities related to the use of digitised information and knowledge has been a major driver of economic growth in the 21st century. Known as the "digital economy",

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these activities are set to increase Singapore's gross domestic product by as much as S$13.5bn in 2021.[2] Digital technologies are becoming increasingly pervasive in everyday life – today, consumers need only tap their smartphones to order a meal, book a ride or pay a bill. Such advancements have also radically transformed the way consumers engage with written work, music, games and movies. Most content is consumed online these days, with online purchases of digital content replacing brick-and-mortar sales.[3]

2 The meteoric rise of digitalised content has accompanied the rapid ascent of digital *platforms*, which harness technology to bring together two or more distinct groups of customers.[4] Digital platforms co-ordinate the actions of customers, creating value for them in a way which customers cannot readily obtain without these platforms.[5] Thus, an important characteristic of digital platforms is their "two-sidedness" – that is, they act as an intermediary bridging two or more sets of users.[6] For example, digital operating systems like "Windows" offered by Microsoft bring together application developers and users by providing a common interface for developer-user interaction, thereby reducing the costs of product development and ameliorating the difficulties associated with hardware selection.[7] Many of these platforms have been established by massive conglomerates with ubiquitous names: Google, Facebook, Amazon and Apple are some that come to mind. As of 2019, the four companies have a combined market capitalisation of more than US$4trn.[8]

3 Despite providing economic benefits, digital platforms raise new regulatory challenges. In recent years, some antitrust scholars have argued that these platforms are decreasing effective competition, with

2 Tang See Kit, "The Rise of the Digital Economy: What Is It and Why It Matters for Singapore" *Channel NewsAsia* (13 January 2020).

3 Gerhard Illing & Martin Peitz, *Industrial Organisation and the Digital Economy* (MIT Press, 2006) at p 1.

4 Øystein Foros, Hans Jarle Kind & Lars Sørgard, "Merger Policy and Regulation in Media Industries" in *Handbook of Media Economics* vol 1 (Simon Anderson, Joel Waldfogel & David Strömberg eds) (North-Holland, 2015) ch 6 at pp 228–229.

5 Øystein Foros, Hans Jarle Kind & Lars Sørgard, "Merger Policy and Regulation in Media Industries" in Handbook of Media Economics vol 1 (Simon Anderson, Joel Waldfogel & David Strömberg eds) (North-Holland, 2015) ch 6 at pp 228–229.

6 Øystein Foros, Hans Jarle Kind & Lars Sørgard. "Merger Policy and Regulation in Media Industries" in Handbook of Media Economics vol 1 (Simon Anderson, Joel Waldfogel & David Strömberg eds) (North-Holland, 2015) ch 6 at p 228.

7 David S Evans, Andrei Hagiu & Richard Schmalensee, *A Survey of the Economic Role of Software Platforms in Computer-Based Industries* (CESifo Working Paper No 1314, October 2004) at pp 12–14.

8 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 6.

some describing Amazon and Google as monopolistic giants that rival Standard Oil and US Steel in the Gilded Age.[9] In particular, markets where digital platforms operate tend towards monopolies due to strong network effects, large economies of scale and scope, close to zero marginal costs, as well as increasing returns to the use of data.[10] On the other hand, other scholars have noted that ostensibly anti-competitive conduct by traditional "one-sided" businesses may be innocuous or even welfare-enhancing when initiated by digital platforms due to their "two-sided" nature.[11] As an example, the sale of a product for free may be a profit-maximising strategy for a two-sided platform, rather than an attempt to predate.[12]

4 In the US, several commentators have suggested that contemporary US antitrust law has failed to protect consumers in this arena, with courts and antitrust authorities still strongly influenced by the non-interventionist bent of "Chicago School" economics.[13] Thus, it comes of little surprise that a recent report by the Stigler Center for the Study of the Economy and the State contended that these platforms have "largely avoided any regulation" thus far.[14] The report noted that unlike other countries, no US government committee was formed to address the antitrust issues arising from dominant digital platforms.[15] Across the Atlantic, perhaps in part due to its ordoliberal roots, competition enforcement in the European Union ("EU") is far more interventionist.[16] However, courts and competition regulators there have not done much better where two-sided platforms are concerned – confusion continues to reign in competition law cases concerning such platforms. In *Groupement*

9 Tim Wu, *The Curse of Bigness: Antitrust in the New Gilded Age* (Columbia Global Reports, 2018) at p 8.

10 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at pp 7–8.

11 Julian Wright, "One-sided Logic in Two-sided Markets" (2004) 3(1) *Review of Network Economics* 44 at 45–51.

12 Julian Wright, "One-sided Logic in Two-sided Markets" (2004) 3(1) *Review of Network Economics* 44 at 51.

13 Jonathan B Baker, *The Antitrust Paradigm: Restoring a Competitive Economy* (Harvard University Press, 2019) at p 62.

14 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 6.

15 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 6.

16 Wernhard Möschel, "The Proper Scope of Government Viewed from an Ordoliberal Perspective: The Example of Competition Policy" (2001) *Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift Für Die Gesamte Staatswissenschaft* 3 at 5–6.

des Cartes Bancaires,[17] for instance, the European Court of Justice held that the General Court erred in law in failing to consider the interactions between the two sides of the market, as well as the indirect network effects present in the two-sided payment systems market.

5 As a relatively late adopter of competition policy, Singapore does not face the same ideological constraints faced by the antitrust authorities in both the US and the EU. As Tan has noted, Singapore's regulatory policies tend to adopt a pragmatic and instrumentalist approach, eschewing ideology in favour of rational, evidence-based reasoning.[18] Indeed, competition policy in Singapore resembles what Ayres and Braithwaite have termed "responsive regulation" – the Competition and Consumer Commission of Singapore ("CCCS") adopts a framework of collaborative capacity building, while retaining the capability to escalate regulation to tough enforcement.[19] Reflecting this ethos, the CCCS regularly accepts commitments by firms to address anti-competitive conduct, acknowledging that these firms are not liable under the Competition Act[20] where such commitments are accepted.[21]

6 In 2018, the CCCS had the opportunity to examine several novel issues that arose in a merger between two digital platforms, Grab and Uber.[22] Both of these platforms engaged in, *inter alia*, ride-hailing – the matching of drivers and riders[23] for the provision of booked chauffeured point-to-point transport ("CPPT") services.[24] The transaction entailed Grab's acquisition of certain assets, employees, contracts and data from Uber and its subsidiaries in Southeast Asia ("SEA").[25] These assets related to all of Uber's businesses in SEA, including the provision of intra-city transport facilitation and food delivery services excluding its intellectual property other than the data of riders, driver partners, UberEats

17 Joined Cases T-39/92 and T-40/92 *Groupement des Cartes Bancaires "CB" and Europay International SA v Commission* (judgment of the Court of First Instance dated 23 February 1994) at [71]–[74].

18 Kenneth Paul Tan, "The Ideology of Pragmatism: Neo-Liberal Globalisation and Political Authoritarianism in Singapore" (2012) 42(1) *Journal of Contemporary Asia* 67 at 76–79.

19 Ian Ayres & John Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (Oxford University Press, 1992) at pp 4–7.

20 Cap 50B, 2006 Rev Ed.

21 Competition Act (Cap 50B, 2006 Rev Ed) s 60B.

22 *Sale of Uber's Southeast Asian business to Grab in consideration of a 27.5% stake in Grab* CCCS 500/001/118 (24 September 2018) (hereinafter "CCCS ID").

23 In this context, drivers (as service providers) would constitute one set of users on one side of the platform, while riders (as consumers) would constitute another set of users on the other side of the platform.

24 CCCS ID at [54].

25 CCCS ID at [21].

merchants, eaters and couriers.[26] In consideration for these assets and other benefits, Uber received a 27.5% equity share in Grab.[27] Ultimately, the merger led to the exit of Uber from the ride-hailing market.

7 The transaction attracted considerable media attention. Prior to the CCCS's decision, numerous op-eds were written on the matter. Some were in favour of aggressive intervention to prohibit the transaction, while others militated towards a more *laissez-faire* approach.[28] On 24 September 2018, the CCCS finally released its long-awaited infringement decision ("ID") issuing a S$13m financial penalty against the parties for infringing s 54 of the Competition Act. A series of remedial directions were also issued against the merged entity, Grab. These remedial measures required Grab to, *inter alia*, remove any exclusivity obligations with regard to its drivers, maintain its pre-transaction pricing on its platform, and to remove any restriction on the acquirers to whom its car rental company, Lion City Rentals, could be sold.[29]

8 In this article, the CCCS ID regarding Uber's sale of its SEA business to Grab will be critically evaluated. Although the CCCS's decision is laudable in many ways, it is argued that conceptual confusion remains regarding the two-sided nature of the merging platforms. In particular, the CCCS failed to distinguish the *transaction price* that riders faced on the platforms from the *platform fees* that *both* riders and drivers pay to use the platforms.[30] The two-sided nature of the ride-hailing platforms involved is most apparent when one considers the fact that riders were paying *negative* platform fees for some trips on the platforms, in contrast to the corresponding drivers who were paying *positive* fees for the very same trips. Indeed, much of the transaction price paid by a given rider is in fact a zero-sum transfer to the driver undertaking that trip. Thus, the indirect network externalities in ride-hailing platforms affect not only the potential entry of the platforms' competitors[31] but also the *pricing*

26 CCCS ID at [21], as well as excluding Viet Car Rental Company Limited, Uber Philippines Centre of Excellence LLC and Lion City Rentals.

27 CCCS ID at [21].

28 See, *eg*, Kenneth Cheng, "The Big Read: Why the Grab-Uber Deal is Making Some Uneasy" *Today* (7 April 2018); "Most Commuters Think Grab-Uber Merger should be Reviewed or Rejected: Survey" *Today* (31 March 2018); Donald Low, "Taking an Ecological Perspective to Competition Policy" *The Straits Times* (11 August 2018); and Kenneth Khoo & Yang Nan, "How to Level Playing Field for Potential Rivals to Grab" *The Straits Times* (3 April 2018).

29 CCCS ID at [372].

30 See paras 24–31 below.

31 CCCS ID at [189].

structure (*ie*, the ratio of rider platform fees to driver platform fees) of these platforms.[32]

9 Several related issues arise from this central observation. First, if competition law is to pursue welfarist objectives,[33] then the ultimate question for the competition regulator is whether the merged platform would have the incentives to raise one or both platform fees relative to a counterfactual where the merger does not take place.[34] Notably, this comparison is largely *independent* of the transaction price involved. In this context, the *nature* of the indirect network externality in the two-sided platform is critical. As the network externalities here are *positive*, it is easy to show how the externalities reinforce the merged entity's unilateral incentives to raise one or both platform fees, similar to how a traditional one-sided merged entity has the unilateral post-merger incentives to raise prices.[35] However, the same is not true where the network externalities are negative. Here, a platform may have incentives to reduce one or both platform fees post-merger.[36] Unfortunately, the CCCS did not consider the two-sided nature of the markets in the ID. Instead, it conflated the notion of an "effective" transaction price with the two distinct platform fees at hand.[37]

10 Second, in defining markets where two-sided platforms are involved, the competition regulator should consider how the nature of platform competition differs from more traditional forms of competition in one-sided markets. Here, the crucial aspect of the ride-hailing market is that of its nature as an *exchange*.[38] In exchange markets, platforms collect fees from each side simultaneously for a given transaction. As any isolated analysis of the incentives to raise fees on just one side of the platform must be incomplete, the CCCS was correct in defining a single

32 See paras 24–31 below. See also Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1250–1251.

33 This reflects the orthodox view that competition policy should pursue economic efficiency as its primary objective. See Kenneth Khoo & Allen Sng, "Singapore's Competition Regime and Its Objectives: The Case against Formalism" [2019] Sing JLS 67 at 78–90 for an argument of this principle in Singapore's context.

34 The sum of both platform fees (charged to both users) is known as the "fee level". Raising one or both platform fees without reducing at least one fee will raise the fee level. See paras 24–31 below.

35 See paras 19–31 and paras 54–65 below. Some of these technical terms, such as "unilateral effects" and externalities", will be defined later.

36 See paras 54–65 below.

37 Furthermore, there was no evidence of any implicit adoption of these economic concepts within the CCCS ID. See paras 32–45 and 46–70 below.

38 See paras 19–23 below.

product market for CPPT services.[39] However, defining only one market as opposed to two distinct markets means that a firm would be either on both sides of the market or on none, rendering most of the CCCS's analysis otiose. As will be argued below,[40] this "single-market" view may be justified by the nature of the platform's intermediary role. Here, the CCCS's lengthy discussion on driver and rider-side substitutes in the ID also failed to consider the nature of the indirect externalities between riders and drivers. When the latter is taken into account, a ride-hailing platform could well have profit-maximising incentives to charge zero or negative rider fees while recouping its profits via positive driver fees. Hence, the relevant question here is whether such one-sided substitutes place sufficient competitive pressures on the merged platform to *not raise its fee level* on *both* sides of the platform rather than for *one* set of users.

11 Third, given the ubiquity of network externalities in two-sided digital platforms, a competition regulator should note the prevalence of economic efficiencies arising from such externalities.[41] In particular, where these externalities are positive, like that in the case at hand, a merger of two competing platforms *will* raise the valuations of users on both sides of the merged platform. While the CCCS left the matter unaddressed by noting that the merging parties had failed to discharge their burden of proof with regard to the matter, this raises the separate question of how and whether merging parties can practically demonstrate the existence and magnitude of these efficiencies.

12 This analysis demonstrates the challenges that regulators face when evaluating mergers between two or more digital platforms. Notably, the externality defining the relationship between the platform and its two (or more)-sided users is complex – depending on its exact nature, the externality can either attenuate or exacerbate the anti-competitive effects that ordinarily arise in mergers between two or more firms.[42] However, the avoidance of involved but necessary analysis is equally undesirable, with liability turning on impressionistic priors as opposed to rigorous, empirical inquiries. The author proposes a series of legal reforms to address this conundrum.[43] In particular, it is suggested that a presumption of illegality be drawn in platform mergers where such mergers are likely to lead to anti-competitive effects. For example, horizontal mergers that involve positive network externalities and cross certain concentration thresholds should attract greater regulatory attention. Such reforms

39 See paras 45–53 below.
40 See paras 45–53 below.
41 See paras 66–70 below.
42 See paras 71–78 below.
43 See paras 71–78 below.

would provide a stronger justification for constraining Grab's post-merger conduct. Indeed, while the CCCS's remedies were a step in the right direction, they were arguably inadequate in restoring competition to its pre-merger status.

13 This article is organised as follows.[44] Part II[45] briefly sets out the key economic characteristics of digital platforms. Part III[46] discusses the primary facts leading to the CCCS's ID, as well as various aspects of the ID which were well reasoned. Part IV[47] focuses on the problematic aspects of the ID. While the legal outcome following the author's analysis does not substantially differ from that of the CCCS, it is argued that the conceptual conflation here may give rise to problems in understanding *future* horizontal platform mergers. Finally, part V[48] proposes a series of legal reforms to better address the challenges that regulators face when evaluating mergers between two or more digital platforms. Part VI[49] concludes.

II. The economic characteristics of digital platforms

A. Increasing returns to scale

14 As the Stigler Report has pointed out, many of the most innovative Internet-derived digital markets, search engines, social networks, operating systems, e-commerce and ride-sharing, are highly concentrated and have been dominated by one or a few firms.[50] One reason behind their dominance is that most digital platforms enjoy

44 Not all of the issues discussed by the Competition and Consumer Commission of Singapore ("CCCS") in its infringement decision will be covered in this article. For example, the vertical aspect of the merger, where Uber transferred its private hire car rental service, Lion City Rentals, to Grab in exchange for its equity stake is not discussed. The CCCS noted that it was not necessary for it to establish vertical effects in order to make a finding that the horizontal merger had substantially lessened competition. CCCS ID at [321].

45 See paras 14–31 below.

46 See paras 32–45 below.

47 See paras 46–70 below.

48 See paras 71–78 below.

49 See paras 79–80 below.

50 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 34.

increasing returns to scale.[51] In other words, the average unit cost of these platforms decreases with an increase in sales.[52]

15 Why do digital platforms enjoy increasing returns to scale? Most digital platforms are used to exchange information goods and services.[53] The production of many information goods requires a large fixed cost, but little to no variable cost.[54] As such, where an additional user is served, costs do not rise proportionately.[55] For example, when a software program has been developed, it can be distributed at almost no cost to all users around the world, so long as these users have access to the Internet.[56] Similarly, a software developer is able to update a given piece of software for a few million users with similar fixed expenses as would be required for a small fraction of these users.[57] Hence, the *marginal* cost of serving an additional user is often close to zero.

16 With increasing returns to scale, digital platforms have strong incentives to invest in fixed costs so that they can attract as many customers as possible. With a large customer base, the digital platform enjoys lower average costs per consumer as compared to a platform with a smaller base. Unfortunately, increasing returns to scale also creates barriers to entry, as entrants are unable to offer the same quality-adjusted price as the incumbent without a large market share to pay for the fixed costs.[58] Thus, unless a rational entrant is confident of capturing a substantial portion of the incumbent's market share, it will not enter the market.[59]

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51 Hal Varian, *Intermediate Microeconomics with Calculus: A Modern Approach* (WW Norton & Company, 9th Ed, 2014) at p 369.

52 Hal Varian, *Intermediate Microeconomics with Calculus: A Modern Approach* (WW Norton & Company, 9th Ed, 2014) at p 388.

53 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 36.

54 Joseph Farell & Paul Klemperer, "Coordination and Lock-in: Competition with Switching Costs and Network Effects" in *Handbook of Industrial Organization* vol 3 (Jean Tirole ed) (North Holland, 2007) ch 31 at p 1986.

55 Joseph Farell & Paul Klemperer, "Coordination and Lock-in: Competition with Switching Costs and Network Effects" in *Handbook of Industrial Organization* vol 3 (Jean Tirole ed) (North Holland, 2007) ch 31 at p 1986.

56 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 36.

57 Fiona Scott Morton *et al*, Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 36.

58 John Sutton, Sunk Costs and Market Structure: Price Competition, Advertising, and the Evolution of Concentration (MIT Press, 1991) at p 158.

59 John Sutton, Sunk Costs and Market Structure: Price Competition, Advertising, and the Evolution of Concentration (MIT Press, 1991) at p 158.

17 With the capture of user data becoming increasingly common amongst digital platforms these days, digital platforms with large numbers of users have the additional advantage of being able to offer services that smaller platforms cannot. By using machine learning techniques to gain insights into its user base, digital platforms may be able to leverage the data from an existing service to enter into an adjacent market with a higher quality product – what economists term "economies of *scope*".[60] For example, ride-hailing platforms are able to harness their data to also offer food delivery services at a much lower cost than competitors without ride-hailing services. Thus, it comes as little surprise that ride-hailing platforms compete in a number of related markets, such as in the delivery of food and parcels.

18 In the context of a ride-hailing platform, increasing returns to scale are important. As a ride-hailing platform is able to spread its fixed costs amongst multiple users, it has the incentives to *maximise the number of transactions*, conditional on it being able to recoup some fees per transaction. As will be argued below,[61] this, together with the two-sided nature of the ride-hailing business, will be major drivers of how ride-hailing platforms set their platform fees.

B. Platform multi-sidedness, externalities and exchange platforms

19 While numerous definitions have been provided in the literature for multisided markets, most scholars agree that a (digital) platform plays an *intermediating* role – it connects two or more distinct groups of users who would not ordinarily be able to interact with each other in the absence of the platform.[62] For instance, in dating clubs, large transaction costs prevent men and women from meeting large numbers of the opposite gender without the platform's "catalysing" role.[63] As the utility (or value) of each group of users depends on the characteristics of users in *other* groups, the actions of one set of users will affect the actions of a distinct set of users. This applies even if a user in the former group has no direct interaction with the latter set of users. Transactions

60 John C Panzar & Robert D Willig, "Economies of Scope" (1981) 71(2) *The American Economic Review* 268 at 268–270.

61 See paras 24–31 below.

62 Marc Rysman, "The Economics of Two-sided Markets" (2009) 23(3) *Journal of Economic Perspectives* 125 at 126.

63 Julian Wright, "One-sided Logic in Two-sided Markets" (2004) 3(1) *Review of Network Economics* 44 at 46.

between the platform and a given user will influence a third-party user of the platform. Economists have termed this phenomenon an *externality*.[64]

20 Where the magnitude of the externality depends on the number of users, the externality is known as a "network externality".[65] Whether the network externality is "direct" or "indirect" depends on whether the externality operates within the *same* group of users or between *distinct* groups of users.[66] Social networks, for example, have direct network externalities since user experience is directly tied to the size of the entire network.[67] Contemporary social networks like Facebook would have gained little traction with only a few users. It is salient to note that all of Facebook's users belong to the same group – each user of Facebook has similar incentives to enter/leave the platform as the total number of users varies. On the other hand, indirect network externalities operate between distinct groups of users. Each group of users provides a complement that increases the benefits of consumption by other groups of users.[68] Software platforms rely on indirect network externalities. For instance, users of the Windows operating system gain value from having more application developers who write programs for Windows, since they are more likely to find an application that meets their needs.[69] Similarly, application developers for the Windows operating system also gain value from having more users of the Windows operating system, as they are more likely to enjoy higher revenues from a large user base.

21 Evans and Schmalensee classify two-sided platforms into four categories: exchanges, advertiser-support media, transaction devices and software platforms.[70] Here, the focus will be on exchanges, given

64 Jean-Charles Rochet & Jean Tirole, "Two-sided Markets: An Overview" Institut d'Economie Industrielle Working Paper (12 March 2004) at p 6.

65 Matthew T Clements, "Direct and Indirect Network Effects: Are They Equivalent?" (2004) 22(5) *International Journal of Industrial Organization* 633 at 633.

66 Matthew T Clements, "Direct and Indirect Network Effects: Are They Equivalent?" (2004) 22(5) *International Journal of Industrial Organization* 633 at 633.

67 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at p 38. Note that this network externality is *positive*; that is, the user's benefit (from using the platform) *increases* with the number of users. See paras 54–65 below.

68 Matthew T Clements, "Direct and Indirect Network Effects: Are They Equivalent?" (2004) 22(5) *International Journal of Industrial Organization* 633 at 634.

69 Fiona Scott Morton *et al*, *Draft Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee* (University of Chicago, Stigler Center for the Study of the Economy and the State, September 2019) at pp 68–69.

70 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in *Issues in Competition Law and Policy Vol 1* (ABA Section of Antitrust Law, 2008) ch 28 at p 669.

the nature of ride-hailing platforms as "exchange" platforms.[71] Typical exchanges have two distinct groups of customers: "buyers" and "sellers". The exchange platform assists buyers and sellers in searching for feasible contracts where they can enter into mutually advantageous trade, and at the best prices subject to the platform's profits (given the platform's profit level, it wants the buyer to pay as little as possible, while the seller to receive as much as possible). Thus, exchange platforms have strong incentives to maximise their volume of transactions, in line with the incentives of digital platforms above.[72] Exchanges include auction houses, financial exchanges for securities contracts, and job portals, among many others.[73]

22 Ride-hailing platforms may be viewed as typical "exchange" platforms, with the "buyers" being riders purchasing ride-hailing services, and the "sellers" being drivers selling their labour services. Indeed, the nature of ride-hailing platforms as "exchange-type" platforms is obvious when one considers a transaction between a given rider and driver for the rider's journey from point A to point B in the *absence* of the platform. Here, both riders and drivers face substantial search costs (*eg*, the rider has to search for a driver willing to undertake the journey),[74] bargaining costs (*eg*, the rider and driver have to mutually agree on a price),[75] as well as legal constraints (*eg*, Road Traffic Act requirements that chauffeured service providers be licensed).[76] Collectively, these transaction costs prevent mutually beneficial trades from taking place without the platform.

23 Like most other exchange platforms, ride-hailing platforms face large indirect network externalities.[77] For a ride-hailing platform, the value that any given rider faces is largely dependent on the number of drivers on that platform, since he is likely to experience shorter waiting times and a larger set of drivers willing to undertake his intended journey with an increased number of drivers. Similarly, the value that any given

71 In this article, "transaction platforms" is used as a synonym for "exchange platforms". See paras 45–53 below.

72 See paras 13–18 above.

73 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in *Issues in Competition Law and Policy* vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at p 670.

74 Robert Cooter & Thomas Ulen, *Law and Economics* (Addison-Wesley, 6th Ed, 2003) at p 88.

75 Robert Cooter & Thomas Ulen, *Law and Economics* (Addison-Wesley, 6th Ed, 2003) at p 88. Collectively, information costs and bargaining costs may be construed as "transaction costs". For an overview of transaction costs in law, see Ronald H Coase, "The Problem of Social Cost" in *Classic Papers in Natural Resource Economics* (Chennat Gopalakrishnan gen ed) (Palgrave Macmillan, 1960) at pp 87–137.

76 Road Traffic Act (Cap 276, 2004 Rev Ed) s 101.

77 CCCS ID at [248].

driver faces is largely dependent on the number of riders on that platform, since he is likely to experience shorter waiting times and a larger set of riders willing to undertake profitable trips with a greater number of riders. Importantly, the ride-hailing platform understands the nature of this externality, and takes this into account when setting platform fees for both groups of users.[78] Intuitively, a ride-hailing platform will be able to charge higher fees for users with correspondingly higher values for platform use.[79] In the next section, some pricing incentives for a typical ride-hailing platform will be explored.

C. Pricing incentives and platform competition

24 In a typical one-sided firm with increasing returns to scale, pricing for a given product is set pursuant to two factors: (a) the consumer (market) demand curve for the product;[80] and (b) the competitive response of its rivals.[81] When the firm considers whether to increase the price of a given product, it compares the revenue gained from consumers that continue to purchase the product after the price increase with the revenue loss from consumers that no longer purchase the same (either due to substitution to competitor products or a cessation of purchases). Optimally, the firm will continue to increase this price until the marginal gain in revenue is exactly equal to the marginal loss from the same.[82]

25 A two-sided ride-hailing platform faces similar incentives as the aforementioned one-sided firm. It must also determine the consumer demand curve for the product in question, as well as the competitive response of its rivals. However, the platform faces a further impetus to modify its behaviour. In determining their competitive position *vis-à-vis* their competitors, two-sided platforms have to consider the two factors above, and also (c) the indirect network externality between its two sets

78 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in *Issues in Competition Law and Policy* vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at pp 674–675.

79 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in Issues in Competition Law and Policy vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at pp 674–675.

80 In a one-sided market with increasing returns to scale or positive direct network externalities (such as in markets for information goods), supply-side factors are not as important in determining the firm's optimal price as it faces little to no variable costs in selling an additional unit. See paras 13–18 above.

81 Hal R Varian, Intermediate Microeconomics with Calculus: A Modern Approach (WW Norton & Company, 2014) at p 519.

82 Hal R Varian, *Intermediate Microeconomics with Calculus: A Modern Approach* (WW Norton & Company, 2014) at p 506.

of users.[83] To illustrate these effects, Figure 1 sets out a diagrammatic representation of a typical ride-hailing platform:[84]

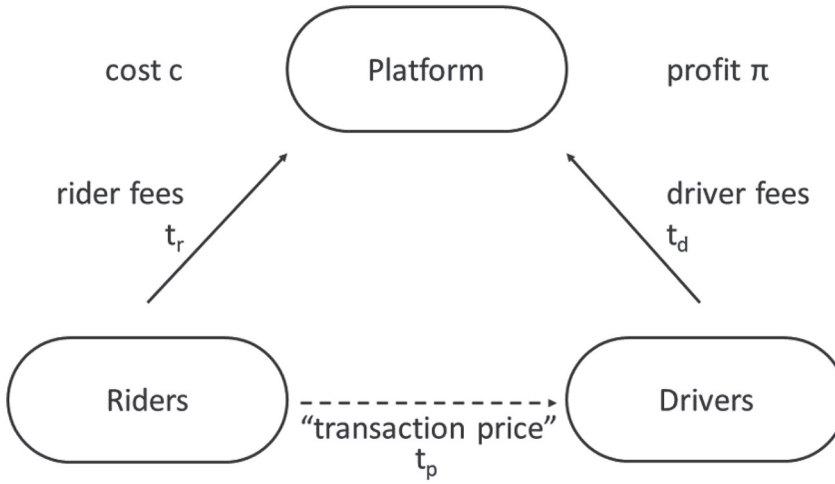

Figure 1

26 In Figure 1, t_r and t_d are the respective *platform fees* that drivers and riders pay to use the platform. For drivers, these fees (t_d) correspond to the commissions (usually a fraction of t_p) that drivers pay to the platform when they perform rides on the platform. On the other hand, riders do not usually pay fees for mere use of the platform. In fact, many of these fees (t_r) are actually *negative*, and come in the form of discounts and promotions for riders.[85] What is critical here is that the platform's revenue stems entirely from platform fees t_r and t_d – the platform has no other source of revenue other than from the aforementioned fees.

27 In contrast, the platform's *transaction price* (t_p) reflects the fee that riders pay to drivers when they book a ride on the platform.[86] t_p is conceptually distinct from both t_r and t_d. Consider a hypothetical scenario where the platform fees t_r and t_d are both zero. Here, the transaction price t_p remains positive, reflecting the price level at which drivers are willing

83 Jean-Charles Rochet & Jean Tirole, "Two-sided Markets: An Overview" Institut d'Economie Industrielle Working Paper (12 March 2004) at p 34.

84 The figure has been adopted from Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1252.

85 See, *eg*, CCCS ID at [143].

86 Thus, what CCCS refers to as the "trip fare" is really the "transaction price" added to the rider's "platform fee" (*ie*, $t_p + t_r$). This is the actual fare that a potential platform rider observes when he attempts to book a ride on the platform. See CCCS ID at [90].

to undertake a given trip for riders in the absence of the platform.[87] As will be argued later, the CCCS failed to distinguish the *transaction price* that riders faced on the platforms from the *platform fees* that both riders and drivers pay to use the platforms, leading to conceptual confusion for much of its analysis in the ID.[88]

28 Unlike one-sided firms, ride-hailing platforms will also have to consider the respective benefits (or valuations/values) that the riders and drivers receive from the platform (b_r and b_d) in determining optimal values for both t_r and t_d.[89] This is due to the indirect and positive network externalities that typically characterise such platforms. Consider a ride-hailing platform's decision to increase its rider fees, t_r. If a ride-hailing platform increases its fees for riders, some drivers will also leave the platform (given constant t_d) – this is a *direct effect* from the fee increase.[90] However, the loss of these drivers from the platform will in turn induce the loss of some (albeit fewer) riders (by decreasing b_r), repeating a cycle until all remaining users continue to use the platform after the price increase – this is an *indirect effect* arising from the fee increase.[91] Essentially, due to the indirect network externalities present here, ride-hailing platforms have to trade off the direct increase in revenue from increasing t_r with the decrease in revenue from (a) the *direct* loss of revenue from riders who leave the platform in response to the fee increase and (b) the *indirect* loss of revenue from riders and drivers who leave the platform in response to the lower number of riders/drivers on either side of the platform.[92]

29 In contrast to one-sided firms, the additional "indirect loss" imposed on platforms provides them with strong incentives to maintain low fees for at least one group of users when facing competition. More generally, Bolt and Tieman note that many two-sided platforms tend to settle on pricing structures that are heavily skewed towards one side

87 Note that transaction costs would ordinarily prevent these trades from taking place. See paras 19–23 above.

88 See paras 54–65 below.

89 The terms "values", "benefits" and "valuations" are used as synonyms for each other in this article. Heterogeneity amongst riders and drivers may be thought of as probabilistic distributions of b_r and b_d. See Andreu Mas-Colell, Michael Dennis Whinston & Jerry R Green, *Microeconomic Theory* vol 1 (Oxford University Press, 1995) at p 863.

90 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in *Issues in Competition Law and Policy* vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at p 674.

91 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in *Issues in Competition Law and Policy* vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at p 688.

92 The loss of drivers would also lower the platform's revenue, as the platform loses revenue from driver fees (t_d).

of the market.[93] The intuition behind this proposition considers the *responsiveness* of users on each side of the market in response to a change in fees for these users.[94] Consider a ride-hailing platform's incentives to increase its driver fees, t_d. Again, due to the network externalities present here, the loss of some drivers will induce a loss of some riders, which in turn leads to the further loss of some (albeit fewer) drivers. But if the net loss of revenue resulting from an increase in driver fees is much lower than the same when rider fees are increased, then the platform could do better by pursuing a strategy of extracting surplus from drivers as opposed to riders. As Bolt and Tieman put it, it is often a profit-maximising strategy for platforms to generate demand by charging riders the lowest possible fee.[95] Since every rider will participate on the platform, the drivers are encouraged to participate through these network externalities. However, given that the drivers are less price-elastic than riders, the platform will find it profitable to recoup *all* of its profits via driver fees.[96] Additionally, the ride-hailing platform's incentives to charge riders the lowest possible fee is reinforced by its incentives to maximise the volume of transactions.[97]

30 This conduct has important implications for competition policy. As Wright has saliently noted, policy errors often arise where platforms are examined based on "conventional wisdom rather than the logic of two-sided markets".[98] In the ID, for example, the merging parties repeatedly argued that the pre-transaction prices were "unsustainable".[99] Unfortunately, this ignores the intense incentives that the platforms had to make ride-hailing attractive for riders at the expense of driver interests.[100]

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93 Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1251.

94 "Responsiveness" is used as a synonym for "elasticity" here. Hal Varian, *Intermediate Microeconomics with Calculus: A Modern Approach* (WW Norton & Company, 9th Ed, 2014) at p 274.

95 Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1254.

96 Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1253.

97 Due to increasing returns to scale, the ride-hailing platform will minimise its average costs per transaction when it maximises its volume of transactions. See paras 13–23 above.

98 Julian Wright, "One-sided Logic in Two-sided Markets" (2004) 3(1) *Review of Network Economics* 44 at 45.

99 Many commenters had opined that the low transaction prices were "unsustainable". See Nitin Pangarkar, "Commentary: Grab-Uber Merger Will Lead to Monopolistic Prices? Flawed Thinking" *Channel NewsAsia* (29 March 2018).

100 Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1254. For a more sophisticated critique where riders can multi-home and drivers cannot, see

(cont'd on the next page)

31 Given the close relationship between t_r and t_d on any ride-hailing platform, economists have suggested a new characterisation of the platform's competitive parameters – the *fee level* and the *fee structure* of the platform. Essentially, the fee level is the sum of both t_r and t_d, while the fee structure relates to the ratio of t_r to t_d.[101] As will be discussed in Part IV below, mergers of two platforms will tend to raise the fee level, but is also likely to modify the fee structure.[102]

III. The ID (I)

A. Facts leading to the ID

32 On 26 March 2018, two digital platforms, Grab and Uber, announced the sale of Uber's SEA business to Grab in consideration of Uber acquiring a 27.5% stake in Grab ("the Transaction").[103] Both of these platforms engaged in, *inter alia*, ride-hailing – the matching of drivers and riders for the provision of booked CPPT services.[104] The Transaction entailed Grab's acquisition of certain assets, employees, contracts and data from Uber and its subsidiaries in SEA. These assets related to all of Uber's businesses in SEA, including the provision of intra-city transport facilitation and food delivery services, but excluding its intellectual property other than the data of riders, driver partners, UberEats merchants, eaters and couriers.[105]

33 Prior to this announcement, there were numerous media reports speculating that there could be a potential merger between Grab and Uber.[106] Although the CCCS sent a letter to each party on 9 March 2018 indicating the CCCS's powers to investigate and give directions/impose

Mark Armstrong & Julian Wright, "Two-Sided Markets, Competitive Bottlenecks and Exclusive Contracts" (2007) 32(2) *Economic Theory* 353 at 372–373.

101 Lapo Filistrucchi, Tobias J Klein & Thomas O Michielsen, "Assessing Unilateral Merger Effects in a Two-sided Market: An Application to the Dutch Daily Newspaper Market" (2012) 8 *Journal of Competition Law & Economics* 297 at 302. Note that the term "fee level" instead of "price level" is used here to distinguish the platform fees from the transaction price. For consistency purposes, the term "fee structure" instead of "price structure" is also used here.

102 In particular, platform mergers may result in a more efficient fee structure. See Lapo Filistrucchi, Tobias J Klein & Thomas O Michielsen, "Assessing Unilateral Merger Effects in a Two-sided Market: An Application to the Dutch Daily Newspaper Market" (2012) 8 *Journal of Competition Law & Economics* 297 at 302.

103 CCCS ID at [1].

104 CCCS ID at [4].

105 CCCS ID at [21] (noting that the transaction excluded Viet Car Rental Company Limited, Uber Philippines Centre of Excellence LLC and Lion City Rentals).

106 CCCS ID at [2].

financial penalties should the parties infringe the competition law, neither party notified the CCCS of the intended merger transaction.[107] Indeed, on 19 March 2018, Uber sent a letter informing the CCCS that it would reach out to the regulator if it entered into an agreement that had an effect on competition in Singapore.[108]

34 However, shortly after the announcement was made, Uber and Grab began transferring Uber's assets, information and data to Grab and migrating Uber drivers and riders to Grab's platform.[109] Furthermore, Uber started instructing its riders and drivers to download the Grab application, and informing them that Uber would no longer be operational in SEA after 8 April 2018.[110]

35 Given the lack of notification by either merging party, the CCCS commenced an investigation into the Transaction on 27 March 2018, since there were reasonable grounds for suspecting that there had been a s 54 infringement of the Competition Act.[111] Shortly after, the CCCS issued interim measures directions pursuant to s 67 of the Competition Act to prevent party actions which would prejudice the CCCS's directions (if any) upon the conclusion of the CCCS's investigation.[112]

36 Finally, after several months of investigation, the CCCS determined that the Transaction had infringed s 54 of the Competition Act for substantially lessening competition in the ride-hailing market.[113] The CCCS issued a S$13m financial penalty against the parties for this infringement,[114] while also issuing a series of remedial directions against the merged entity, Grab.[115] These remedial measures required Grab to, *inter alia*, remove any exclusivity obligations with regard to its drivers, maintain its pre-Transaction pricing on its platform, and to remove any restriction on the acquirers to whom its car rental company, Lion City Rentals, could be sold.

37 Ong has made the plausible argument that the Transaction should have been characterised as a market-sharing agreement.[116] If the

107 CCCS ID at [2].
108 CCCS ID at [2].
109 CCCS ID at [4].
110 CCCS ID at [4].
111 CCCS ID at [5].
112 CCCS ID at [9].
113 CCCS ID at [348].
114 CCCS ID at [439].
115 CCCS ID at [372].
116 See Burton Ong, "Grab-Uber Deal: Merger or Market-sharing Agreement?" *The Straits Times* (13 April 2018).

agreement could be construed as agreeing to not compete with Grab in SEA in exchange for its equity stake in Grab, this would attract liability under s 34 of the Competition Act.[117] However, the CCCS decided not to pursue this line of argumentation.

B. The counterfactual

38 In order to assess whether a merger "substantially lessens competition" ("SLC") in a given market, a competition regulator generally compares the state of competition where the (possibly hypothetical) merger occurs with a similar state where the merger does not occur.[118] The latter state is known as a "counterfactual". In an ordinary instance of merger review, the proposed merger transaction would not have taken place.[119] As such, considerable difficulty arises in determining the welfare and price effects of the hypothetical merger. Indeed, a substantial volume of literature has been dedicated to econometric (and other) tools used to simulate mergers.[120] In contrast, the counterfactual in these situations is relatively easy to define – absent imminent changes in the structure of competition, the historical state of competition would be simply taken as the state where the merger did not occur.[121]

39 In the ID at hand, the CCCS faced the opposite problem – because Uber's exit from SEA was ostensibly foreseeable, the parties argued that the forward-looking nature of the counterfactual would involve such an exit.[122] However, if the counterfactual were so defined, it would be very hard for the CCCS to establish liability under s 54 of the Competition Act. Merging parties could simply posit that there would be little to no SLC stemming from the Transaction, given Uber's inevitable exit from

117 See Burton Ong, "Grab-Uber Deal: Merger or Market-sharing Agreement?" *The Straits Times* (13 April 2018). Ong's argument on the undesirability of the "merger" alternative that the Competition and Consumer Commission of Singapore pursued under s 54 of the Competition Act (Cap 50B, 2006 Rev Ed) is less persuasive. Even if the merger were "asset light", the *de facto* structure of the market would entail the shift of a vast majority of Uber's riders and drivers to Grab's platform after the Transaction, similar to an ordinary "asset heavy" merger. Furthermore, in contrast to an agreement not to compete, Uber continued to have access to post-merger profits through its equity stake in Grab. See also s 34 of the Competition Act.

118 CCCS ID at [36].

119 See Massimo Motta, *Competition Policy: Theory and Practice* (Cambridge University Press, 2004) at p 192. Motta notes that merger control is primarily an *ex ante* instrument to prevent anti-competitive effects from arising.

120 See generally Oliver Budzinski & Isabel Ruhmer, "Merger Simulation in Competition Policy: A Survey" (2010) 6 *Journal of Competition Law & Economics* 277 at 282.

121 See Oliver Budzinski & Isabel Ruhmer, "Merger Simulation in Competition Policy: A Survey" (2010) 6 *Journal of Competition Law & Economics* 277 at 280.

122 CCCS ID at [58].

the ride-hailing market.[123] On the other hand, as the Transaction at hand did occur prior to the CCCS's merger review, the CCCS would be able to evaluate actual price data following the Transaction.[124]

40 After considering the parties' arguments, the CCCS assessed that Uber would not have exited Singapore "without extracting the residual value from its assets, branding, and goodwill".[125] As the CCCS explained, Uber would have remained in Singapore while exploring other strategic options, such as collaboration with another market player or a sale of its assets to an alternative buyer.[126] The CCCS primarily based its analysis on the prevailing evidence that the parties had carefully considered alternatives and projections which did *not* involve Uber's exit from the market. For example, despite media commentary suggesting the contrary, Uber made submissions that it was not a failing firm, and that it did not make a decision to exit Singapore.[127] Furthermore, the CCCS noted that Grab did not mention the possibility of an Uber exit without the Transaction – if Grab's board had considered Uber's exit credible, it would not have required Grab to offer 27.5% of its equity to acquire its competitor's assets.[128]

41 The CCCS's evaluation of the counterfactual in its ID is laudable. By relying on the merging parties' internal documents, the CCCS managed to avoid impressionistic inferences on what the state of competition would be absent the Transaction. Prior to the CCCS's decision, there was considerable debate in the media as to whether Uber's exit in the market was inevitable.[129] Given the latter view, it is perhaps unsurprising that many of these commentators militated towards a less interventionist

123 CCCS ID at [59]. The parties submitted that with or without the Transaction, other transportation options would place sufficient competitive constraints on Grab.
124 CCCS ID at [11].
125 CCCS ID at [62].
126 CCCS ID at [62].
127 CCCS ID at [63].
128 CCCS ID at [70]. The Competition and Consumer Commission of Singapore also noted numerous incidents where the parties had contemplated a scenario that did not involve Uber's exit. For example, there was evidence that the Uber board had made projections on a scenario where it would have to continue its operations in SEA over the next few years, that Grab had expected Uber to continue to compete with Grab until at least 2021, and that Uber had initiated a strategic alternative with Grab's competitor, ComfortDelGro, to allow its taxi drivers to access the Uber platform. See CCCS ID at [67], [69] and [75].
129 These statements were made without the insight of the Competition and Consumer Commission of Singapore's private information as to the internal governance of the merging parties. See Kenneth Khoo, "The Limits of Competition Policy" *The Straits Times* (20 April 2018).

approach.[130] However, as a matter of *causality*, the CCCS noted that it was the Transaction that had *caused* Uber to exit its operations in SEA, not the other way around.[131] As such, CCCS was entitled to take the view that there would have been no loss of close rivalry between the parties in the immediate term, allowing the CCCS to use the pre-Transaction state of competition as the appropriate counterfactual.[132]

42 Unfortunately, the CCCS left open the question as to the appropriate fee levels under the counterfactual. Here, the parties argued that fees were increasing prior to the Transaction. Given that pre-Transaction fees were "commercially unsustainable", the parties submitted that any increase in post-Transaction fees was a reflection of this unsustainability, and not due to a SLC brought about by the Transaction.[133] The CCCS avoided the question by simply noting that "the commercial considerations behind whether to maintain effective [fees] … at below-cost levels … are complex", and used the parties' own projections in estimating the effective fee levels under the counterfactual.[134] However, it is not clear why the CCCS made no determination regarding pre-Transaction fees at this stage of the inquiry, when it could have simply accounted for the non-merger related increase in platform fees, using historical fees as a starting benchmark.[135] As will be argued in Part IV below, the CCCS's use of the parties' projected price levels would be inappropriate.

C. Market structure

43 Given a predefined market of CPPT structures, the CCCS determined that the parties' combined market share was 80–90%, significantly above the indicative threshold stipulated under the *CCCS Guidelines on the Substantive Assessment of Mergers 2016* ("Guidelines").[136] Importantly, the CCCS noted the evidence that the number of Grab rides per month increased by 30–40% after the Transaction, indicating a large degree of user substitution from Grab to Uber after Uber had shut down its platform.[137]

130 Nitin Pangarkar, "Commentary: Grab-Uber Merger will Lead to Monopolistic Prices? Flawed Thinking" *Channel NewsAsia* (29 March 2018).
131 CCCS ID at [65].
132 CCCS ID at [88].
133 CCCS ID at [89].
134 CCCS ID at [90].
135 See paras 54–65 below.
136 CCCS ID at [180]. See also *CCCS Guidelines on the Substantive Assessment of Mergers 2016* (1 December 2016) at para 5.15.
137 CCCS ID at [186].

44 With regard to the barriers to market entry stemming from the indirect network effects associated with ride-hailing platforms, the merging parties alleged that network effects were not a significant barrier to entry as both passengers and drivers frequently multi-homed across different ride-hailing apps in response to changing prices.[138] In response, the CCCS noted that driver-side multi-homing was necessarily constrained by the loyalty-rebate and exclusivity schemes provided by both platforms to drivers prior to the Transaction.[139] Such loyalty-rebate schemes provided strong incentives for drivers to remain with a particular platform – if a driver performed more rides on a given platform over a short period of time, he would be rewarded with pecuniary rewards that would effectively lower the driver fees he paid to the platform.[140] Further, the CCCS relied on evidence that only 10–20% of all drivers actually engaged in multi-homing.[141] Finally, the CCCS noted that the parties' ownership of separate car rental firms (*eg*, Grab Rentals) created significant switching costs for renters who wished to drive for rival platforms, as car rentals from these firms entailed exclusivity agreements with the platform in question.[142] As such, the CCCS determined that the ride-hailing market was prone to "tipping" – a phenomena where a firm would capture a majority share of the market and have its position entrenched by the network effects.[143]

45 Again, the CCCS's assessment of the market structure is largely commendable. The CCCS's observation that loyalty-rebate and exclusivity schemes prevent multi-homing is well supported by the law and economics literature on the subject. For example, Armstrong and Wright observe that where economic agents on only one side (*eg*, riders) are allowed to multi-home, a "competitive bottleneck" arises where platforms compete aggressively to sign up riders, charging less than cost,[144] while making their profits from drivers who want to reach these buyers and who do not have a choice of which platform to join in order to reach them – a scenario that ostensibly resembles the ride-hailing market in Singapore. Similarly, the CCCS's observation that loyalty rebates may give rise to "*de facto* exclusivity" is also well established in the literature – by bundling contestable and non-contestable demand, a loyalty rebate

138 CCCS ID at [190].
139 CCCS ID at [198]. Note that the term "incentive programmes" is analogous to "loyalty rebate schemes".
140 CCCS ID at [198].
141 CCCS ID at [200].
142 CCCS ID at [201].
143 CCCS ID at [193].
144 Mark Armstrong & Julian Wright, "Two-Sided Markets, Competitive Bottlenecks and Exclusive Contracts" (2007) 32(2) *Economic Theory* 353 at 373.

contract can exclude rival platforms from contesting for discrete rides, resulting in an "all or nothing" choice for drivers.[145]

IV. The ID (II)

A. Market definition

46 As the CCCS has pointed out, market definition in merger review serves two purposes. First, market definition assists in the identification of competitive constraints under which the merged entity will operate.[146] This allows the competition regulator to properly examine the competitive effects of a merger. Second, market definition aids in the determination of financial penalties when an infringement has occurred.[147] The focus in the following analysis is on the first purpose.

47 In defining a market, the main objective of a competition regulator is to identify which products are sufficiently close substitutes for one another such that they exert competitive pressure on the merging parties' conduct.[148] As Jones and Sufrin rightly point out, noting that a merged entity X has a monopoly over widgets is meaningless – if other firms produce perfect substitutes to widgets, then X would be unable to raise the price of widgets regardless of its monopoly, as these firms would simply expand their output in response to X's price increase.[149] On a related note, defining the market too broadly would understate the merged entity's market power (*ie*, its ability to independently increase prices above the competitive level), while defining the market too narrowly would overstate the merged entity's market power.[150]

48 It thus is somewhat unsurprising that the parties argued for a very broad definition of the relevant market. The parties submitted that the merged entity provided a matching platform for intra-city passenger transport services which competed with all other transportation options in Singapore. These transportation options included, *inter alia*, the consumers' own private cars, taxis, public transportation services such as

145 Fiona M Scott Morton & Zachary Abrahamson, "A Unifying Analytical Framework for Loyalty Rebates" (2017) 81 Antitrust LJ 777 at 800.
146 CCCS ID at [91].
147 CCCS ID at [91].
148 Alison Jones & Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (Oxford University Press, 6th Ed, 2014) at p 56.
149 Alison Jones & Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (Oxford University Press, 6th Ed, 2014) at p 56.
150 Alison Jones & Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (Oxford University Press, 6th Ed, 2014) at p 58.

public and private buses, shuttle coaches, MRT trains, social carpooling, bike sharing, and rival ride-hailing platforms.[151] The parties also argued that the nature of booking services for intra-city transportation was a two-sided platform, acknowledging that the value that each category of user gets from the service depends on the presence of the other.[152]

49 The CCCS acknowledged that the focal product was defined at the platform level (*ie*, the provision of a platform that facilitates matching between riders and drivers), and proceeded to discuss two aspects of the ride-hailing platform market – one on the rider-side and the other on the driver-side.[153] While the CCCS noted evidence that the parties did not consider alternative intra-city transportation options to be close competitors to them, it proceeded to analyse these two sub-markets separately.[154] For the rider-side of the market, the CCCS found that taxi booking services were a sufficiently close substitute, and hence should be within the relevant market.[155] However, it also found that street-hailed taxi services, public transportation, private cars and other transport options were not sufficiently close substitutes, and should thus be placed outside of the rider-side market.[156] In coming to its decision, the CCCS relied on third-party feedback, as well as some empirical data with regard to the substitutability of the products in question. For example, the CCCS determined whether street-hail was a close substitute by examining the number of ride-sharing and street hailing trips before and after the Transaction.[157] On the driver-side of the market, the CCCS found that chauffeured private hire car vehicle platforms and taxi bookings were sufficiently close substitutes, but that street-hailing and the wider labour market were outside of the rider-side market.

50 Was the CCCS correct in defining the two-sided platform market as a single market as opposed to two distinct markets? This is arguably the case due to the nature of the ride-hailing market as an *exchange*. In exchange markets, platforms collect fees from each side simultaneously for a given transaction.[158] Since both fees are closely interrelated with one another, any isolated analysis of the incentives to raise fees on one side

151 CCCS ID at [97].
152 CCCS ID at [96].
153 CCCS ID at [133].
154 CCCS ID at [134].
155 CCCS ID at [136].
156 CCCS ID at [144]–[155].
157 CCCS ID at [143].
158 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in *Issues in Competition Law and Policy* vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at p 670.

of the platform without consideration of the other must be incomplete.[159] Filistrucchi *et al* suggest that the crucial feature of such markets is the presence and observability of a transaction among end-users, which allows platforms to charge fees per transaction.[160] Defining the market this way, however, would mean that a firm would be either on both sides of the market or on none.[161] This would render most of the CCCS's analysis of one-sided substitutes otiose.

51 The key insight as to this divergence in market definition boils down to the *intermediary role* that ride-hailing platforms play.[162] While the broader job market and public transportation are weak substitutes for drivers and riders alike, accurate market definition boils down to the inclusion of products that would offer a degree of closeness in substitution in response to a "small but significant and non-transitory increase" in fee levels across the platform.[163] In contrast to single-sided transportation options, only rival platforms fit the bill here, playing a similar catalysing function of bridging riders and drivers together for a given trip.[164] In the absence of these platforms, riders and drivers would not be able to transact otherwise due to large transaction costs.[165]

52 Furthermore, the CCCS's lengthy discussion on driver and rider substitutes in the ID also failed to take into consideration the nature of the indirect externalities between riders and drivers. As explained earlier by Bolt and Tieman, a ride-hailing platform could well have profit-maximising incentives to charge zero or negative rider fees while recouping its profits via positive driver fees.[166] Hence, even if two distinct markets were defined, the relevant question here is whether such one-sided substitutes place sufficient competitive pressures on the merged platform to *not raise its fee level* across both sides of the platform, not whether these substitutes place sufficient pressures on the merged platform to not raise its fees for merely one set of users.

159 Julian Wright, "One-sided Logic in Two-sided Markets" (2004) 3(1) *Review of Network Economics* 44 at 47.

160 Lapo Filistrucchi *et al*, "Market Definition in Two-Sided Markets: Theory and Practice" (2014) 10 *Journal of Competition Law & Economics* 293 at 295.

161 Lapo Filistrucchi et al, "Market Definition in Two-Sided Markets: Theory and Practice" (2014) 10 Journal of Competition Law & Economics 293 at 298.

162 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in Issues in Competition Law and Policy vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at p 689.

163 CCCS ID at [150].

164 See paras 19–23 above.

165 See paras 19–23 above.

166 Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1252–1255.

53 For example, consider the ride-hailing market at hand. The CCCS suggested that taxi-booking services provided a sufficiently close substitute for riders in the relevant market.[167] In other words, the CCCS was ready to acknowledge that taxi-booking services would constrain the merged platform's ability to raise its rider fees. However, due to the indirect externalities present in ride-hailing platforms, it was clear that neither Grab nor Uber had charged riders any fees ($t_r = 0$).[168] Indeed, if discounts were taken into account, rider fees were even negative ($t_r < 0$) – all of the platforms' revenues were procured from driver commissions ($t_d > 0$) instead. A correct definition of the market would thus consider the limited competitive role of taxi-booking services in constraining the post-Transaction conduct of the merging parties, as any post-Transaction incentives to raise rider fees would be limited when compared to similar incentives to raise driver fees.[169]

B. Competition assessment

(1) Unilateral effects in one-sided mergers

54 In a typical one-sided (horizontal) merger, there are two primary ways by which a merger can induce anti-competitive effects.[170] First, a horizontal merger can create the unilateral incentive for the merged entity to raise prices.[171] Consider a simple oligopoly where firms A, B and C compete in a given market, and where each firm produces a unique but similar product. When firm A sets its prices, it does not consider the effect of its competitive conduct on B and C's profits. In particular, firm A would have the incentive to compete – by lowering its prices, it can appropriate more of the industry profits to itself, despite lowering profits for both firms B and C. Similarly, when firms B and C set their prices, they do not consider the effect of their competitive conduct on A's

167 CCCS ID at [160].

168 See paras 24–31 above.

169 In the extreme scenario, rider fees would remain the same pre- and post-merger (*eg*, $t_r = 0$ both pre- and post-merger). This often occurs in two-sided platform markets where a platform is unable to impose a negative fee on one side (*ie*, the minimum price it can set for its users is zero). See generally Jeon, Doh-Shin & Jay Pil Choi, "A Leverage Theory of Tying in Two-sided Markets with Non-negative Price Constraints" *American Economic Journal: Microeconomics* (forthcoming).

170 A horizontal merger is a merger between direct competitors who operate in the same industry. See Alison Jones & Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (Oxford University Press, 6th Ed, 2014) at p 1088.

171 See generally Gregory Werden & Luke Froeb, "Unilateral Competitive Effects of Horizontal Mergers" *SSRN* (22 October 2006) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=927913> (accessed 13 June 2020). See also Massimo Motta, *Competition Policy: Theory and Practice* (Cambridge University Press, 2004) at pp 233–234.

profits. In equilibrium, these competitive interactions will tend to result in low market prices. When firms A and B merge, however, they now have a common owner. Thus, the merged entity will now consider the effect of (former) A's profits on (former) B's profits; and likewise for B's profits on A's profits.[172] In other words, in deciding on what prices to set, the merged entity will now internalise the effect of competition on the merged entity's profits. Here, the merged entity will have a unilateral incentive to raise its prices, as it will simply "recapture" part of the lost revenue that it would have lost to B prior to the merger.[173] Such incentives are known in the competition law literature as "unilateral" or "non-coordinated" effects.[174]

55 Second, a horizontal merger can create incentives for the merged entity and its rivals to collude, tacitly or otherwise.[175] These incentives stem from the increased concentration in the post-merger market, as a more concentrated market facilitates the effective monitoring and punishment of deviations from a collusion agreement.[176] However, as the CCCS found that the merged entity would have around 80–90% of the combined market share, there would be limited gains from collusion in the ride-hailing market. Thus, the following analysis will focus on the unilateral effects of two-sided markets.

(2) Unilateral effects in two-sided markets

56 As discussed in Part II above, the primary difference between a two-sided platform and a single-sided firm stems from the platform's indirect network externalities. Thus, these externalities must be taken into account when evaluating a merger between two platforms.

57 To see how these externalities would affect the usual analysis, we may examine a merger between a platform with positive network externalities and a single-sided firm operating only on one side of the market.[177] As use of the ride-hailing market may be somewhat

172 It is assumed that the merged entity continues to produce two products, what was formerly produced by firm A, as well as what was formerly produced by firm B.

173 Joseph Farrell & Carl Shapiro, "Recapture, Pass-through, and Market Definition" (2009) Antitrust LJ 585 at 587.

174 Joseph Farrell & Carl Shapiro, "Recapture, Pass-through, and Market Definition" (2009) Antitrust LJ 585 at 594.

175 See generally Joseph E Harrington Jr, "Evaluating Mergers for Coordinated Effects and the Role of Parallel Accommodating Conduct" (2012) 78 Antitrust LJ 651.

176 Joseph E Harrington Jr, "Evaluating Mergers for Coordinated Effects and the Role of Parallel Accommodating Conduct" (2012) 78 Antitrust LJ 651 at 662. See also Massimo Motta, *Competition Policy: Theory and Practice* (Cambridge University Press, 2004) at p 251.

177 Mergers of two platforms will be considered later as a special case of a merger between a platform and a one-sided firm.

inappropriate here, we will consider the merger of a generic exchange platform with a single-sided firm.[178] Prior to the merger, it is assumed that the platform takes the externality into account when setting its prices, and so charges different platform fees for each set of its users. If the single-sided firm provides a pool of potential sellers, then the merged entity will have the *direct* incentive to charge its sellers higher platform fees after the merger. This simply reflects the stronger market power that the merged entity would have post-merger, much like a similar entity in a merger between two one-sided firms.[179] However, this direct incentive does not take into account the indirect network externality between its sellers and buyers. Taking this externality into account, buyers will enjoy higher value from the post-merger increase in sellers. This, in turn, induces more buyers into using the platform, which would in turn induce a (smaller) increase in the number of sellers. Like in Part II above, the cycle repeats itself until no further new users are induced to enter. However, with a greater number of sellers, the merged entity has a *further indirect* incentive to charge its sellers higher platform fees post-merger.[180]

58 The aforementioned network externalities *reinforce* the merged entity's incentives to raise its prices. This phenomenon arises because the indirect network externalities here are *positive*; that is, an increase in buyers induces an increase in sellers and *vice versa*. In contrast, where the indirect network externalities are negative, the same is no longer true. In the newspaper market, for example, newspapers have to take into account the possibility that an increase in the number of advertisements may induce a decrease in readership if readers dislike advertising.[181] Here, the indirect network externalities *attenuate* the merged entity's incentives to raise its prices.

178 In mergers of platforms that charge platform fees in accordance with each transaction, the market should be narrowly defined to include only platforms. See Lapo Filistrucchi *et al*, "Market Definition in Two-Sided Markets: Theory and Practice" (2014) 10 *Journal of Competition Law & Economics* 293 at 302. Here, the platform considered is able to set non-transaction-specific platform fees – that is, the platform may charge subscription or flat fees to each side of the platform.

179 In other words, the unilateral effects following a horizontal merger. Gregory Werden & Luke Froeb, "Unilateral Competitive Effects of Horizontal Mergers" *SSRN* (22 October 2006) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=927913> (accessed 13 June 2020) at p 2.

180 This further incentive arises because the value of the marginal consumer (who is indifferent between use and non-use of the platform) increases with the indirect network externality. As such, the platform will be able to charge a higher price. See Jean-Charles Rochet & Jean Tirole, "Two-sided Markets: An Overview" (Institut d'Economie Industrielle Working Paper (12 March 2004) at p 34.

181 See Lapo Filistrucchi, Tobias J Klein & Thomas O Michielsen, "Assessing Unilateral Merger Effects in a Two-sided Market: An Application to the Dutch Daily Newspaper Market" (2012) 8 *Journal of Competition Law & Economics* 297 at 301.

59 The analysis above applies *a fortiori* to mergers between platforms with *bilateral* positive network externalities. In the instance where a platform merges with a single-sided firm, the indirect network externality applies to reinforce price incentives on only one side of the platform. In contrast, indirect network externalities will reinforce price incentives on *both* sides of the platform in most platform mergers. In ride-hailing platforms, for instance, on the rider-side of the platform, riders will enjoy higher value from the post-merger increase in drivers. This, in turn, induces more riders into using the platform, which would in turn induce a (smaller) increase in the number of drivers (the cycle repeats itself until no further new users are induced to enter). On the driver-side of the platform, drivers will also enjoy higher value from the post-merger increase in riders. This induces more drivers into using the platform, which would in turn induce a (smaller) increase in the number of riders.[182] In light of these (bilateral) positive externalities, while the fees for *one* side of the platform may remain the same post-merger, a merged entity has strong incentives to raise the overall fee level after the merger.[183]

(3) CCCS's assessment of unilateral effects

60 After evaluating the evidence in the ID, the CCCS held that Grab had increased its market power – post merger, it now had the ability to unilaterally raise prices because of the elimination in competition between Grab and Uber.[184] In coming to its findings, the CCCS relied heavily on the fact that there was a significant reduction in promotions and incentives post-Transaction, and consequently an increase in the effective price for trips.[185] The CCCS also relied on the fact that entry by competitors had not been demonstrated to be sufficient to defeat attempts by the merged entity to exploit the post-merger reduction in rivalry, as well as the parties' internal documents that expected the Transaction to increase the merged entity's ability to increase its effective prices.[186]

61 In its analysis concerning the effective price for trips taken on the parties' platforms, the CCCS suggested that there had been a significant increase in gross trip fares to riders less discounts and promotions ("effective price") from March 2018 to July 2018.[187] The

182 Likewise, the cycle repeats itself until no further new users are induced to enter.
183 This is consistent with the earlier analysis drawing on Bolt and Tieman's work. See Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1254.
184 CCCS ID at [280].
185 CCCS ID at [293].
186 CCCS ID at [288].
187 CCCS ID at [293].

CCCS also examined Grab's internal funding projections, and estimated that the Transaction would result in a 20–30% increase in effective trip fare through the reduction of discounts post-Transaction.[188] Finally, the CCCS noted that average discounts per chauffeured private car hire (via Grab's loyalty programme, "GrabRewards") had increased prior to the Transaction, but that these discounts had decreased post-Transaction.[189]

62 Although the CCCS's ultimate finding of substantial anti-competitive effects is correct, the regulator's reasoning in arriving at this conclusion was deeply troubling. First, the CCCS's focus on the effective price (taken to be $t_p - t_r$) was completely unwarranted.[190] If competition law is to pursue welfarist objectives,[191] then the central question for a competition regulator is whether the merged platform would have the incentives to raise its platform *fee level* ($t_r + t_d$) relative to a counterfactual where the merger does not take place.[192] As such, the level of the transaction price (t_p) is completely irrelevant.[193] In the absence of platform fees (t_r and t_d), riders would still pay a positive transaction price as a zero-sum transfer to drivers for trips undertaken by the latter. Indeed, the CCCS failed to distinguish the *transaction price* that riders faced on the platforms from the *platform fees* that *both* riders and drivers pay to use the platforms. As detailed in Part II above, platforms have strong incentives to maximise the volume of transactions on their platform due to increasing returns to scale and indirect network externalities. Thus, any unnecessary adjustment of the transaction price other than to match relative demand and supply of trips would be highly distortionary to a platform's revenues.[194] In other words, a ride-hailing platform would only seek to adjust its platform fees in maximising its profits.

63 Second, the CCCS failed to account for the *nature* of the indirect network externalities in the ride-hailing market at hand. As the analysis

188 CCCS ID at [288].
189 CCCS ID at [295].
190 See paras 24–31 above.
191 Kenneth Khoo & Allen Sng, "Singapore's Competition Regime and Its Objectives: The Case against Formalism" [2019] Sing JLS 67 at 73.
192 Lapo Filistrucchi, Tobias J Klein & Thomas O Michielsen, "Assessing Unilateral Merger Effects in a Two-sided Market: An Application to the Dutch Daily Newspaper Market" (2012) 8 *Journal of Competition Law & Economics* 297 at 298–299.
193 To see why this must be so, consider the scenario where a rider and driver engage in a mutually beneficial transaction to embark on a given trip. Absent the platform, or with a non-profit platform that charges zero platform fees, the said driver would not be willing to undertake the trip unless the rider paid him a sum of money agreed upon by both parties. The latter sum represents the transaction price t_p.
194 Yiwen Chen, Ming Hu & Yun Zhou, "Pricing and Matching in the Sharing Economy" in *Sharing Economy: Making Supply Meet Demand* vol 6 (Ming Hu ed) (Springer, 2019) at p 138.

earlier in the section has shown, the network externalities involved here are *positive*. It is easy to show how the externalities reinforce the merged entity's unilateral incentives to raise the platform fee level.[195] In contrast, the same is not true where the network externalities are negative. Here, a merged entity may have incentives to reduce one or both platform fees post-merger. By adopting a "one-sided" form of analysis to a two-sided market, the CCCS has engaged in conceptual errors which may give rise to problems in understanding future horizontal platform mergers, especially where these mergers involve negative network externalities.

64 The CCCS's failure to properly consider the "two-sidedness" of the ride-hailing market also extends to its lack of analysis in relation to a possible increase in driver fees (t_d). While an increase in driver fees may have been tempered by the CCCS's interim measures directions,[196] there were numerous complaints from drivers with regard to the reduction of the quantum of incentives post-Transaction, suggesting that the merged entity may have raised driver fees in that way.[197] Indeed, as the discussion in Part II above has shown, the relative price-inelasticity of drivers as compared to riders suggests that the post-merger platform has strong incentives to increase its driver fees.[198] However, the CCCS only considered Grab discounts to riders in its analysis, with little discussion as to whether there was empirical evidence of driver-side incentives.

65 Given that the Transaction had already taken place, the CCCS should have focused on *actual evidence* of fee level increases that occurred after the merger. While the CCCS was not required to do so at law,[199] evaluating the actual effects of the merger here would have reduced the error costs following from a wrongful decision[200] without substantially

195 See paras 56–59 above.

196 CCCS ID at [9].

197 CCCS ID at [292].

198 See Wilko Bolt & Alexander F Tieman, "Heavily Skewed Pricing in Two-Sided Markets" (2008) 26(5) *International Journal of Industrial Organization* 1250 at 1252–1255. See also Mark Armstrong & Julian Wright, "Two-Sided Markets, Competitive Bottlenecks and Exclusive Contracts" (2007) 32(2) *Economic Theory* 353 at 354. See also paras 24–31 above.

199 CCCS ID at [282].

200 The error costs following from a wrongful decision would constitute the sum of the welfare losses due to the wrongful prohibition of pro-competitive conduct (Type I errors) and the welfare losses due to the wrongful countenance of anti-competitive conduct (Type II errors). See Mark A Lemley & Christopher R Leslie, "Categorical Analysis in Antitrust Jurisprudence" (2008) 93 Iowa L Rev 1207 at 1256–1257. See also Arndt Christiansen & Wolfgang Kerber, "Competition Policy with Optimally Differentiated Rules Instead of 'Per Se Rules vs Rule of Reason'" (2002) 2 *Journal of Competition Law & Economics* 215 at 231–234.

increasing the administrative costs of evaluating the Transaction.[201] Under such an analysis, the CCCS would have been able to evaluate the merits of Grab's argument that it had been rolling back its discounts for customers and incentives for drivers prior to the Transaction. For example, given observable fee levels before and after the merger, it would have been easy for the CCCS to remove an average trend of fee increases (had they occurred) prior to the Transaction from any post-Transaction data on fee level changes.[202] This would have *isolated* the effect of the Transaction on the overall fee level. Notwithstanding the rarity of actual merger consummations in merger control, this was not done.[203]

C. Efficiencies

66 The parties submitted that the Transaction was expected to generate efficiency benefits from both scale economies that led to more efficient utilisation of drivers and shorter wait times for both riders and drivers, as well as service improvements that would improve the experience and safety for both users.[204] However, the CCCS rejected these submissions on the basis that the claimed efficiencies were not merger specific.[205] In particular, the CCCS held that the parties had not shown that the efficiencies could not be attained by alternative scenarios such as signing up more drivers, incentivising more drivers to drive on a full-time basis, or providing more promotions to attract new riders that raise less serious competition concerns.[206] Furthermore, the CCCS argued that the parties had not demonstrated that higher network density could not be achieved via a multiplayer scenario where both drivers and riders can freely multi-home, so that any driver could be matched up with any rider on any platform.[207] Finally, the CCCS was of the view that none of the claimed efficiencies had been demonstrated or quantified.[208]

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201 "Administrative costs" refer to the practical resources that regulators, litigants and courts expend on cases under adjudication. Since the merger transaction between Grab and Uber had already been consummated, the CCCS would have had direct access to the price effects of the Transaction (and so would hardly spend any administrative costs on evaluating the merger), as opposed to the scenario where the Transaction had not taken place. See Jan Broulik, "Preventing Anticompetitive Conduct Directly and Indirectly: Accuracy *versus* Predictability" (2018) 64 *Antitrust Bulletin* 115.

202 See generally William H Greene, *Econometric Analysis* (Pearson Education, 2003).

203 Massimo Motta, *Competition Policy: Theory and Practice* (Cambridge University Press, 2004) at p 192.

204 CCCS ID at [322].

205 CCCS ID at [329].

206 CCCS ID at [329].

207 CCCS ID at [329].

208 According to the CCCS's Guidelines: "Merger parties must show that these efficiencies will be sufficient to outweigh the adverse effects resulting from SLC

(cont'd on the next page)

67 Given the prior finding that the Transaction had raised anti-competitive concerns due to the merged entity's ability to unilaterally increase prices, the failure of the parties to prove their claimed efficiencies ultimately cemented their liability. However, this leaves the question open as to how and whether the parties could have practically demonstrated the existence and magnitude of these efficiencies. Indeed, the CCCS's own Guidelines establish that parties may appeal to demand-side efficiencies where a merger "results in a greater number of users of a product … thereby increasing the value of the network".[209]

68 A merger of two competing platforms with positive and indirect network effects *will* raise the valuations of users on both sides of the merged platform. As mentioned earlier, on the rider side of the platform, post-merger riders will enjoy higher value from the post-merger increase in drivers. This, in turn, induces more riders into using the platform, which would in turn induce a (smaller) increase in the number of drivers, repeating a cycle until no further new users are induced to enter. A similar phenomenon occurs on the driver-side of the platform. The rise in these valuations, however, will also induce the merged platform to raise its price level across both sets of users.[210] Thus, an empirical question arises as to whether this post-merger rise in valuations exceeds the post-merger rise in platform fees (*ie*, whether $(b_{d(post)} - t_{d(post)}) + (b_{r(post)} - t_{r(post)}) \geq (b_{d(pre)} - t_{d(pre)}) + (b_{r(pre)} - t_{r(pre)})$).[211] If the answer to this question is yes, then the merger should be countenanced on efficiency grounds in spite of the platform's increase in market power.

69 Two observations are pertinent here. First, the CCCS's requirement, that the parties demonstrate that higher network density cannot be achieved via a multiplayer scenario where both drivers and riders can freely multi-home, is too onerous. Prior to the merger, both Uber and Grab had strong individual incentives to discourage multi-homing, and in fact did so through the use of exclusive contracts and loyalty rebates. Intuitively, the unilateral encouragement of multi-homing would decrease a platform's individual profits, vesting its rival platform with a greater market share. The CCCS should not have necessitated

caused by the merger." *CCCS Guidelines on the Substantive Assessment of Mergers 2016* (1 December 2016) at para 7.3.

209 *CCCS Guidelines on the Substantive Assessment of Mergers 2016* (1 December 2016) at para 7.6.

210 David S Evans & Richard Schmalensee, "Markets with Two-Sided Platforms" in *Issues in Competition Law and Policy* vol 1 (Wayne D Collins ed) (ABA Book Publishing, 2008) ch 28 at p 678.

211 See paras 24–31 above. See also David S Evans, "The Antitrust Economics of Multi-Sided Platform Markets" (2003) 2 *Yale Journal on Regulation* 325 at 376.

parties to prove conduct that would be individually irrational in the absence of the merger.[212]

70 Second, it is agreed that the parties did not discharge their burden of proof on the facts – a mere assertion that the gains in efficiency "would result in ex-post improvements in network design and experimentation" should not constitute sufficient evidence for this discharge.[213] However, merging parties would find it extremely difficult to procure direct evidence of any rise in post-merger valuations – both driver valuations (b_d) and rider valuations (b_r)[214] are dependent on subjective user preferences, and are completely unobservable by the competition regulator. In Part V below, several reforms which would allow merging parties to practicably demonstrate the existence and magnitude of these efficiencies are proposed.

V. Merger control and legal reform

71 This analysis illustrates the challenges that regulators face when evaluating mergers between two or more digital platforms. As the CCCS noted in its ID, "the commercial considerations behind whether to maintain effective price … at below-cost levels, and for how long, are complex".[215] Depending on its exact nature, the externality can either attenuate or exacerbate the anti-competitive effects that ordinarily arise in mergers between two or more platforms. However, as alluded to above, the avoidance of involved but necessary analysis is equally undesirable, with liability turning on impressionistic priors as opposed to rigorous, empirical inquiries. This is especially so in the usual instance of a proposed merger which has not taken place.[216] Here, the range of plausible outcomes is even broader – it is not uncommon to see disagreement amongst experts in the course of such litigation.[217]

212 This argument is similar to Turner's argument on why tacit collusion should be countenanced at law. See Donald F Turner, "The Definition of Agreement under the Sherman Act: Conscious Parallelism and Refusals to Deal" (1962) 75 Harv L Rev 655 at 665–666.

213 CCCS ID at [325].

214 See paras 24–31 above.

215 CCCS ID at [90].

216 Massimo Motta, *Competition Policy: Theory and Practice* (Cambridge University Press, 2004) at p 192.

217 For a view on why this is problematic, see generally Maurice Stucke, "Does the Rule of Reason Violate the Rule of Law" (2009) 42(5) UC Davis L Rev 1375 at 1427.

72 This article proposes a series of legal reforms to address this conundrum.[218] The starting point is that a presumption of illegality should be drawn in horizontal mergers where such mergers are likely to induce anti-competitive effects.[219] Such a presumption would also be accompanied by a legal obligation on merging parties to notify the CCCS of a proposed merger. For example, horizontal mergers could be deemed as *prima facie* anti-competitive if they cross certain concentration thresholds.[220] In this situation, merging parties would not be allowed to proceed with their proposed merger unless the CCCS provided them with clearance to do so. In contrast, merger notification is *voluntary* under the current competition regime – there is no mandatory requirement for merger parties to notify their merger situation to the CCCS, either before or after implementation of the merger.[221] Thus, merging parties have to carry out their own self-assessment of whether their conduct would infringe the Competition Act before deciding whether to notify a merger to the CCCS.[222] The voluntary nature of merger control in Singapore was ostensibly motivated by a bid to reduce regulatory and compliance costs.[223]

73 However, it is arguable that the voluntary nature of merger control indirectly led to the current (undesirable) state of affairs, where Uber and Grab took steps to consummate the merger *prior* to the CCCS's intervention.[224] Under a voluntary regime of merger control, the risk of anti-competitive consummation is ameliorated by the threat of harsh sanction. In other words, the effectiveness of a voluntary merger control regime is entirely dependent on the efficacy of *ex post* enforcement.[225] One reason for this is that unnotified mergers simply attract a far lower

218 The author is not suggesting that the Competition and Consumer Commission of Singapore is at liberty to impose these legal reforms at will. Rather, such reforms would be better implemented through legislative changes, say through the amendment of ss 57 and 58 of the Competition Act (Cap 50B, 2006 Rev Ed). See ss 57 and 58 of the Competition Act.

219 See *United States v Philadelphia National Bank* 374 US 321 (1963), where horizontal mergers that cover at least 30% of the relevant market are presumptively unlawful.

220 These thresholds would be similar to existing thresholds defined in the Guidelines, where the CCCS is generally of the view that competition concerns are unlikely to arise in a merger situation unless the merged entity will have a market share of 40% or more. See *CCCS Guidelines on the Substantive Assessment of Mergers 2016* (1 December 2016) at para 5.15.

221 CCCS ID at [51].

222 CCCS ID at [51].

223 *Singapore Parliamentary Debates, Official Report* (21 May 2007) vol 83 at col 726 (Lee Yi Shyan, Minister of State for Trade and Industry).

224 See paras 32–37 above.

225 Choe Chongwoo & Chander Shekhar, "Compulsory or Voluntary Pre-Merger Notification? Theory and Some Evidence" (2010) 28(1) *International Journal of Industrial Organization* 10 at 19–20.

probability of *ex post* competition enforcement. Wollman has examined the effects of changes made to such merger notification thresholds in the US.[226] After a 2000 amendment to the Hart-Scott-Rodino Antitrust Improvements Act of 1976 that changed the pre-merger notification threshold from US$10m to US$50m, Wollman found that regulatory investigation into mergers between US$10m to US$50m dropped from about 150 deals to zero.[227] Furthermore, Wollman also showed that the amendment created a strong incentive for firms below the new threshold to merge – after the amendment, horizontal mergers between the US$10m to US$50m thresholds increased by 50%.[228] It is noteworthy that all of these mergers continued to be, in principle, prohibited by the Clayton Act.[229]

74 The other concern with voluntary merger control regimes lies with the competition regulator's inability to *credibly commit* to harsh sanctions that would deter anti-competitive mergers.[230] Although the CCCS has the powers to unwind anti-competitive mergers under the Competition Act,[231] reversing consummated transactions in merger control is well known to be exceedingly costly and onerous on the firms involved.[232] These problems are compounded by the legal complexities involved in reversing "integrated" assets and personnel.[233] Daunted by the prospect of incurring these social costs, a competition regulator may simply refrain from imposing such draconian remedies after the consummation of the anti-competitive merger. However, this reduces the regulator's *ex ante* ability to punish anti-competitive conduct – merging parties may simply rely on the lack of harsh sanctions to push through with an anti-competitive merger if the expected benefits outweigh the

226 See generally Thomas G Wollmann, "Stealth Consolidation: Evidence from an Amendment to the Hart-Scott-Rodino Act" (2019) 1(1) *American Economic Review: Insights* 77.

227 Thomas G Wollmann, "Stealth Consolidation: Evidence from an Amendment to the Hart-Scott-Rodino Act" (2019) 1(1) *American Economic Review: Insights* 77 at 87.

228 Thomas G Wollmann, "Stealth Consolidation: Evidence from an Amendment to the Hart-Scott-Rodino Act" (2019) 1(1) *American Economic Review: Insights* 77 at 90–91.

229 15 USC (US) §12 (2002).

230 David Besanko & Daniel F Spulber, "Contested Mergers and Equilibrium Antitrust Policy" (1993) 9(1) *The Journal of Law, Economics, and Organization* 1 at 10–12 and 24.

231 Competition Act (Cap 50B, 2006 Rev Ed) s 69.

232 For example, in *Diamond Alkali Co* 72 FTC (US) 700 at 751 (1967), the Federal Trade Commission in the US gave up on separating the firm and instead required Diamond Alkali to wholly divest the problematic plant, which left only one firm in the cement-processing market.

233 John E Kwoka & Diana L Moss, "Behavioral Merger Remedies: Evaluation and Implications for Antitrust Enforcement" (2012) 57 *Antitrust Bulletin* 979 at 982.

expected costs. Indeed, the latter course of action seems to reflect the factual matrix in the case at hand.[234]

75 The regulatory and compliance costs of mandatory merger notifications under a presumption of illegality may be ameliorated with the correct identification of circumstances where anti-competitive effects are more likely to arise.[235] For instance, competition regulators around the world suggest concentration thresholds, beyond which horizontal mergers are likely to attract regulatory attention.[236] Of course, some of these mergers may have efficiencies or other pro-competitive effects that outweigh the anti-competitive concerns raised. However, so long as such presumptions are readily rebuttable, these regimes[237] are likely to be more efficient than voluntary merger notification regimes.

76 In so far as two-sided platform mergers are concerned, the nature of platform competition suggests that anti-competitive effects are likely to arise where the merging platforms face increasing returns to scale and positive network externalities, while lacking substantial countervailing efficiencies.[238] Thus, it is proposed that a presumption of illegality be drawn in horizontal platform mergers where such a merger crosses a certain concentration threshold and where the network externalities involved are positive. There is also no reason why the presumption of illegality should not also extend to the market definition – here, the presumed market should be defined narrowly, comprising the platform's direct competitors (ordinarily, other rival platforms).[239] Accordingly, merging platforms would have to notify the competition regulator of their proposed merger prior to the merger's consummation.

77 To reduce the incidence of "wrongful convictions", these presumptions should be rebuttable.[240] This would allow the merging

234 Kenji Lee & Allen Sng, "When an Irreversible Merger Flouts Singapore's Competition Law at Consumers' Expense" *Today* (10 October 2018).

235 Arndt Christiansen & Wolfgang Kerber, "Competition Policy with Optimally Differentiated Rules Instead of 'Per Se Rules vs Rule of Reason'" (2002) 2 *Journal of Competition Law & Economics* 215 at 231–234.

236 See generally Mark J Gidley & George L Paul, *Worldwide Merger Notification Requirements* (Aspen Publishers Online, 2008).

237 *Ie*, regimes which impose *both* (a) a presumption of illegality and (b) the mandatory notification of the merger once the merger in question crosses a certain legal threshold.

238 See paras 13–23 and 66–70 above.

239 In many instances, only rival platforms will play a similar catalysing function of bridging two sets of users together (as compared to one-sided competitors). See paras 45–53 above.

240 In the context of competition law, "wrongful convictions" would arise where a firm is erroneously held to be liable although it is factually not liable. Such an error is

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platforms to not only rebut the presumption of the narrowly defined market, but also the presumption of illegality itself, so long as it can adduce evidence that the network externalities are strong enough to substantially improve valuations for both sets of platform users.[241] Again, there should be a practicable way for defendants to discharge their burden of proof with regard to these efficiencies. For example, evidence that a substantial increase in new users on one side of the platform followed from a corresponding increase in users on the other side of the platform should suffice to rebut the presumption of illegality.

78 Under the proposed reforms, the CCCS would have a far stronger justification for constraining Grab's post-merger conduct. Indeed, liability in the ID seemed to have turned on impressionistic arguments as opposed to quantitative, empirical evidence that the post-merger fee level had increased without countervailing efficiencies from a more efficient fee structure.[242] The uncertainty behind the accuracy of the CCCS's decision was perhaps a factor in its recognition "that unwinding the Transaction [was] not a suitable or appropriate remedy".[243] Had the CCCS grounded its decision on a stronger basis of liability, it could have simply directed Uber to divest its assets to a third-party competitor (such as Ryde, Gojek or ComfortDelGro) at a pre-determined market price.

VI. Conclusion

79 Digital platforms are pervasive in modern life – ride-hailing platforms, online payment systems, e-commerce platforms, travel-booking platforms, and online exchanges are just some of these platforms that have fundamentally changed how we live, work, travel and play. However, digital platforms give rise to novel policy challenges, with unique economic characteristics that render many traditional regulatory techniques obsolete. In particular, "one-sided" competition analysis can give rise to serious policy errors when applied to digital platforms which have a "two-sided" nature. This article has critically examined the recent infringement decision of the CCCS regarding Uber's sale of its SEA business to Grab pursuant to the contemporary law and economics

also known as a "false positive", or a "Type I" error. See Tony G Poveda, "Estimating Wrongful Convictions" (2001) 18(3) *Justice Quarterly* 689 at 689–690.

241 Allowing defendants to rebut the presumption with cogent evidence would decrease the expected costs of "false positives", or "Type I" errors. See Arndt Christiansen & Wolfgang Kerber, "Competition Policy with Optimally Differentiated Rules Instead of 'Per Se Rules vs Rule of Reason'" (2002) 2 *Journal of Competition Law & Economics* 215 at 229.

242 See paras 54–70 above.

243 CCCS ID at [362]. The Competition and Consumer Commission of Singapore did not elaborate on why the Transaction could not be reversed or prohibited.

literature on two-sided digital platforms. While some aspects of the decision are laudable, the author suggests how the "two-sided" nature of the platform merger at hand could have been better incorporated in the CCCS's ID. Furthermore, the voluntary nature of merger control under Singapore's competition regime is ill-prepared to deal with platform mergers. It is suggested that a presumption of illegality should be drawn in horizontal platform mergers where anti-competitive effects are likely to arise. The presumption should be accompanied by a legal obligation on merging parties to notify the CCCS of their proposed merger.

80 The raw force of competition should not be underestimated. Since the decision in 2018, entry of new players into the market has occurred. A NUS Business School study[244] found that a large majority of polled commuters believed that the entry of new ride-hailing platforms provided them with more options, while 52% of them noted an improvement of ride-hailing services.[245] The proportion of drivers who were satisfied with incentives offered by ride-hailing platforms more than doubled as compared to the post-merger period. Indeed, given the ubiquity of the digital platform, this will not be the last platform merger that Singapore's competition regime will review.

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244 Centre for Governance, Institutions and Organisations, "Healthy Competition gives Singapore's Ride-Hailing Market a Boost: NUS Business School Study" (2 October 2019) <https://bschool.nus.edu.sg/media/press-release-details/584/> (accessed 13 June 2020).

245 Centre for Governance, Institutions and Organisations, "Healthy Competition gives Singapore's Ride-Hailing Market a Boost: NUS Business School Study" (2 October 2019) <https://bschool.nus.edu.sg/media/press-release-details/584/> (accessed 13 June 2020).