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Session III: Practical approaches to assessing digital platform markets for competition law enforcement

Approaches of the Superintendence of Industry and Commerce (SIC) to assessing compliance with competition rules in digital platforms markets

– Contribution from Colombia –

Summary: *The purpose of this document is to set out how the Superintendence of Industry and Commerce has approached the issues resulting from interactions between platform market agents. This will be demonstrated using cases which illustrate how the basic characteristics of digital platform markets make it difficult for the entity to carry out its competition-related duties.*

Keywords: *competition, digital platforms, two-sided or multi-sided markets, competition law.*

Introduction

1. According to data presented in the global digital report by Hootsuite and We Are Social, with regard to 2019, “45% of the world’s population are now social media users”. In the specific case of Colombia, around “34 million people are social media users” (Hootsuite and We Are Social, 2019). Based on the latest total population figures for Colombia issued by the Colombian National Administrative Department of Statistics (DANE), this means that approximately 70% of the Colombian population are using social media. As such, it can be said that digital platforms have become an important area for the national economy and therefore also for the competition authority.

2. There is global consensus regarding how the digital economy has altered market dynamics. The proliferation of business models driven by big data, the increase in returns to scale and the network effects which arise in digital ecosystems have had an impact on the way in which policies and regulations designed to protect free economic competition are perceived.¹ A question commonly raised during debates on the enforcement of competition law in digital markets has concerned the ability of the traditional tools of the economy and the law to precisely assess the interactions which take place in these markets² which are known to be highly dynamic and innovative and have full information inside each of the sides of the platform and network externalities. This is important because whether the competition authority intervenes in a specific market or not will depend on it having a full understanding of the environment in which the various different economic agents are acting.

¹ See Alexandrov, Deltas and Spullber, (2011), Eyler-Driscoll, Schechter and Patiño (2018), Hovenkamp (2019), *inter alia*.

² See Filistrucchi, Klein and Michielsen (2012), Caccinelli and Toledano (2018), *inter alia*.

3. The Superintendence of Industry and Commerce (hereinafter the “SIC”) will assert in this document that digital platform markets have had an impact on various tasks traditionally carried out by competition authorities in order to assess the competitive welfare of markets, for example: the definition of the relevant market, the determination of the market power of the agents competing for economic activity, and the identification of the nature and competitive or anticompetitive effect of the dynamics present in such markets.

4. To that end, it will demonstrate how, as Colombia’s national competition authority, the SIC has approached the issues resulting from interactions between platform market agents. This will be demonstrated using cases which illustrate how the basic characteristics of digital platform markets make it difficult for it to carry out its competition-related duties. This contribution will present: (i) two company integrations; (ii) various opinions issued for the defence of competition in markets for the sale of tourism and transport services; and (iii) one case which highlights the compliance-related challenges which platform markets pose for investigations into the possible occurrence of anticompetitive practices.

1. Problems

1.1. Definition of relevant market

5. Scenarios with digital platforms present a challenge for the traditional strategy deployed to define the relevant market. The tools for defining the degree of substitutability of the product are sometimes insufficient for thoroughly understanding the entire market structure,³ the behaviour of the agents involved and the outcome of their interactions when there are multiple sides. Whilst the traditional strategy should not be discarded, it is traditionally designed to deal with the dynamics of one-sided markets, which is why it fails to analyse network effects and various key contractual conditions relating to multi-sided markets.

1.2. Determination of market power

6. In order to determine the market power of each agent interacting on the multiple sides of a platform, the network externalities first need to be analysed. Studying the market conditions of just one side is not sufficient, and so the effect of the competitive pressures of the other sides of the platform,⁴ including the platform itself, have to be studied. The number of individuals present on each side of the economic environment and the market conditions under which they are acting have an indirect effect on all of the interactions that take place in platform ecosystems.

³ See Etgar and Goodwin (1982), Filistrucchi, Geradin, Damme, and Affeldt (2014), *inter alia*.

⁴ See Rochet and Tirole (2004), Tremblay (2017), *inter alia*.

7. The contractual conditions governing the interaction between the platform's agents are relevant because they determine each agent's incentives for participating in that market.⁵ In the event that competition authorities were to omit these circumstances and instead, making use of their preventive or corrective tools, intervened in markets which had balanced their incentives themselves, this could lead to an imbalance of objectives which support their very existence and which encourage the development of technological innovations.

1.3. Identification of anticompetitive behaviour

8. The platforms themselves are technological innovations which have changed the way in which users carry out transactions in markets. Consumers have access to more information relating to the goods and services which they are seeking to purchase through this medium. Providers have access to a larger number of consumers which they would not have if these new channels did not exist. These conditions which are specific to digital markets contribute to improving the information available for decisions to be taken by the agents located on each side of the market. For example, in contexts where full information is available, providers may carry out price discrimination because they know each consumer's willingness to pay,⁶ whereas in traditional contexts where information is incomplete such discrimination would be difficult to explain without considering a possible anticompetitive scenario. The challenge for competition authorities in this scenario will be to identify if the dynamics which are inherent in this type of market are procompetitive or anticompetitive and if any type of intervention is justified.

2. Cases

2.1. Company integrations and innovation

9. The assessment of this type of company integration highlights an additional degree of complexity compared to the traditional one in terms of defining the relevant market and the market power of the agents which constitute each side. The basic characteristics of multi-sided markets make it more difficult to determine the potential effects that completing an integration can have, even more so on platforms where there appear to be zero-price markets which, under certain conditions, turn out to be markets where consumers pay with their data.

10. Below are two approaches adopted by the SIC for assessing this type of operation which highlight the difficulties encountered when assessing the vertical effects which could result from the operation, with its possible exclusionary and exploitative effects. One of the cases considers the co-ordination between data protection and competition authorities with regard to an investigation into the establishment of a monopoly resulting from a technological innovation managed by three of the most powerful banking institutions in the Colombia financial services market. The other case recommends some lessons to be learned with regard to the establishment of optimum restrictive conditions designed to mitigate any vertical effects resulting from integration within the context of the digital economy.

⁵ See Wals and Schinkel (2018), Behringer and Filistrucchi (2015).

⁶ See Reed Shiller (2014).

2.1.1. Banks and digital identity platforms

11. In 2019, Bancolombia, Banco Davivienda and Banco de Bogotá, the country's three largest banks, requested that the entity responsible for supervising and monitoring the financial markets, the Colombian Superintendence of Finance (hereinafter the "SFC"), pre-assess a case of integration. The three banks intended to create a joint undertaking (hereinafter "NewCo") based on a technological innovation that would connect public and private institutions with citizens on a digital platform in order to exchange data required to certify their personal identity. NewCo is the first company which will provide the digital identity service in Colombia.

12. NewCo would be responsible for consolidating users' information contained in the different institutions that hold it in order subsequently to make it available to public and private institutions interested in having access to the information, subject to the user's authorisation. This operation could strengthen the decision-making process and minimise fraud risks which could then result in lower costs and greater efficiencies in general.⁷ For example, from a bank's point of view, it is useful to know which of the individuals who acquire financial obligations are actually able to fulfil them. If the bank has access to that information via an application capable of providing certainty surrounding the true identity of the individuals accessing its services, then it will know the likelihood of whether the individual will or will not fulfil their financial obligations. In that sense, the bank will be able to lend money at lower rates to individuals capable of fulfilling their obligations as it will not need to include time or investigation costs. This, in turn, will reduce losses resulting from unfulfilled obligations and will help consumers of such financial services obtain cheaper credit.

13. The SFC asked the SIC for an opinion which it would include in the analysis of the impact that the NewCo operation would have on the market. In order to deliver the opinion, the SIC studied the markets where the operation would have an effect: firstly, the financial services market, as this is the market in which the banks operate, and, secondly, the market for digital identification applications.

14. The SIC decided that the financial market would not be altered structurally since the new company would not be operating in this market together with the banks. However, NewCo provides the three largest banks in Colombia with an asset which differentiates them from their competitors, as it is the only platform in the market for digital identification applications. It is important to mention that, jointly, these banks have over 30 million active users (approximately 78% of the nation's economically active population for 2018⁸), which is a circumstance which could be relevant for the analysis of the network effects of the operation and the establishment of the market power both of the banks and of NewCo. As the network effects are positive, the more users (citizens and institutions) there are on the platform, the greater their benefits will be and the greater NewCo's power will be.

⁷ Communication filed under No. 19-110185-6 on 19 July 2019, Superintendence of Industry and Commerce.

⁸ *Ibid.*

15. Based on the foregoing, the SIC suggested to the SFC that it should place some conditions on the operation in order to mitigate any restrictive horizontal and vertical effects which could arise with regard to competition. With regard to NewCo's market power, the SIC highlighted the need for the new company to remain independent from its future shareholders (the banks) and highlighted its obligation to ensure equal and non-discriminatory treatment of the different clients and users of the new company.

16. It is worth pointing out that the SIC also recommended that the personal data of the clients and users of the new company be properly processed and protected. In particular, it highlighted the fact that the personal data and confidential information of the users or clients of the banks should not be migrated automatically or without consent to the new company. Such migration will require the prior, express and informed authorisation of the clients. This latter condition and the obligation to ensure the interoperability of new developments for the migration of users to other platforms at no additional cost resulted from the active participation of the personal data protection authority and the competition authority (which are part of the SIC), in the light of the role that personal data play in digital platform markets, especially on account of the volume of users and the corresponding amount of personal data involved in this specific case.

17. In conclusion, the SIC's recommendations were focused on preventing anticompetitive practices which could result from the NewCo operation in terms of (i) restricting new rivals from entering the market for digital identification applications; and (ii) the possible harnessing of market power in the financial sector in order to consolidate market power for NewCo with the data of its users.

2.1.2. Tickets and online platforms

18. In 2018, AVIANCA and PRICE RES notified the competition authority of their intention to set up a new joint undertaking by means of a company integration. AVIANCA is the largest airline in Colombia, and PRICE RES is a company which owns the country's fifth largest travel agency which primarily operates through the Tiquetes Baratos platform (www.tiquetesbaratos.com). The integration would consist in PRICE RES providing a technological platform to sell package holidays and other tourism services through AVIANCATOURS (the new company). It is important to point out that AVIANCATOURS would use the technology developed by PRICE RES to sell package holidays and tourism services. That technology would help AVIANCATOURS to operate as a digital platform with the goal of matching consumers with different baskets of tourism services, including flight tickets, hotel rooms and activities, etc.

19. In this scenario, the consumers and providers of these services (AVIANCA and its competitors in different segments) would positively benefit on account of the network effects that this platform would consolidate. Firstly, consumers could have access to a wider variety of products and services offered through the platform, as different tourism service providers would be competing on it. The same could also be said of the providers which would find a new group of users all concentrated in a single location.

20. Bearing in mind the way in which the new company would be operating, the SIC decided that AVIANCA, PRICE RES and AVIANCATOURS would overlap in terms of the provision of various vertically and horizontally related services. As such, it identified two relevant markets: (i) the market for intermediation in the sale and booking of package holidays and tourism services (in the case of AVIANCA, PRICE RES and AVIANCATOURS); and (ii) the market for the provision of technological solutions for booking package holidays and tourism services (in the case of PRICE RES).

Table 1. Products sold by AVIANCA, PRICE RES and AVIANCATOURS in Colombia

SERVICE	AVIANCA	PRICE RES	AVIANCATOURS
Passenger flights (both national and international)	X		
Provision of technological solutions for booking tourism services		X	
Sale and booking of (national and international) flight tickets	X	X	
Sale and booking of package holidays and other tourism services	X	X	X

Source: Extract from Resolution 60515 of 2018 of the SIC.

21. It is important to point out that, in determining the market power of the relevant agents (the current structure and that which could result from the integration), the SIC considered whether the revenue received from one single side or the revenue from the multiple sides of PRICE RES (www.tiquetesbaratos.com) should be taken into account. It also assessed the vertical effects of the planned integration: the impact of AVIANCA's market power on the different sales channels of its tickets, one of which was already PRICE RES, and the new AVIANCATOURS. With regard to this specific point, the SIC identified a risk of price discrimination on the part of AVIANCA which, by occupying a dominant position in the market for the sale and booking of flight tickets, would be able to preferentially favour its brand over its competitors.

22. Based on the foregoing, the SIC authorised the integration subject to the fulfilment of various conditions designed to mitigate any risk of possible anti-competitive vertical effects of the integration. AVIANCATOURS was obliged not to sell national or international flight tickets on their own directly or through its subsidiaries. The idea was to prevent AVIANCA from becoming the sole provider of flight tickets on the platform. Secondly, AVIANCA's national and international tickets would have to be offered under equal conditions to potential competitors of AVIANCATOURS. This condition was imposed in order to prevent the market from being closed off to other sales platforms.

23. Understanding how integrating a technological solution into a business model could affect the current structure of the market in this case involved assessing the vertical and horizontal effects of the integration. Specifically, the main issue which the SIC resolved consisted in deciding if AVIANCA's dominant position could create an imbalance in terms of the competition conditions in the market for online tourism agencies which AVIANCATOURS would penetrate. Studying the horizontal relationships was not enough to resolve it, and so an analysis of the potential vertical effects and the relationship between the economic agents present on the platform also had to be carried out. If AVIANCA were not part of one of the sides of the digital platform, perhaps its role in the structure of the market would not be so relevant, as it would not be in a position to exert competitive pressure on the link in the distribution channels.

2.2. Defence of competition

24. Regulatory analysis relating to the defence of competition has presented some major challenges when it comes to including the network effects that are behind the development of technological innovations such as digital platforms capable of having a swift impact on traditional market dynamics. In this context, recognising the efficiencies that platforms generate is essential in order to guarantee the healthy development of markets. These markets develop quickly, which is why it is important to ensure that any revamp of the regulatory framework does not distort the incentives that are behind the innovation processes.

25. Below is a brief presentation of some of the issues generated as part of the competition authority's analysis of draft regulations which have affected markets in which digital platforms play a major role. The SIC's participation in the regulatory process developed for the inland public transport market in its specific format (hereinafter "taxi") and the travel agency market will also be presented.

2.2.1. Tourism service agencies and digital platforms

26. In 2010, the entity responsible for supervising and regulating the aviation sector, the Special Administrative Civil Aviation Unit (hereinafter "AEROCIVIL"), regulated the market for the sale and booking of flight tickets in order to ensure that tickets were being distributed under equal conditions between travel agencies and airlines. AEROCIVIL stated that airlines would be obliged to "provide access" to the national and international airfares that they offer through their direct distribution channel to travel agencies, regardless of the channel used. This therefore implicitly defined a condition of fare parity between airlines and travel agencies.

27. In 2018, AVIANCA, the country's largest airline, asked AEROCIVIL directly to revoke the regulation because it felt that the obligation of fare parity conflicted with free economic competition. In this context, the Colombian Government and the association of travel agencies (ANATO) asked the SIC for its opinion on the intended approach.

28. In order to provide its opinion, the SIC considered the arguments put forward by AVIANCA for requesting the revocation. According to AVIANCA, the regulation imposed two obligations on it. Firstly, it was being prohibited from selling tickets with lower fares through its direct channels compared to the fares being offered to travel agencies. Secondly, it was being forced to grant travel agencies access to the fares of its direct channels. For AVIANCA, both obligations were preventing it from offering lower fares to its consumers, since the effect of being forced to offer travel agencies tickets based on fare parity was that the cost of the ticket through AVIANCA's direct channel would internalise the costs generated by the actual intermediation resulting from the travel agencies' business model.

29. In order to provide its opinion, the SIC took the context surrounding the regulation into account and decided that its contents at the time sought to promote the travel agency sector. In that sense, the obligation of the airlines to "provide access" to the fares of their tickets relieved competitive pressures amongst the different ticket sales channels. However, the SIC studied various international cases where governments removed obligations with similar content from their regulations and it did not result in the exclusion of travel agencies from the market but, by contrast, in fact made them more efficient.

30. For the SIC, the issue posed by the direct revocation of the regulation meant that a decision needed to be made as to whether removing the condition of fare parity would have negative effects on the competitive dynamics of the market for the sale of flight tickets. It concluded that the condition of fare parity removed competitive pressures amongst the different flight ticket sales channels, which has a negative impact on the welfare of consumers who acquire the good at higher average prices. As such, the market power which the agencies currently exercise is unjustified because it is maintained only as a result of the existence of the regulation. Without that condition, the travel agencies would have greater incentives to provide their services more efficiently, and AVIANCA could vigorously compete with lower prices on the market.

31. The SIC suggested that the regulation be directly revoked in order to improve competitive dynamics amongst the different flight ticket sales channels. It also raised the need to draw up a regulation which would permit access to information relating to flight ticket fares without that translating into a clause on fare parity.

32. One aspect which needs to be highlighted in this contribution relates to the impact that the specific way in which competition authorities resolve issues resulting from markets which operate with digital platforms can have on the market. In order to understand this point, it should be remembered, as mentioned, that in 2018 the SIC subjected the integration between PRICE RES (Tiquetes Baratos) and AVIANCA for the creation of AVIANCATOURS to certain conditions. On that occasion, the SIC felt it necessary to establish a condition for equal treatment by AVIANCA with respect to potential competitors of AVIANCATOURS in order to prevent any possible abuse of a dominant position which could come to exist on account of the fact that AVIANCATOURS would be a subsidiary under its control in that link in the value chain. Such condition would guarantee competition amongst the different flight ticket sales channels under equal conditions.

33. The action taken by the SIC within the context of the PRICE RES – AVIANCA – AVIANCATOURS integration, which, in short, imposes an obligation not to carry out discrimination between flight ticket distribution channels, could be deemed, at first sight, to conflict with the opinion issued regarding the direct revocation of AEROCIVIL's regulation. In fact, whilst the integration was subject to the obligation not to carry out discrimination between equivalent operations in order to protect competition, the opinion concluded that imposing conditions of fare parity would prevent the adequate development of competitive dynamics. However, the difference in the contexts in which each statement was made prevents there being any contradiction. The statement on the integration is due to the need to mitigate any supervening effect that the integration could have on the structure of the market. The second, conversely, resolved circumstances relating to economic efficiency in the sense that, without the obligation of fare parity, the transactional costs would be reduced and would therefore improve conditions for the consumers.

2.2.2. *Taxis vs. apps*⁹

34. Between 2015 and 2018, the SIC provided its opinion on the impact that various draft regulations relating to the taxi market would have on free economic competition. These draft regulations intended to introduce technological solutions into that market which would enable consumers' and providers' information needs to be met. To that end, they proposed (i) creating the transport category of luxury taxis operating through digital platforms¹⁰ and (ii) defining the minimum standards required for a platform to be able to operate in that market within the national territory¹¹.

35. The first point to mention is that the SIC felt that the creation of a luxury category would further segment the taxi market and exacerbate the issues relating to supply constraints in the market. This is because vehicles authorised to provide this service cannot supply the demand, resulting in dissatisfied consumers and a fall in the quality of the service provided. The second point to mention is that the SIC decided that the regulation on the technical standards that digital platforms needed to meet in order to operate in that market was excessive and, in many cases, unjustified. Imposing very strict conditions on the development and design of technological platforms restricts free private initiative in these markets, limits innovators' creativity and delays innovation processes.

36. The issues tackled by the SIC in the matter were related to the co-ordination of a regulatory balance to guarantee equal conditions in the competitive process in the taxi market. This is the only way to prevent, as far as possible, potential obstructions to the development of the market, free private initiative and technological innovation. In order to establish a proper balance between free economic competition and technological innovation, the SIC suggested to the regulators of this market that they avoid issuing any regulations which would further restrict the supply of vehicles which provide this service. This, of course, cannot imply any disregard for the rules established for the authorisation of operators in this market, but it must be ensured that the development of technological innovations is not restricted. Finally, the SIC informed the Colombian Government that the recommendations made by the SIC regarding the defence of competition were not taken into consideration for the implementation of those draft regulations.

2.3. Compliance with regulations for the protection of free competition

37. Another major issue that the competition authority has with regard to platform markets concerns access to information regarding transactions, contracts and other types of interaction carried out on platforms. This information is relevant for the authorities' approach, as it can help with the detection of new types of behaviour designed to limit free economic competition. The problem is that, in many cases, the companies responsible for storing, using and utilising the platform's information are not located in the geographical area where the economic interactions take effect. This circumstance significantly limits competition authorities' ability to take effective action in order to ensure that the market functions properly.

⁹ Competition advocacy opinions filed as 14-280358, 16-137076 and 18-229656.

¹⁰ Draft decree modifying book 2, part 2, title1, chapter 3 of Decree 1079 of 2015, Single Decree Regulating the Transport Sector.

¹¹ Resolution 2163 of 2016, Decrees 630 of 2016, 456 of 2017 and 568 of 2017, together with resolutions 220 of 2017 and 103 of 2018.

38. The reason why this issue exists is related to the global nature of the markets analysed and of the technology on which they are based. Faced with this global nature, competition authorities in their individual capacities have only local influence and the power to act locally.¹² In the SIC's experience, it would be beneficial to promote systems for collaboration between the various competition authorities in order to analyse, based on better evidence and with better capacity and information, the special dynamics offered by markets which operate via digital platforms.

39. For the purposes of this contribution, it is advisable to highlight the action taken by the SIC in response to the issue discussed in this section. Faced with this barrier, the entity deployed a mechanism set out in Colombian competition law which, in addition to stopping behaviour intended to hamper investigations, can also be used to send a general warning message to the market. Based on the mechanism in question, on 8 August 2019, the SIC imposed a fine on UBER COLOMBIA and some of its agents of almost USD 630 000. This fine was imposed because, in pursuit of a corporate policy designed to limit the authorities' access to the company's relevant information, the company and its agents managed to hamper the course of the investigation which sought to determine if its conduct in the market could have constituted restrictions on free economic competition.

40. The key point in this type of action is that, over and above the methodological issues involved in the strategy which competition authorities deploy for dealing with digital platform markets, access to the information relating to the interactions within these markets is also limited. The situation is worse if there is not sufficient collaboration on the part of the companies or co-ordination between competition authorities to be able to implement all the necessary arrangements to provide and obtain the necessary information for carrying out their duties. Defining a joint strategy on the best approach for the competition authorities of Latin America and the Caribbean to disruptive innovations relating to technological platforms will, without doubt, represent major progress in the quest to be able to establish not only the limits and scopes of each country's regulations but also the limits of the actions of these new players in different markets with a view to protecting free competition.

3. Conclusions

41. In recent years, the SIC has adopted important approaches to analysing competition in digital platform markets. These experiences have been of paramount importance because they (i) involved learning processes; (ii) resulted in co-ordinated efforts between the authorities responsible for ensuring compliance with personal data legislation and competition legislation; and (iii) helped to explain the importance of this type of platform for the development of markets and technological innovation.

42. Finally, it is worth pointing out that, while this document consolidates the SIC's most recent relevant experience with digital platform markets, there are still major challenges. These include (i) fine-tuning the set of economic tools traditionally deployed to study these markets; (ii) implementing big data and computerised algorithms in the public interest; and (iii) continuing to work jointly with personal data protection authorities, consumer protection authorities, other supervisory and monitoring bodies, other regulators and competition authorities at global level.

¹² See Eleonor Fox (2009).

References

- Alexandrov, A., Deltas, G., and Spullber, D. (2011). Antitrust and competition in two-sided markets. *Journal of Competition Law & Economics*, 775-812.
- Behringer, S., and Filistrucchi, L. (2015). Areeda-Turner in two-sided markets. *Review of Industrial Organization*, 287-306.
- Caccinelli, C., and Toledano, J. (2018). Assessing anticompetitive practices in two-sided markets: The Booking.com cases. *Journal of Competition Law & Economics*, 193-234.
- Etgar, M., and Goodwin, S. A. (1982). One-sided versus two-sided comparative message appeals for new brand introduction. *Journal of Consumer Research*, 460-465.
- Filistrucchi, L., Geradin, D., Damme, E. V., and Affeldt, P. (2014). Market definition in two-sided markets: Theory and practice. *Journal of Competition Law & Economics*, 293-339.
- Filistrucchi, L., Klein, T. J., and Michielsen, T. O. (2012). Assessing unilateral merger effects in a two-sided market: An application to the Dutch daily newspaper market. *Journal of Competition Law & Economics*, 297-329.
- Fox, E. (2009). Linked-In: Antitrust and the virtues of a virtual network. NYU Center for Law, Economics and Organization.
- Hovenkamp, E. (2019). Platform Antitrust. *Journal of Corporation Law*.
- Reed Shiller, B. (2014). First-degree price discrimination using Big Data. Brandeis University, Department of Economics and International Business School.
- Rochet, J., and Tirole, J. (2004). Two-sided markets: An overview. *Mimeo*.
- Rochet, J., and Tirole, J. (2008). In P. Buccirossi, *Handbook of antitrust economics* (pp. 543-582). The MIT Press.
- Tremblay, M. (2017). *Market power and mergers in multi-sided markets*. Taken in 2019 from <https://pdfs.semanticscholar.org/f616/50eb348e876eba72df68b299172822838ae8.pdf>
- Wals, F., and Schinkel, M. P. (2018). Platform monopolization by narrow-PPC-BPG combination: Booking *et al.* *International Journal of Industrial Organization*, 572-589.