

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

Cancels & replaces the same document of 29 September 2016

PRICE DISCRIMINATION

-- Background note by the Secretariat --

29-30 November 2016

This document was prepared by the OECD Secretariat to serve as a background note for Item 7 at the 126th Meeting of the Competition Committee on 29-30 November 2016.

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More documentation related to this discussion can be found at www.oecd.org/daf/competition/price-discrimination.htm

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JT03402711

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PRICE DISCRIMINATION

*Background note by the Secretariat**

Abstract

In recent years the scope for near perfect price discrimination, particularly in the digital economy, appears to have grown. This raises a question over how those jurisdictions in which exploitative price discrimination is an offence will respond. In contrast, the risk of price discrimination distorting downstream markets does not appear to have changed, and instead the debate has been on whether the rules and case law have an economic basis, and if not, how agencies might prioritise cases. In this paper, we set out the benefits of price discrimination as well as the concerns over its potential exploitative, distortionary, and exclusionary effects and describe analytical frameworks for assessing these, as well as possible remedies. We distinguish these cases from those investigations where there is a different policy rationale, such as fairness or another policy goal.

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1. Introduction

1. Price discrimination occurs when two similar products, which have the same marginal cost to produce, are sold by a firm at different prices. Price discrimination is typically good for the economy and, providing it does not exclude rivals, it often benefits consumers by increasing trade and driving firms to compete. However, it can also harm consumers when dominant firms use it to exploit their market power, or when it distorts competition in downstream markets.

2. In recent years, the scope for exploitative price discrimination between final consumers has grown, particularly in the digital economy (see chapter 9). This raises a question over whether those jurisdictions in which exploitative price discrimination is an offence will need to respond by stepping up enforcement (and if so how they might assess such cases). In contrast, the risk of price discrimination distorting downstream markets does not appear to have increased, and instead the debate in this area, see for example the recommendations of the Antitrust Modernisation Committee, has been whether the rules and case-law that exist have an economic basis, and if not, how agencies might respond in their prioritisation of cases.

3. In this paper, we set out the concerns over exploitative, distortionary, and exclusionary effects of price discrimination and describe analytical frameworks for assessing each type of case, as well as remedial options available. We focus on exploitative and distortionary effects since the role of price discrimination within exclusionary abuse of dominance has been much discussed.¹ We also draw some tentative conclusions on the strength of these concerns in order to help agencies think about prioritisation decisions.

4. The sensible decision, which many agencies have taken, is to adopt a default view that price discrimination is typically beneficial. Given the ambiguity of the effects on consumers, agencies should not be tempted to move away from this consensus. However, as with conduct that is typically harmless but in some cases exclusionary, this does not mean that this type of conduct should never be challenged.

5. In relation to *exploitative* price discrimination for example, there appears to be a significant discrepancy between rules that give agencies significant freedom to challenge such schemes, and the enforcement stance that agencies adopt. This may reflect the excessive breadth of those rules, for example the lack of limitations with a solid basis in economics. Perhaps this leaves agencies wary that it is too easy to make mistakes and prohibit schemes that may in fact not be harmful. If that were the case, then guidance on the limitations that would be applied, either when prioritising cases; or when investigating a case, would be useful. Alternatively, perhaps there is a fear of creating a chilling effect on beneficial price discrimination schemes. If so, then it should be recognised that price discrimination may not involve a reduction in price, and so the risk that investigating discrimination will create an unwelcome chilling effect on firms' pricing behaviour is of a different magnitude to the risk in predatory pricing cases. As such, concerns over chilling effects should not lead agencies to avoid enforcement in those cases where the facts suggest significant harm to consumers.

6. As increasingly sophisticated price discrimination schemes allow dominant firms to become better at exploiting their market power through personalised pricing, and the potential for static harm to consumers grows, it seems increasingly important for agencies to satisfy themselves that the theoretical dynamic benefits from permitting these schemes are in fact verifiable. This might mean, for example, examining whether the market power that is better exploited through price discrimination is in fact built on behaviour that benefits consumers in the longer term, or whether it reflects rent-seeking activities, investment in more effectively price discrimination, or exploitation of consumers' behavioural biases. In doing so, agencies might reflect that the remedial options that are open to them may not be limited to unattractively crude and often counterproductive price regulations or non-discrimination requirements.

Instead, targeted remedies might specifically address the cause of the increased ability to exploit market power, rather than the consequence, for example by addressing the partitioning behaviour itself, or advocating against distortions created by government that facilitate the exploitation.

7. Whether or not the rules that exist are excessively broad, they are the rules that have been put in place, and, at least in some circumstances, there are legitimate reasons for them being there. As such, there may be a risk that not enforcing them creates a vacuum in which pressure for a significantly less cautious approach to enforcement builds. In the event that an economic framework for investigating exploitative price discrimination were to be adopted, it would therefore appear sensible to draw on the framework suggested in section 4 and use screens such as; dominance; personalised prices; a lack of output expansion; and observed action to partition the market.

8. In relation to *distortionary* price discrimination cases are slightly more common and, perhaps as a result, much progress appears to have been made in both the US and Europe to limit the scope of these rules. While this progress has perhaps been constrained by the wording of the original prohibitions, it would nevertheless be preferable to reduce the focus that remains on whether or not there has been “injury to competitors” and to emphasise instead injury to competition and hence consumers.

9. Finally, as different evidentiary standards might apply, it is also advisable to distinguish from the beginning those cases where price discrimination is investigated as abusive conduct within a relevant market, and those where there is an entirely *different policy rationale* for the investigation, such as fairness or another policy goal.

10. The paper begins in section 2 by examining the different types of price discrimination that firms use. In section 3, it then explains why price discrimination is often beneficial. Sections 4, 5 and 6 identify the potential for consumers to be harmed by exploitative, distortionary and exclusionary price discrimination, review the legal treatment of such schemes, and set out a framework for analysing those effects. Section 7 discusses other rationales for investigating price discrimination. Section 8 considers the possible remedies and section 9 looks at the increasing scope for discrimination in the digital economy. Section 10 concludes.

2. What is price discrimination?

11. The legal definition of price discrimination in Europe is where a seller applies “dissimilar conditions to equivalent transactions.”² In the US, the Robinson Patman Act challenges differences in price that do not meet one of a specific set of defences.³ These include the difference reflecting: differences in costs; differences in services provided by the buyer (e.g. warehousing or distribution); the changing nature of the product (e.g. perishability); the need to meet an offer by the competition; or the fact that the different price was available to all.⁴

12. In economics, price discrimination occurs when two similar products, which have the same marginal cost to produce, are sold by a firm at different prices.⁵ The meaning of the word “similar” in this definition is important, since products may differ in quantity,⁶ quality,⁷ purpose,⁸ over time,⁹ and in the circumstance in which they are sold.¹⁰ The need for the same marginal cost means that price discrimination does not include pricing differentials for products that are cheaper to produce due to economies of scale or scope, or due to lower risks of the purchaser.¹¹

13. Price discrimination can refer to both the price setting decision itself, and the implementation of a price discrimination scheme. For instance, a firm might simply choose to set different prices, or it may also take actions that go beyond simply setting different prices in order to more effectively partition the market.

For example, it may make it difficult for buyers to resell the product or it may invest in better identifying individual consumers' willingness to pay.

14. A partitioning strategy might involve dividing national markets,¹² however it may also include: partitioning the markets for large and small volume purchases; partitioning the markets for naïve and sophisticated consumers;¹³ partitioning the markets for tickets purchased by pensioners and families; or in extremis partitioning markets for each individual consumer.

15. There are a number of different types of price discrimination and we set these out below.

2.1 Different types of price discrimination

2.1.1 Economic categories of price discrimination

16. Price discrimination is traditionally categorised as being first, second or third degree.¹⁴ First-degree discrimination, or perfect price discrimination as it is known, involves a firm setting a price for each product that equals each consumer's willingness to pay for that product. Perfect price discrimination has traditionally been considered to be a theoretical concept – though as we will see later it may be one that can be better approximated through the use of big data. In contrast, near perfect price discrimination or personalised pricing is already observable. This involves setting a price on the basis of individual characteristics (rather than the characteristics of a group). These characteristics will not perfectly capture each consumer's willingness to pay but they may be sufficient to approximate it. Examples of near perfect price discrimination include personalised discounts on list prices (studentships) that US universities use to set tuition fees. The characteristics used to set these personalised discounts might include a means test based on parental income, student test scores, and the prospective future income as a graduate of the course in question.

17. Second-degree discrimination involves a firm setting a menu of prices for different versions of the product. Discrimination here is indirect since the choice of version lies with the consumer and not the seller.¹⁵ These might include for example; business vs. economy class air travel; tablet vs. dissolvable pharmaceuticals; and standard vs. non-standard plans.¹⁶ It would also include two-part tariffs since in those schemes the price that the consumer pays is based on the quantity of the product that it purchases.

18. Finally, third-degree discrimination involves a firm setting different prices for different groups of consumers with different observable (perhaps temporary) characteristics. Traditional examples include lower prices for pensioners, children or students, or lower prices to consumers in different countries (see antiretroviral drugs in lower income countries).¹⁷ However, the group might also be defined as: those purchasing in a certain area (see New York's restrictions on the zone-pricing strategies of petrol stations); or a certain store; or in a given set of circumstances (restaurants with lunchtime special deals; Coca Cola's experiments with vending machines that increase prices in hot weather;¹⁸ or during an emergency).¹⁹ In markets with network effects groups of early adopters or buyers on one side of the market might face lower prices than those on the other.²⁰

19. An alternative categorisation identifies static, dynamic and intermediary price discrimination.²¹ Static discrimination occurs when all products are purchased within a single period. It includes non-anonymous discrimination between different groups of consumers with different observable characteristics (traditional third degree discrimination). It also includes quantity discounts and bundled or tied discounts (traditional second-degree discrimination).

20. Dynamic discrimination includes intertemporal discrimination in which the price differs over time. For example, a firm may set an initially high price for a book in order to sell at a higher margin to the most enthusiastic purchasers; however, over time it may reduce this price to make additional profitable sales to those that place less value on the book.²² It also includes behavioural discrimination in which the

price differs depending on the consumer's behaviour over a period of time. This "behaviour" may simply be a customer's purchasing history from the firm (for example whether they still purchased when the price was higher and thereby revealed a higher willingness to pay), alternatively it might include a wide set of actions (or inactions) taken by the consumer over time. We discuss the growth of this form of price discrimination in the digital economy in section 9.²³

21. Finally, there can be intermediary discrimination in which the discrimination is in the pricing of inputs to downstream firms rather than to final consumers. For example, in many intermediate markets, prices are reached not through a seller setting a price but through a process of bilateral negotiation. These may often result in different sellers facing different prices. This distinction can be useful as there can be additional concerns over discrimination between intermediaries that do not apply to discrimination between final consumers (see section 5).

2.1.2 *Legal categories of price discrimination*

22. By looking across different jurisdictions it is apparent that there are broadly three levels on which rules on price discrimination can apply. From these three levels, we identify four categories of concern over price discrimination.

23. The first is "primary-line injury". Here the concern is that the price discrimination directly harms a rival, and this may in turn damage competition and thereby generate indirect harm to customers. The second is "secondary-line injury" which directly harms the customers of the firm.²⁴ The third category is based on concerns over fairness, or on other policy goals, rather than concerns over the effects of market power.

24. In the past, some primary-line injury cases included cases in which the interests of competitors (often small "mom and pop" stores) were explicitly protected against the impact of competition from larger retail chains, despite the damaging impact this might have on consumers.²⁵ In modern times however, primary-line injury cases have been limited by courts to those that cause injury to a rival *in the course of* harming consumers.²⁶ This removes the scope for them to include protectionist cases and means that primary-line injury cases can now be equated to exclusionary conduct abuse cases.

25. Secondary line injury cases directly harm the customer; these do not require harm to a competitor and can therefore be considered non-exclusionary cases. Within non-exclusionary (secondary-line injury) cases we can observe two distinct legal concerns. In some jurisdictions such as the US, these rules are limited to prohibiting distortionary price discrimination, whilst in others (for example Europe and Japan) they have a wider remit and can prohibit exploitative price discrimination (including actions taken to facilitate exploitative price discrimination).

- Exploitative price discrimination exploits a firm's market power and therefore can lead to consumers in that market paying higher prices or receiving lower quality products. Price discrimination can exploit a firm's market power in either upstream or downstream markets. However where the exploitation is of upstream market power an agency might need to show that there is an impact on the welfare of final consumers (pass-through), rather than only the intermediate customers (for example reduced profits for intermediaries might not constitute harm depending on the jurisdiction's welfare standard).
- When a firm exploits its market power in an upstream market it may also constitute distortionary price discrimination if it damages or distorts competition in a downstream market and therefore leads to worse outcomes for customers in that downstream market. Price discrimination can only be distortionary if it occurs in an upstream market; it cannot distort competition between customers if the customers are final consumers that do not compete with one another.

26. We examine these four categories of price discrimination (exploitative, distortionary, exclusionary, and those based on fairness, or other policy goals) in sections 4, 5, 6 and 7 respectively.

2.2 *Necessary conditions for price discrimination*

27. For any type of price discrimination to occur there are three necessary conditions.

28. Firstly, the firm requires a downward sloping demand curve. If the firm operates in a perfectly competitive market, it will take the market price and will not be able to set different prices. Therefore, some element of market power is required. This however need not be significant market power, and it should be emphasised that there is no correlation between the extent of price discrimination and the extent of market power.²⁷

29. Secondly, if different prices are to be charged to different buyers it must be the case that arbitrage is difficult. The possibility of arbitrage, in which those buyers that pay a low price for the product resell the product to buyers who would otherwise pay high prices, removes the ability of the producer to profitably set a higher price to any buyer. Arbitrage may be difficult as a result of the intrinsic nature of the product, for example a product that perishes quickly, or it may be made artificially difficult or expensive, for example through restrictions on resale or engineered incompatibility.

30. Finally, a firm wishing to price discriminate needs to have a way to estimate or identify a consumer's valuation. As described in the categorisation above this might be based on observable characteristics or information that it has available, or it may involve allowing the consumer to reveal something about their valuation (by selecting the quantity or quality of the product, or by purchasing at a certain time or in certain conditions). If the consumers are entirely anonymous and homogenous in their purchases, the firm will not be able to set different prices.

31. Given this combination of necessary conditions, the presence of price discrimination can often provide a useful indication to agencies that there are different relevant markets that need examining. For example in a merger inquiry, price discrimination across different geographic areas may well indicate the existence of different local markets. This is because it illustrates that arbitrage is difficult, demand is downward sloping, and consumers are identifiable, and hence that a small but significant price increase can be profitably sustained by a firm (who may not be a hypothetical monopolist) in certain geographic areas. However, this will not always be the case, and as we note below, price discrimination can increase competition, particularly when different firms set higher prices to different sets of consumers (see section 3.2).²⁸

3. *Why is price discrimination often a good thing?*

32. The use of the word "discrimination" may create an assumption of unfairness and scepticism over the likely benefits of firms charging different prices for similar products. However, there is nothing intrinsically unfair about price discrimination; it can mean that more consumers are served and that those on lower incomes pay lower prices. Some form of price discrimination is used in the vast majority of markets, it is frequently used by firms with little market power, and discrimination often makes markets more competitive. This means that it is advisable for agencies to start with a default, but rebuttable, presumption that any given price discrimination scheme has a benign or beneficial impact on consumers. In this section, we briefly explore the literature on when price discrimination is good for consumers, and when it is not.

33. Economists have since the 1930s been trying to find clear testable rules that identify when price discrimination benefits consumers. They have found that there are broadly three ways in which price discrimination can benefit consumers. Firstly, it can increase output and ensure that more consumers face

prices that allow them to purchase. Secondly, it can increase competition (and hence reduce prices and increase output). Thirdly, it can create dynamic incentives for actions such as investment or innovation that benefits consumers.²⁹ We consider each of these in turn, and then briefly review empirical findings on the effect that price discrimination has on consumers.

3.1 *The impact of price discrimination in the monopoly*

34. In the absence of competition, allowing a monopolist to price discriminate can increase output by allowing it to set lower prices for a group of consumers that would otherwise not purchase. If price discrimination is not perfect this discrimination increases consumer welfare, that is to say, if the price does not equal each consumer's valuation of the product, then the discrimination allows additional consumers to purchase the product for a price that is less than that which they would have been willing to pay for it.

35. However, while this discrimination might increase output, it would also lead to a higher price for the group of consumers that were willing to pay more for the product, and this higher price would exceed the price that some of these consumers are willing to pay. As a result, those consumers would not purchase the product despite valuing it more than the new consumers who purchase the product at the lower price.³⁰ As a result, discrimination can also be inefficient since the market fails to allocate the scarce supply of the product to those that value the product most. This means that one clear test for identifying the impact of discrimination on consumers is to ask whether the discrimination significantly increases output or not.³¹ The test is one-sided since the conclusion remains ambiguous if discrimination does significantly increase output (in contrast if it does not then the discrimination is unambiguously harmful in the absence of dynamic efficiencies, see section 3.3). However, the test is generalisable, it does not depend on the degree of market power, it can be verified ex-post, and it can help to identify cases in which we can be confident that there is consumer harm (at least under a static analysis).

36. An interesting example can be found in the UK Competition Commission 1999 inquiry into the supply of milk. This identified that European quotas fixed the supply of milk in the UK. One distributor, Milk Marque, held nearly a 50 percent market share, and was heavily engaged in price discrimination to its buyers. However, its total output was fixed by the quota arrangements, and so this discriminatory pricing did not increase output. As a result, the Commission found that the price discrimination was likely to harm consumers.³²

37. In addition, price discrimination also leads to a transfer from consumer welfare to producer welfare. For example, the gains from trade for those consumers that would purchase in any case (the surplus or gap between price and willingness to pay) are transferred to the producer (as profit).³³ This does not necessarily mean that consumer welfare in aggregate falls, since if output increases there may be additional welfare created for other consumers. It also does not necessarily reduce total welfare. However, it may do so if, in order to obtain the increased producer welfare, firms invest in rent-seeking activities (for example lobbying government) or in maintaining and improving the ability to discriminate (for example preventing arbitrage or tracking consumers' willingness to pay).

3.2 *The impact of price discrimination in an oligopoly*

38. Price discrimination can also benefit consumers by increasing competition.

39. Firstly, the ability to price discriminate can increase competition between firms. One such case can be illustrated in the classic model of two firms with differentiated products that are located at either end of a straight line and can observe the location of their customers, classically a beach with an ice cream seller at either end.³⁴ The first seller is preferred by those customers already sitting near to it, and is the second choice for those customers sitting closer to its rival.

40. If the sellers can see where the consumers are located and discrimination is possible then the sellers have an incentive to reduce the unilateral price that they would otherwise charge to those that are located closer to their rival in order to compensate them for having to travel further to purchase from them. They can do so profitably because they know who sits further away and they can prevent these customers from reselling the product. At the same time, the seller would like to charge higher prices to those consumers that are closer to them and so would find it more convenient to purchase from them. However, if a seller expects that its rival will offer lower prices to its nearest consumers in order to poach them, then if it wishes to keep them it can no longer maintain such a high price to those consumers. It therefore has to reduce the price it charges these nearby consumers to a level that discourages them from travelling further to the rival seller in order to retain them. At the same time, it would still have an incentive to attempt to poach consumers that are more distant by setting prices lower than the price it would charge if discrimination were not possible, in the hope that they would decide to incur the additional travel cost. As a result, where price discrimination is possible, all of the consumers face lower prices than they would face if discrimination were not possible, this is because the firms would then each set their uniform price at a higher level in order to maximise the profit they earn from their local consumers.³⁵ The ability to discriminate can be seen as creating a prisoners dilemma game in which each firm individually prefers to cut the price it sets to customers that will otherwise not purchase from it (in order to poach them from its rivals). However, by doing so they lead the rival to cut its price to those consumers, and hence to total industry profits falling.

41. A key factor in this particular scenario is that the rival firms have different views on the consumers to whom they would like to offer a low price (this is known as the weak segment of the market), and the consumers to whom they would like to set higher prices (this is known as the strong segment of the market). In contrast, it might be the case that the firms are located next to one another and therefore share the same view of how they would set discriminatory prices. In that case price discrimination would instead increase industry profits (and reduce consumer welfare unless there is a large output increase) in the same way that it does when the seller is a monopolist (as discussed above).³⁶ Other examples in which price discrimination can increase competition include markets where firms seek to poach customers that have in previous periods purchased from rivals.³⁷

42. Secondly, where price discrimination helps to increase competition this protects consumers from losing surplus to the producer. This is true even where perfect price discrimination is possible and firms know everything there is to know about the consumer. This is because while the consumer would lose any surplus under the residual demand curve of the firm, the residual demand curves for individual firms would be more elastic in more competitive markets, reflecting the fact that each firm has little room to set its own price and is largely governed by the prevailing market price. This means that even if a firm knows the consumer's willingness to pay, the consumer would lose just the small surplus under the firm's demand curve and would still receive the larger surplus under the market demand curve.

43. While there are no easy tests to identify circumstances in which consumers benefit from price discrimination in imperfectly competitive markets, the literature does suggest that in competitive markets there is generally less scope for price discrimination to harm consumers. This suggests that if there is enforcement on discrimination then a focus on discrimination by dominant firms is sensible.

3.3 *The impact of price discrimination on dynamic incentives*

44. Where price discrimination increases profits it can, like excessive pricing, create incentives for firms to engage in activities that they expect will help them to secure the opportunity to earn these greater profits. This might therefore improve dynamic efficiency by encouraging competition in investment in innovating and reducing costs. These innovations may benefit consumers and also generate positive externalities if other firms subsequently adopt them.³⁸

45. In addition to creating incentives to innovate, price discrimination can also create an important incentive for a monopolist to invest in projects with fixed costs. These can be unattractive investments if the firm expects that it will have to set price at marginal cost since in that case it would not cover the costs of the investment and so will not make efficient investments. A regulator may therefore want to allow the monopolist to set prices that allow the monopolist to recover sufficient revenue to cover those costs. In that case, the least distortionary price structure is one that charges higher prices to those purchasers with less elastic demand and lower prices to those with a more elastic demand. Therefore, by allowing price discrimination a regulator might incentivise a monopolist to make efficient investments in projects with high fixed costs.³⁹

46. However, while increasing the profit that firms are able to earn might benefit consumers in some cases, in others it may not. For example, while firms might respond by investing in innovation, they might instead increase their investment in rent-seeking to obtain or maintain anti-competitive protection from government. In other cases, firms may invest in improving the effectiveness with which their price discrimination scheme extracts consumer surplus, for example by investing in more sophisticated personalised pricing schemes or preventing arbitrage.⁴⁰

3.4 *Empirical evidence on the impact of price discrimination*

47. Since economic theory suggests the impact of price discrimination is ambiguous and depends to a large extent on market specific details there is no broad hypothesis for the empirical literature to test. However, the research that has been conducted on specific markets does illustrate that it is feasible for agencies to estimate the prices, profits, and consumer welfare that might be expected in the absence of price discrimination.

48. A number of papers compare prices, revenue or consumer welfare where price discrimination occurs with a simulated case where firms have to set a uniform price. Others take the opposite approach and attempt to simulate what prices might look like if firms used price discrimination.

49. In a paper that compares observed discriminatory prices with a simulated uniform price, Beckert et al (2016) suggest that the intermediary brick market in the UK fits the model of competition between geographically differentiated products described in section 3.2.⁴¹ This is because the location of the site to which an order of bricks is to be delivered is observable to the producers who operate their own geographically differentiated brick producing plants. Consistent with that model, the simulation suggests that prohibiting brick sellers from price discriminating would increase average prices by nearly 12 percent (and reduce total welfare by nearly 24 percent).

50. Similarly, Grennan (2013) estimates a model of supply and demand in the US market for coronary stents. The paper finds that price discrimination by the manufacturers between the different hospitals that purchase stents increases competition between those manufacturers and hence increases the welfare of the purchasing hospitals.⁴² This suggests that there are risks in prohibiting price discrimination or forcing transparency over prices that are agreed through bilateral negotiation.

51. Nevo and Wolfram (2002) examine the market for ready-to-eat breakfast cereals in the U.S and find some evidence that is consistent with models in which, when price discrimination is allowed, competition drives firms to reduce all prices below the level they would be if the firms set uniform prices. For example, results suggest that when both manufacturers offer coupons prices are low and about equal.

52. In another case, a Hotel and Casino in Las Vegas was identified as using price discrimination to increase its average day rate price by 10 percent, while increasing the occupancy rate by approximately 6 percent (Cuddeford-Jones, 2013). This illustrates the scope for price discrimination in competitive markets,

particularly those with fixed capacity, to benefit consumers by increasing the number that are served, whilst at the same time charging higher prices and extracting more consumer surplus from those that would purchase in any case.

53. In wholesale gasoline markets, Hastings (2008) finds that the average price would rise by approximately 5 percent if firms could not price discriminate, while the quantity sold would decrease by 5 percent. Similar work on university tuition fees suggests that price discrimination has increased revenue by up to 9 percent (Waldfogel 2015). In contrast, revenue from cinemas increased by between 1.4 and 4 percent depending on the type of discriminatory scheme adopted (Chu, Leslie and Sorensen 2011)

54. As noted, there has also been research that simulates the impact of introducing price discrimination. This is inevitably more speculative given the endless possible price discrimination schemes that might be experimented. Nevertheless, it again illustrates the scope for prices to increase and hence the potential for consumers to be harmed in the absence of significant dynamic benefits. For example, Shiller (2014) suggests that Netflix could increase its profits by 12 percent by personalising its pricing using big data (5000 different web-browsing variables). This increase in profit was estimated to reduce consumer welfare by 8 percent. Similarly, by discriminating iTunes might increase its revenue by between 50 and 66 percent, while reducing consumer surplus by 25-33 percent (Shiller and Waldfogel, 2011). This might suggest that the impact of increasing price discrimination in digital markets could be significant.

55. The proposition that price discrimination is driven by competition is also tested in a number of papers. For example in regional Swedish newspaper markets, Asplund (2008) find that price discrimination through discounted subscriptions is be more common in more competitive markets. In particular, monopoly newspapers sell half as many subscriptions at a discount as those that face a local rival. Moreover, an inverse relationship between market share and the use of discounts is identified. Similarly, in airline markets, research finds that in more competitive markets airlines make greater use of price discrimination as a strategy, for example the average price difference for two seats on the same plane on a more competitive route is 36 percent of the average price on that plane (Borenstein and Rose, 1994).⁴³

4. Price discrimination that can harm consumers: exploitative price discrimination and partitioning strategies that facilitate it

56. There are a number of reasons why competition authorities might investigate price discrimination or practices that facilitate it. As suggested in section 2.1.2 there are four broad categories of concern over price discrimination: exploitative, distortionary, exclusionary, and those based on fairness or other policy goals. In this section, we examine how the first of these (exploitative price discrimination) might harm consumers and how it might be analysed. In sections 5, 6 and 7 we then examine the other three categories. We begin by looking at the exploitative concerns that agencies may have when firms set discriminatory prices or take actions to partition the market in order to set discriminatory prices.

4.1 *The difference between exploitative discrimination and partitioning strategies that facilitate it*

57. Many countries have rules that give competition agencies the ability to address exploitative price discrimination and the strategies that facilitate it. In this section, we identify the potential concerns and explore how to analyse these allegations. We begin by clarifying the difference between exploitative price discrimination itself and partitioning strategies that facilitate exploitative price discrimination.

58. Since market power is the ability to raise price above marginal cost, and that can be acquired, strengthened, protected and exploited, there has traditionally been a division of antitrust enforcement of unilateral conduct into behaviour that exploits market power, and behaviour that helps acquire, strengthen or protect market power.

59. On one view, exploitative price discrimination is simply conduct in which a firm with a significant degree of market power sets prices that maximise its profit. It does not change the degree of market power or lead towards monopolisation. What this view misses however is that there are also non-exclusionary unilateral actions (or ‘partitioning strategies’) that can help a dominant firm not to profit maximise, but to *change the profit maximising price(s)*. These actions increase its mark-up, and, as noted by Vickers,⁴⁴ Elhauge,⁴⁵ and Nalebuff, price discrimination schemes that enable firms to raise mark-ups also increase market power and can therefore help create “a more powerful monopoly”.⁴⁶ As noted in section 2 these actions might be labelled partitioning strategies.⁴⁷ The relevance in this distinction between setting prices that maximise profit, and conduct that strategically invests in partitioning to change the profit maximising price, is that strategic actions by firms to acquire greater market power in order to raise prices is often a more significant concern for agencies than profit maximising behaviour (even if it involves “excessive” prices). Seen in this light, these partitioning strategies might therefore require more attention than they receive when price discrimination is interpreted by agencies as simple profit maximising behaviour.

60. What might these partitioning strategies involve? They might include taking steps to prevent arbitrage, or to distinguish between sophisticated and naïve customers,⁴⁸ as well as gathering and analysing data on individual consumer’s willingness to pay for a product. These actions might be used by the firm to partition a market, increase average mark-ups and hence market power. Where this exploitation (which may or may not be facilitated by a partitioning strategy) occurs in an upstream market, there is also a risk that the conduct is distortionary. We explore those risks in section 5.

4.2 The potential concerns over exploitative price discrimination and partitioning strategies that facilitate it

61. First and foremost, most jurisdictions’ unilateral conduct rules are based on the principle of protecting the interest of consumers. As discussed in section 3, price discrimination at least by dominant firms can lead to consumer surplus being redistributed from consumers to shareholders, thereby harming consumers, at least in the short term.

62. Secondly, the dynamic incentives from allowing firms to increase their profits will not always benefit consumers. For example, some of the dynamic incentives created are harmful. For example, they include greater incentives to rent-seek through lobbying, and greater incentives to invest in partitioning activities that facilitate better discrimination (as well as exclusion and the strengthening of consumers’ behavioural bias).

63. Thirdly, there may be ‘gap cases’ in which firms have built market power through anticompetitive mergers or conduct that slipped through gaps in the rules. As an example of the latter, anticompetitive conduct rules in the EU apply only to dominant firms (unlike the US where a firm does not need to be already dominant in order to be found to have engaged in exclusionary conduct that monopolises a market). There is therefore a risk that non-dominant firms in the EU might legally engage in anticompetitive exclusionary conduct that creates illegitimate market power. Given these rules, it cannot be presumed that any market power that is identified must necessarily have been acquired through non-exclusionary behaviour. Since under these rules, a firm’s market power might be based on anticompetitive behaviour, consumers may benefit from investigations that fill this gap in the rules, for example investigations into the exploitation of market power (for example through price discrimination cases). Another example of such a gap in the rules might be mergers cleared on public interest grounds that might result in higher prices.

64. Fourthly, there may be cases in which firms have built market power through anticompetitive mergers or conduct that slipped through gaps in the enforcement of the rules. This rationale therefore

applies even in the US where the rules do not leave any gaps. Merger assessment in particular is inevitably a prediction based on the foreseeable events at the time of the assessment. Mistakes can be made, and unforeseeable or low probability events may occur. The existence and scope for such cases is for example evident in ex-post evaluations that identify post-merger price rises,⁴⁹ as well as the US Federal Trade Commission's retrospective challenge to the merger of Evanston Northwestern Healthcare Corporation and Highland Park Hospital.⁵⁰

65. Fifth, while rational consumers may be expected to protect themselves against exploitative price discrimination by firms with market power, there may be a concern that consumers with behavioural biases might be vulnerable to paying more than they are willing to pay for a product (artificially shifting the demand curve outwards), and that market power might increase this risk. For example, consumers may be vulnerable to 'drip pricing' strategies and confusing or unpredictable contingent charges.⁵¹ Where anticompetitive exploitative behaviour such as price discrimination relies upon behavioural biases strategies that strengthen biases might be of concern to competition agencies. In addition, the ability of firms with market power to price discriminate and extract the full amount that consumers are willing to pay (the consumer surplus under this artificially inflated demand curve) might be expected to increase the incentive to adopt these strategies. Competition agencies (as well as consumer protection agencies) might therefore be concerned if these distortions of the demand-side of the market damage competition, increase the profits of dominant firms, and reduce consumer welfare.

66. Sixth, there may be scepticism that markets in which exploitation is occurring can be relied upon to self-correct. In that case, the harm to consumers may last for longer than a short period. For example, even if barriers to entry are low, a monopolist might nevertheless continue to charge prices that extract the whole consumer surplus, without this necessarily attracting entry. This is because it is not the incumbent's pre-entry price, but its likely post-entry price that determines whether a profitable entry opportunity exists.⁵²

67. Where exploitative price discrimination occurs between intermediate purchasers there may also be concerns about the impact on downstream consumers. For example, final consumers of the unfavoured intermediary are likely to pay higher prices if the intermediary is able to pass through the discriminatory price to final consumers (even if it forms a relatively small part of the price of the final good). However, the overall impact on consumer welfare might also be positive for the same reasons set out in section 3. For example, it may be that discrimination means that additional intermediaries are served (in which case additional consumer markets might be served, or competition within existing markets will be increased).

4.3 The legal standard on exploitative price discrimination and partitioning strategies that facilitate it

68. Many countries include restrictions within their competition regime on the ability of firms to exploit market power and price discriminate in certain circumstances.⁵³

69. The set of circumstances in which exploitative price discrimination is prohibited is perhaps narrowest in the US. There, many states have limited price-gouging laws that can limit price discrimination that includes charging an excessive price in areas affected by an emergency.⁵⁴ There are also examples of simple prohibitions on geographic or zone pricing discrimination (for example, petrol stations in New York). More generally at the federal level the monopolisation offense in the Sherman Act is usually thought of as requiring that a monopolist have engaged in exclusionary conduct to achieve, maintain, or enhance its market power. This means there are no grounds for examining the exploitative effects of a price discrimination scheme. However, some have suggested that exploiting monopoly power by price discriminating (for example by tying and raising the price of the tied product) would violate the Sherman Act. The logic being that: "to the extent that the firm engages in price discrimination, it becomes a more

powerful monopoly. Thus even a firm that has earned its monopoly by being the best product on the market starts to cross the line and monopolise the market when it engages in price discrimination”.⁵⁵ As such, it might be argued, though many would disagree, that an exploitative price discrimination scheme might be interpreted as violating section 2 of the Sherman Act.

70. It has also been suggested that in future, in order to respond to the public’s increasing concern about widening inequality, the FTC could “conclude that monopoly pricing or price discrimination targeted at less advantaged consumers can be an unfair practice in violation of Section 5 of the Federal Trade Commission Act, even if the market power was legitimately obtained.”⁵⁶

71. In Europe the letter (c) in article 102 that specifically identifies discrimination (on price or terms), is broadly drawn and therefore potentially includes a restriction on a dominant firm’s ability to sell to buyers at different prices (or with different terms). However, this potentially broad reach has rarely been exercised and Peeperkorn (2008) for example identifies that Article 102 has never been applied directly and exclusively to the exploitative effects of price discrimination by a dominant firm. Instead, in practice, it has been used to address non-exclusionary price discrimination based directly or indirectly on the nationality or residence of the customer.⁵⁷ Where this discrimination occurs in upstream markets, it might be identified as primarily a distortionary rather than an exploitative case (see box 3 in section 5 on *Aéroports de Paris*). However, downstream (and hence exploitative) discrimination is in certain circumstances prohibited under article 102. For example, discrimination that directly impacts final consumers is explicitly discussed in the Commission’s France 1998 World Cup decision:

“[w]hile the application of Article 82 [now 102] often requires an assessment of the effect of an undertaking’s behaviour on the structure of competition in a given market, its application in the absence of such an effect cannot be excluded. Consumers’ interests are protected by Article 82, such protection being achieved either by prohibiting conduct by dominant undertakings which impairs free and undistorted competition or which is direct[ly] prejudicial to consumers. Accordingly, and as has been expressly recognised by the Court of Justice (citing Continental Can), Article 82 can properly be applied, where appropriate, to situations in which a dominant undertaking’s behaviour direct[ly] prejudices the interests of consumers, notwithstanding the absence of any effect on the structure of competition.”

72. In addition to a lack of case law, there has been no guidance from the Commission on how it investigates or prioritises non-exclusionary (exploitative or distortionary) abuses.⁵⁸ It therefore remains unclear what the legal standard in Europe for exploitative price discrimination that directly harms final consumers is. What is clearer is the legal standard in cases such as *United Brands*, which involve upstream geographic discrimination between customers that do not compete with another, but where partitioning conduct is identified.⁵⁹ Here the European Courts have applied what appears to be a *per se* approach.⁶⁰ In such cases, the lack of any downstream competition means these cannot be distortionary cases and so the offence is based on an exploitation of market power. However, in these cases, the focus on nationality/residence suggests that the concern appears to reflect the Court’s specific concern to protect the single market (as we discuss in section 7). It is therefore not clear whether the court would adopt the same approach were the Commission to present it with evidence of partitioning conduct that facilitates exploitative price discrimination based not on national boundaries, but for example on personalised prices.

4.4 *How to analyse allegations of exploitative price discrimination and partitioning strategies that facilitate it*

73. In this section, we offer a framework to help assess whether a price discrimination scheme, and any partitioning strategies that facilitate it, is abusive or not. This framework includes four steps:

confirmation, static analysis, persistence, and analysis of dynamic incentives. We also suggest screens that might be useful for prioritising potential cases.

74. The first step is to confirm whether a pricing scheme is in fact discriminatory. As discussed in section 2 a difference in price is not sufficient. A scheme is only discriminatory if similar products, with the same marginal cost, are sold by a firm at different prices. An understanding of the costs of the products is therefore required and any efficiency savings that the seller gains from selling to larger chains should be assessed at this stage. Note however that this does not require a view on whether prices are “excessive”.⁶¹

75. The second consideration is whether the scheme is harmful to consumers in a static analysis. This means identifying its immediate effect on consumer welfare.⁶² For example, we can be confident that the short-term impact on all consumers will be harmful in a static analysis if the scheme does not increase the firm’s (and hence total) output.⁶³ Given the ex-post nature of the investigation, empirical evidence should help identify the impact of the scheme on output. Depending on the case, identifying the appropriate counterfactual may not always be straightforward. In those cases, evidence on output trends prior to the scheme, and trends in similar markets that may be affected by similar shocks or co-founding factors would help to build a view of the counterfactual.

76. In order to understand the magnitude of any static harm that might be identified at this stage it is useful to assess the market power of the firm in question. As noted in section 3.2 significant market power or dominance, while not a necessary condition for harm, is a good indicator of the magnitude of harm in a static analysis. In addition, the magnitude of harm to consumers under a static analysis is likely to be larger where prices are personalised since this maximises the ability of the firm to extract consumer surplus.

77. The third step is to understand whether the exploitation, if it has been found to be harmful in a static analysis, is transitory and can therefore be expected to be resolved by the market or not. This would include an assessment of how long the scheme has persisted thus far, as well as talking to buyers and sellers in order to understand whether it is likely to continue. This would reveal, for example, whether the firm is protected by barriers to entry (e.g. network effects) or has invested in partitioning the market. This assessment would also address the question of whether in this market information is available to indicate to potential entrants the relative efficiency of the incumbent, and if not, whether pre-entry prices are a reliable signal of post-entry prices and hence whether potential entrants can identify profitable entry opportunities that may arise. For example, a potential entrant might observe an incumbent firm price discriminating without the protection of an exclusionary strategy or a barrier to entry. In that case, the incumbent may be price discriminating while the opportunity exists, but likely to respond to entry by cutting its price to remove the scope for profitable entry. Alternatively, if the incumbent is less efficient or it is difficult to adjust prices, then the incumbent might not be able to respond to entry by cutting prices. In that case, observing exploitative price discrimination could provide a signal that a profitable entry opportunity exists.

78. The fourth step is to identify the source of the price discrimination. This step is crucial because it identifies the dynamic incentives that are created if the agency permits the discrimination and any partitioning strategies that facilitated it. For example, if the discrimination relies upon a partitioning strategy in which the firm invested in making arbitrage more difficult, then the dynamic incentive from permitting the discrimination would include investing in preventing arbitrage. If the scheme has been identified as harmful under a static analysis, then this investment would not be expected to benefit consumers, and hence the dynamic incentive would not mitigate the static harm. In a remedial stage, an investigation could then seek to preserve any beneficial dynamic incentives that might also exist by only taking steps to make arbitrage easier, rather than by simply prohibiting differential prices.

79. Equally if the discrimination is possible not as a result of partitioning by the firm but instead because the firm has received favourable treatment by government (or government rules that make

arbitrage difficult) then the dynamic incentive would include investing in rent-seeking by lobbying the government. In contrast, there are a number of other potential sources of price discrimination where additional investment could benefit consumers in the long-term. For example, the firm might face a steeper downward sloping demand curve because of its success in innovating. In that case, the dynamic incentive might be to compete by investing in innovation. In those cases, the longer-term impact on consumer welfare of the scheme would be positive and this might be expected to outweigh the static harm that was identified in step two.⁶⁴

80. In some cases, the direction of these dynamic incentives may not always be obvious. For example if the discrimination has been facilitated by investing in collecting and analysing big data that improves the firm's ability to personalise *both* the service and the price, then there is a question as to whether the incentive to invest in personalising services and prices is on balance beneficial for consumers. Examples of non-price benefits might for example include personalised recommendations. It should not be assumed however, that *any* increase in quality, however marginal, would necessarily outweigh the extraction of consumer surplus through higher personalised prices.

81. Given this framework for investigating exploitative price discrimination, it would appear sensible to use a number of screens when considering potential cases. For example, these might include: (a) a lack of output expansion, (b) dominance of the firm, (c) the use of personalised prices, and (d) alleged action to partition the market.

5. Price discrimination that can harm consumers: distortionary price discrimination

82. When price discrimination occurs upstream, there is an additional risk that the difference in prices causes a distortion in competition amongst downstream input purchasers, and that this damages the competitive process, resulting in higher prices for final consumers. This potential for damage to competition in the downstream market means that most jurisdictions have rules that address this risk, even those that have no rules on exploitative price discrimination.

5.1 The potential concerns over distortionary price discrimination

83. There are broadly two reasons to worry about upstream price discrimination having distortionary effects in downstream markets. While in some cases other concerns may have driven the creation of the rules that apply to distortionary price discrimination,⁶⁵ it is these two concerns, each with an economic basis, that provide cause for agencies to remain open to complaints on this issue.

84. The first concern is that price discrimination by a dominant firm in upstream input markets might in some cases lead to more efficient firms being charged a higher price, while less efficient firms are charged lower prices.⁶⁶ For example, the most efficient downstream firms might have less elastic demand for the input (their demand does not change when the price changes), than less efficient downstream firms do. Perhaps their efficiency is based on operating at high capacity and they cannot reduce volumes without becoming less efficient. In any case, if their demand is less elastic, then a dominant producer might charge them higher prices because the most efficient way to recover fixed costs is to charge them to customers with less elastic demand (see section 3.3 on Ramsey pricing principles).⁶⁷ This would result in less efficient downstream firms being charged lower prices, which might mean they produce more output than they should, while at the same time, the more efficient downstream firms pay higher prices and produce too little output. Productive efficiency would therefore be damaged and downstream prices would be higher than they should be.

85. Similarly, if downstream firms expect that if they become more efficient this will lead to them having less elastic demand for inputs, and that this in turn will lead to them being charged higher input

prices, then these downstream firms would invest less in becoming efficient. This reduced investment could then damage dynamic efficiency and hence harm consumers.

86. The second concern is that downstream firms might make inefficient decisions while trying to negotiate lower input prices from a dominant upstream firm. For example, if the upstream firm discriminates based on the outside options of the downstream firms, then it might be the case that it charges a downstream retail chain a lower price because they can credibly threaten to backwardly integrate into upstream production.⁶⁸ If this integration is inefficient then the discrimination that follows may lead to *all* wholesale prices increasing.⁶⁹ The intuition is that the credibility of the outside option means the seller sets prices subject to the constraint of allowing the downstream retail chain a profit that is just sufficient to make backward integration an unattractive strategy. However if the seller is able to price discriminate, it will increase the price to other local stores (that lack the credible outside option of being able to backwardly integrate if their profits fall). This in turn will increase the profits of the retail chain because it will increase its sales at the expense of these local stores; and this allows the seller to increase the price that it charges the retail chain while continuing to ensure that the retail chain earns the level of profit that it needs to in order to make backward integration unattractive. As a result, all intermediaries pay higher prices and we can expect that final consumers would therefore also pay higher prices.

87. However, if the upstream market is more competitive then the results can differ significantly from those described above. For example, competition can induce firms to offer better prices to their most efficient customers (rather than to less efficient customers). Therefore, in common with the literature described in section 3.2, this suggests that price discrimination in competitive markets is likely to be beneficial to consumers.⁷⁰

5.2 *The legal standard on distortionary price discrimination*

88. Most countries include rules within their competition regime that address the risk of price discrimination having a distortionary effect in downstream markets.

89. In the US, the Robinson-Patman Act prohibits sellers from offering different prices to different purchasers of “commodities of like grade and quality” when the “effect of such discrimination may be substantially to lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination, or with customers of either of them.” The act states that different prices can only be offered when the lower price: (a) is available to all purchasers; (b) reflects lower costs; (c) meets (but does not beat) a competitor’s price; or (d) reflects changing conditions affecting the market or marketability of the goods.

90. The Act has been much criticised. In its report in 2007, the Antitrust Modernisation Committee (AMC) recommended repealing the Robinson-Patman Act in its entirety on the basis that it is fundamentally inconsistent with the antitrust laws and harms consumer welfare.⁷¹ This followed a White House Task Force report in 1969 and a Department of Justice report in 1977 recommending repeal or substantial modification of the Act due to the Act’s high costs, limited or non-existent benefits, and inconsistency with other antitrust laws.

91. The AMC recognised that price discrimination can have beneficial or harmful impacts, depending on the circumstances. However, it said that the Robinson-Patman Act was not targeted at harmful price discrimination. Rather, it condemned low prices:

“Congress prohibited price discrimination where the effect may be “to injure, destroy, or prevent competition with any person . . . or with customers of either of them.” Courts have interpreted

this language to mean that an injury to an individual competitor through price discrimination is sufficient to prove a violation of the Act.⁷² This is inconsistent with the purpose of the antitrust laws as interpreted by the courts.

In 1948 the Supreme Court held that the Robinson-Patman Act “was intended to justify a finding of injury to competition by a showing of injury to the competitor victimized by the discrimination.” Moreover, the Court held, competitive injury could be inferred (the “Morton Salt inference”) in secondary-line RP Act cases. Simply showing that some merchants had to pay more than others was “adequate” to conclude that “the competitive opportunities of certain merchants were injured,” the Court held. Therefore, to achieve an inference of competitive injury in a secondary-line RP Act case, the Morton Salt inference requires that a plaintiff prove only that a “favored competitor received a significant price reduction over a substantial period of time.”

Most courts have applied the Morton Salt inference broadly, concluding that the statutory language of “competitive injury” in the Robinson-Patman Act refers solely to injury to an individual competitor, not to overall competition in a relevant market. Under this standard, it does not matter if the defendant can show that competition in a relevant market in fact was not harmed.”

92. While the act has not been repealed, there has been just one case taken by the FTC in the last 25 years,⁷³ though private actions are not uncommon (see boxes 1 and 2 below), and the only intervention from the agencies in recent years has been to file an *amicus curiae* brief declaring that certain older cases that it had led were no longer good law.⁷⁴ Furthermore, the scope for plaintiffs earning significant damages has been reduced through the Supreme Court ruling that a successful plaintiff would not win ‘automatic damages’ equal to the amount of discount that they did not receive, but instead would need to base damages on the sales that were lost as a result of the discrimination.⁷⁵

Box 1. Cash & Henderson Drugs vs. Johnson & Johnson⁷⁶

Twenty-eight retail pharmacies alleged that Johnson & Johnson had price discriminated against them in favour of Health Maintenance Organizations (HMOs) and pharmacy benefit managers. The pharmacies claimed the discrimination caused them to lose customers to the favoured buyers.

In this case, the Second Circuit Appeal Court placed great emphasis on the word “substantially”. It said that competitive injury can be shown in two ways: “[1] showing substantial discounts to a competitor over a significant period of time, known as the Morton Salt inference, or [2] proof of lost sales to favoured purchasers.”

The plaintiff undertook an extensive analysis to match customers that had purchased one of the specified drugs from a favoured buyer within 6 months of the last time they filled a prescription at one of the twenty-eight pharmacies. However, the court took the view that the proportion of matched customers that was found to have been lost was de minimis (at most this was less than 3 percent).

The pharmacies also claimed the Morton Salt inference since there was evidence that substantial discounts had been made over a considerable period. This inference suggests that where substantial discounts had been made over a considerable period it can be inferred that competitive injury must have been incurred. However, the court decided that the evidence of de minimis switching that been presented rebutted the Morton Salt inference. The court therefore dismissed the claim.

The analysis here clearly illustrates the unreliability of the Morton Salt inference. However, it also poses a question as to whether identifying switching between the customers should be required in order to identify harm to competition. For example, why focus only on those customers that initially used the unfavoured purchaser? Might consumers not choose between retailers and then stick with their selected retailer unless prices change? Furthermore, if there had been more switching between the two, would the court then have examined the competitive constraints from other retailers in the relevant market? Overall, this focus on “injury to competitors” creates a risk of missing the impact on competition and hence consumers within the relevant market

Box 2. Reeder-Simco vs. Volvo Trucks (2006)⁷⁷

When seeking to purchase custom-made heavy-duty trucks, customers in the US typically ask retailers to bid competitively against one another. Retailers then typically seek discounted wholesale prices from manufacturers in order to improve their chance of winning the contract. Customers may seek bids from multiple retailers of the same brand of truck though this is relatively rare.

Reeder-Simco (a retailer) alleged that Volvo Trucks discriminated against it by offering other retailers larger discounts and that it lost out on sales and profits as a result of this discrimination. It suggested that Volvo Trucks did so in order to reduce the number of Volvo retailers. It showed that in one set of competitive tenders Volvo had given it smaller discounts than it gave to other Volvo retailers in other competitive tenders. Volvo's policy stated that it gave equal discounts to retailers when they bid for the same tender. Reeder-Simco also said that in a second set of tenders it had twice bid against another Volvo retailer. It explained that in one of these cases (in which neither retailer won the bid), Volvo increased the discount it gave to Reeder-Simco to match the discount it had offered to the rival retailer. In the other tender, Volvo gave both retailers the same discount and the rival won the contract. Volvo then subsequently gave the rival a larger discount to reimburse the customer for an intervening price increase in the cost of Volvo trucks.

On appeal, the Supreme Court said the Robinson Patman Act does not prohibit all price differences charged to different purchasers of a product. Rather, it proscribes price discrimination only to the extent that it threatens to injure competition. The Court found that in the first set of tenders Reeder-Simco had not shown competitive injury because it did not compete against rival Volvo dealers for these tenders. It said that although Reeder-Simco may have competed with other Volvo dealers for the opportunity to submit a bid, this type of preliminary competition was not affected because no discount had been sought at this stage. The Court found that once a retailer was asked to bid, the relevant market became the tender itself (based on the particular needs of the customer). Therefore, unless the customer asked more than one Volvo retailer to bid, the different Volvo dealers were not in the same market and were not in direct competition with one another. It said Reeder-Simco had also not provided evidence on other tenders in which it may have received larger discounts than rivals had.

The Court found that in the second set of tenders Reeder-Simco had received the same price during bidding on both tenders as the rival Volvo retailer. The court said that if price discrimination between two bidding retailers existed at all, it did not substantially affect competition. It went on to argue that the Robinson Patman act should be interpreted as protecting competition, as opposed to protecting competitors.

Since the test here is for distortionary effects, the focus on whether the purchasers compete or not is sensible (though it is hard to imagine that a retailer that is known amongst customers to offer higher prices as a result of systematically receiving smaller discounts from its manufacturer would be asked to bid very often). Naturally, in the absence of competition between downstream purchasers, there can be no distortion of downstream competition. In general, it might also be relevant to understand whether buyers are currently operating in apparently separate markets as a result of a market partitioning strategy designed to support price discrimination. However, there was no suggestion in this case that Volvo had acted to partition the market, for example by restricting the tenders in which different retailers could take part.

93. In Japan, price discrimination by a non-dominant firm can be prohibited if it is found to be an unfair trade practice. Despite the reference to fairness, a finding against a firm requires evidence that it has a tendency to “impede competition”. For example in 2003, the Japan Fair Trade Commission (JFTC) found that Asahi Breweries was involved in “discriminatory treatment on transaction terms”. Specifically, Asahi offered better conditions for the reimbursement of the costs of sales promotion to a particular set of distributors from the south part of Osaka Prefecture (for instance, from August 2002 to March 2003, there were differentials of eight times the price). According to the JFTC, Asahi’s conduct was likely to have a “bad influence” on the fair competition between retailers in this region.

94. In Europe, as discussed in section 4.3, distortionary price discrimination is covered by Article 102(c) and is defined as the application of “dissimilar conditions to equivalent transactions with other

trading parties, thereby placing them at a competitive disadvantage.” The party facing the disadvantage must therefore show that the disadvantage is translated into a competitive disadvantages vis-à-vis its competitors. Case law from *Aéroports de Paris*, *British Airways*, *Clearstream*, and *Soda-Ash Solvay* (see boxes 3 and 5) suggests that a per se approach is therefore rejected in distortionary cases. Instead, relevant factors in the analysis of the effects on consumer welfare include: the significance of the price difference for the cost structure of the purchaser; the competitiveness of the downstream market; and a consideration of the impact that the price difference is likely to have on market outcomes (for example price, quality and innovation).

Box 3. Aéroports de Paris (ADP) vs. the Commission⁷⁸

Initially, Alpha Flight Services (AFS) was the only aircraft ground-handling service provider at Paris Orly airport. However, Orly Air Traiteur (OAT), a subsidiary of Air France, began to provide ground-handling services and took over the services previously provided by Air France. Both AFS and OAT were granted 25-years licenses to operate at the airport in exchange for paying ADP a variable fee. AFS complained that ADP was discriminating against it, and in favour of OAT. It complained that ADP was charging different variable fees for operators, such as itself, that provide ground-handling services for third parties, and operators such as OAT that provide ground-handling services for their parent company.

The Commission found that ADP infringed Article 82 (now 102) of the EC Treaty by using its dominant position as manager of Paris airports to impose discriminatory commercial fees on suppliers or users engaged in ground-handling and self-handling activities. The Commission stated that the fees charged by ADP differed according to the identity of the licensed undertakings, without those differences being objectively justified. According to the Commission, AFS and OAT were in an equivalent situation because they received the same services from ADP. The Commission found that the fees were an important part of the rival supplier's costs, and that they affected the supplier's marginal costs and so were reflected in their prices in the downstream market, leading to loss of customers or reduced margins. The Commission therefore found that AFS had incurred competitive disadvantage as a result of the discrimination.⁷⁹

In addition, the Commission found that competition between air transport services (e.g. airlines) would also be distorted since the discrimination increased the costs of rivals to self-handling airlines such as Air France. This was because ground-handling costs made up a large percentage of airlines operating costs.

5.3 *How to analyse allegations of distortionary price discrimination*

95. In this section, we set out a framework to help assess whether a pricing scheme that discriminates between intermediate customers harms final consumers by distorting competition or not. There are three key steps to this analysis.

96. The first step is to identify whether the scheme is in fact discriminatory. A difference in price is not sufficient. A scheme is only discriminatory if similar products, with the same marginal cost, are sold by a firm at different prices. An understanding of the costs of the products is therefore required and any efficiency savings that the seller gains from selling to larger chains should be assessed at this stage.

97. The second step is to ask who is favoured and who is discriminated against, and why in order to understand how this might reduce consumer welfare. At this stage, it should be possible to articulate a theory of harm that explains why discrimination against it is bad for consumers. As previously noted there are models that suggest possible reasons, though others might exist. Once the complainant has articulated a theory, it can be assessed and tested against the facts of the case. For example, if the complainant alleges that it is discriminated against on the basis that it is more efficient, then that claim can be tested by exploring the relative efficiency of the purchasers as well as identifying how prices are set through discussions with market participants and examination of how changes in efficiency affected the price of the input. Any allegation or complaint that fails to articulate a mechanism by which consumers could potentially be harmed by the discrimination might therefore be deprioritised at this point.

98. The third step is to identify whether downstream competition has been distorted. For this to happen the effect of the discrimination on the final price must be significant, and the upstream seller needs market power, otherwise the buyer that is discriminated against can simply purchase the input elsewhere. This also requires an assessment of whether the unfavoured intermediary would otherwise have imposed a competitive constraint upon the favoured downstream intermediary.⁸⁰ Note that this is not the same as requiring evidence that the intermediary has lost sales as a result of the discrimination (though that might also be useful evidence). Instead, it would be enough that there be evidence that a significant competitive constraint has been weakened, for example, that a significant minority of final consumers would consider switching between the intermediaries in the event of a price increase. To understand the strength of the competitive constraint the agency would also consider the strength of constraints posed by other downstream intermediaries that are not be discriminated against. Where these are strong, there might not be expected to be any harmful effect on consumers. Therefore, perhaps counterintuitively, where a specific intermediary out of a competitive field of intermediaries is ‘unfairly picked upon’ by the manufacturer this is unlikely to harm consumers and so unlikely to merit action.

99. A further option that may be feasible given the benefit of hindsight that is available in these cases is to look at evidence of the impact of the scheme on market outcomes (prices, quality or innovation) in order to demonstrate the harmful effects of the distortion on consumers. Failing that, evidence of an impact on market structure or on the intensity of competition in the market would also strengthen the case. Finally, any pro-competitive effects of the scheme that are put forward by the firm should be assessed at this stage.

100. This framework does not necessarily require specific evidence of injury to competitors; rather it requires evidence of damage to the competitive constraints that would otherwise be found in the market (and hence harm to consumers). For example, if the distortion leads to softer competition because there is less risk of customer switching then competition will be harmed regardless of whether or not customers actually switch and whether or not switching customers can be identified. Evidence of such softening of competition might take the form of feedback from customers, bidding data, or changes in market outcomes.⁸¹ Equally, this framework does not accept that evidence of injury to competitors is sufficient to identify harm to consumers. For example, when a firm uses price discrimination to compete to attract customers, competitors are likely to be injured and this will be good for customers.

101. The rigour required in the type of analytical framework described above might also reduce the temptation that may sometimes exist to investigate difficult exclusionary price discrimination cases under distortionary (or indeed exploitative) price discrimination rules. This might help prevent ‘abuse shopping’ in which, for example, cases based on difficult to prove essential facilities allegation are pursued instead under distortionary price discrimination rules. It might also discourage agencies from investigating distortionary price discrimination as a matter of course when they open an exclusionary case (perhaps for fear of being left empty handed if the exclusionary allegations prove unsubstantiated).

6. Price discrimination that can harm consumers: exclusionary price discrimination

102. Price discrimination is a common feature of many exclusionary strategies that seek to build or protect market power. For example, predatory pricing, fidelity and bundled discounts, and margin squeeze cases can each involve the use of price discrimination as a means to exclude a rival.

103. In some jurisdictions, these strategies can be investigated under a legal framework that applies specifically to exclusionary practices, but in others, they can be investigated under a framework that deals with price discrimination as a whole. In these cases, it is important that there be consistency between the two. For example, in the US the Robinson Patman act applies to price discrimination as a whole, while the Sherman act applies to monopolisation through exclusionary conduct. As such, the analytical framework for exclusionary price discrimination cases (primary-line injury cases) examined under the Robinson

Patman Act has become consistent with the framework that exists for all exclusionary conduct cases under the Sherman Act.⁸²

6.1 Predation

104. A predatory pricing strategy occurs in two stages.⁸³ In a first stage, known as the sacrifice phase, a firm sets prices below the competitive equilibrium level in order to force a rival or new entrant out of the market. In a second stage, known as the recoupment phase, once the rival firm has left the market, the incumbent firm is able to exploit its increased market power and raise its prices. This allows it to recover the profits that it sacrificed during the first phase. This would usually be a dominant firm, however an entrant or a firm without market power might also predate.

105. Predation does not always involve price discrimination. However, price discrimination can be used within a predatory pricing strategy to reduce the sacrifice that is required for the strategy to be effective. For example, it can help the firm to target the customers of the competitor, and perhaps just the key customers of that competitor. By targeting its prices to these customers, the firm avoids incurring losses on sales to its existing customers or to smaller customers of its rival. For example, in the US, the allegation in the Brooke Group case was that Brown & Williamson offered rebates to reduce its price below cost on sales to specific customers rather than to all of its customers.⁸⁴

106. Price discrimination can also be used when a predatory strategy seeks to recoup its sacrificed profit in a follow-on market (see the Napp case in box 4 below).

Box 4. Napp Pharmaceuticals⁸⁵

In 2001, the UK's Office of Fair Trade (OFT) found that Napp Pharmaceuticals had abused its dominant position in the market for slow release morphine by discounting sales to hospitals in order to reduce competition and exploit its dominance by charging excessive prices in the community sector.⁸⁶

The OFT showed that Napp had provided 90 percent discounts on its prices in the hospital sector which led to it charging prices that were below its average direct cost. The hospital sector accounted for 10-14 percent of the slow release morphine market and Napp had charged prices 10 times higher in the community sector that made up the remaining 86-90 percent of the market. However, since GPs in the community sector were heavily influenced by the brands that had been prescribed in the hospital sector, Napp's below cost pricing in the hospital sector had a strong influence on Napp's ability in the community sector, to set prices with a margin of 80 percent, and which were 40 percent higher than its rivals. By using price discrimination between customers in the hospital and community sector Napp were therefore able to engage in predatory pricing that reduced competition in both sectors without having to sacrifice profit in nearly 90 percent of the market.

6.2 Fidelity Rebates or Loyalty Discounts

107. Fidelity rebates or loyalty discount schemes (sometimes referred to as exclusivity rebate schemes) allow sellers to price discriminate and offer buyers a better price that is conditional on the buyer demonstrating loyalty in the purchases they make. They therefore involve a discriminatory price reduction for loyal customers, or reflect the introduction of a price penalty for disloyal customers. These second-degree price discrimination schemes are common, even among firms with no market power, and they usually reflect efficiencies or the kind of competitive behaviour that competition policy seeks to promote. These practices therefore often have no anti-competitive purpose or effect. However, in certain circumstances, fidelity rebates can be anti-competitive, particularly when they restrict or prevent rivals from competing effectively (see box 5 below).⁸⁷

Box 5. EU investigations of both Exclusionary and Distortionary effects of price discrimination

In *British Airways*,⁸⁸ the airline offered travel agents retroactive target rebates that reduced the price they paid on all tickets purchased if they met or exceeded their previous year's sales of British Airways tickets.

The European Commission found that the rebate scheme had a fidelity-building effect that was capable of excluding rival airlines. It therefore considered that British Airways had abused its dominant position by rewarding loyalty from travel agents and by discriminating between travel agents with the object and effect of excluding rival airlines from the UK market for air transport. The Commission imposed a fine of £6.8 million in 1999. The ECJ confirmed this judgement in 2007.

The Commission also considered whether the scheme had distorted competition and placed third parties at a competitive disadvantage in downstream markets (that is a non-exclusionary effect of the sort that we discuss in section 4.2.2). The Commission analysis found that downstream competition was intense and that the scheme could lead to sharp and significant variations in the income of individual travel agents. It therefore found that as well as being exclusionary, the scheme was also distortionary. At the appeal stage, the ECJ upheld the finding and confirmed that a financial disadvantage alone is not enough to establish the competitive disadvantage that is required for the scheme to be distortionary.

In both *Clearstream*⁸⁹ and *Soda Ash - Solvay*⁹⁰ the Commission also investigated distortionary effects of discrimination in tandem with its investigation of the exclusionary effects. In *Clearstream*, the Court's analysis was limited to simply noting that the existence of discriminatory prices for five years could not have failed to cause a competitive disadvantage. In *Solvay*, the Commission found that the price discrimination had a considerable effect on the customers' costs and took this to suggest that the profitability and competitive positions of those firms would be affected. However, downstream competition may not have been affected if the only impact was to reduce the customers' profit. In contrast, in *Intel* the Commission⁹¹ did not investigate whether the price discrimination through exclusivity rebates that it identified as exclusionary was also distortionary, or not.

108. Fidelity rebate schemes can raise concerns when they effectively become a de-facto exclusive dealing arrangement;⁹² that is, when they induce such loyalty that customers purchase all or most of their needs from an already dominant firm. In these cases, concerns might include whether the scheme allows the firm to raise its rivals' costs, or to tax their prices. However, in the same way that exclusive dealing by a dominant firm will not always harm consumers, de facto exclusive dealing will similarly not necessarily harm consumers. Instead, if rivals can compete for exclusivity then, as in many markets, the firms can simply compete for the customer, rather than competing for each purchase.

109. To identify a harmful effect what is required is that there be some asymmetry between the dominant firm and its rivals in the ability to persuade consumers (e.g. distributors) to purchase exclusively. This might be the case for example if the dominant firm can sacrifice profit on some 'incontestable' sales in order to set prices of 'contestable' sales below cost and make additional sales.⁹³ In that case, a predatory analysis would identify cases where the discount reduces the firm's effective price to a level at which rivals cannot remain within market. However, a predatory analysis would miss those instances where a profit sacrifice is unnecessary. In these cases, factors other than 'incontestable' sales might create the asymmetry, for example:

- Distributors might fear that rival distributors would trade with the dominant producer, leading to rival producers being foreclosed. In that case the distributor would be disadvantaged if it decided not to trade with the dominant producer. Moreover, the dominant producer might induce this fear by offering individualised rebates to distributors at different times and without making information available to others.
- Distributors might also fear that they would be disadvantaged if the dominant producer successfully forecloses the rival producer's access to key inputs.

- The rival producer might be less efficient but with a differentiated product that nevertheless exerts a competitive constraint on the producer's product and means that the use of fidelity rebates to raise its costs higher and make it less efficient (or deny it the opportunity to become more efficient through learning) would harm consumers.
- Unlike the dominant producer, the rival might not vertically agree with intermediate buyers to raise the retail price charged to the final consumers, and to divide that increased profit amongst them.⁹⁴

110. There have long been differences in the way in which different jurisdictions have assessed the exclusionary effects of discriminatory fidelity rebate schemes and while these different approaches have evolved in recent years, differences persist. Most importantly, some courts continue to rely on case law that employs simple but erroneous assumptions that some forms of loyalty-based discrimination always harm consumers, rather than recognising the ambiguity of the effects that these schemes can have. Identifying these effects requires an investigation and analysis of all the facts of the case rather than making presumptions based on the form of a discriminatory rebate, or on the results of a price-cost test (see box 6 below).

Box 6. Eisai vs. Sanofi⁹⁵

In 2016, the U.S. Court of Appeals for the third circuit ruled on a case concerning the market for branded pharmaceuticals used to treat blood clots in patients with deep vein thrombosis. Eisai sued Sanofi based on Sanofi's alleged anticompetitive and monopolistic conduct in its marketing of its drug Lovenox. During the relevant period, from 2005 to 2010, Lovenox had a share of 81.5 to 92.3 per cent of the market. The conduct under scrutiny was a scheme involving both quantity and share of need rebates that Sanofi used to price discriminate between loyal and non-loyal purchasers of Lovenox. Specifically, the rebate increased with (i) the number of units purchased, and (ii) the share of Lovenox in the customer's total purchases of drugs in Lovenox's Therapeutic Class. The latter was defined as the rolling four months of units of Lovenox purchased by the customer divided by the rolling four months of units of all products purchased by the customer within the Lovenox Therapeutic Class market. Therefore, for example, a hospital purchasing a gross sales volume between \$100,000 and \$399,999, assuming that this amount represents 82 percent of the hospital's needs in the category, would receive a 15 percent rebate on the price. A hospital purchasing the same volume, but for whom it represents 91 percent of need, would receive a 21 percent rebate.

Previously the U.S. District Court of New Jersey Court had identified that price, rather than exclusivity, was the predominant mechanism of exclusion. It was undisputed that after the rebates were applied, Sanofi did not sell Lovenox to hospitals at a price that was below Sanofi's incremental cost. The District Court noted that in 2009 for example, Sanofi was able to charge a price that was 17.7 times higher than its costs, while Eisai charged 7.8 times its cost. The District Court said that the conduct did not induce exclusivity through means other than price, and customers could easily terminate the contracts on short notice. They therefore argued that a price-cost test applied. However, this was corrected by the Court of Appeals court for the third circuit, which suggested that exclusivity was the predominant mechanism of exclusion, not price. Following the same ruling in ZF Meritor/Eaton, this would appear to suggest that, where plaintiffs make the case, fidelity rebates need to be analysed as de facto exclusive dealing arrangements rather than predatory pricing practices.

Nevertheless, the Appeals court for the third circuit agreed that Eisai had failed to show either substantial foreclosure of the market, nor any anti-competitive effect such as increased prices. It noted for example that showing that a few dozen hospitals (out of 6000 in the US) wanted to switch some demand but could not was not strong enough evidence of substantial foreclosure.

6.3 Bundled discounts and rebates

111. Bundled rebate schemes allow sellers to price discriminate and offer buyers a better price conditional on the buyer also purchasing a different product. As with fidelity rebates this can therefore involve a price reduction, or reflect the introduction of a price penalty, depending on the counterfactual price. Again, these second-degree price discrimination schemes are common among firms with no market power, and can often reflect efficiencies. However, bundled rebates can also be anti-competitive when they restrict or prevent rivals from competing effectively, or force the exit of these rivals.

112. Bundled rebate schemes can raise concerns when they allow a firm with market power in one product to leverage that power and foreclose rivals in a second market. These rivals may struggle to match the rebate or to replicate the bundle if they lack the market power that the incumbent has in the first market. This means that a firm with market power in product A and facing actual (or potential) competition in product B, might be able to set a discriminatory price for an A-B bundle that makes it impossible for reasonably or equally efficient single-product rivals selling B to compete.⁹⁶

113. All bundled rebate schemes that do not reflect differences in costs are discriminatory. However in order to assess whether a particular bundled rebate scheme has exclusionary effects agencies will want to assess the firm's market power in the first market and the volume of sales that this affects in the second market. For example, it may be the case that by making a segment of the market incontestable, the firm denies its rivals a minimum viable scale and hence raises their costs. In any case, a foreclosure analysis would be required to understand what impact the scheme has in changing the competitive constraints that the incumbent faces.⁹⁷

114. As with fidelity rebates a predatory analysis or a modified predatory test might be used to identify the exclusionary effects of some discriminatory bundled rebate schemes. For example under the discount attribution test (as used in *Cascade Health v. PeaceHealth* see box 7 below), the full discount is applied to the competitive product (product B) in the bundle. If the discounted price is below a relevant measure of cost, then the bundling may be qualified as anticompetitive. In contrast, if the discounted price is above cost, in theory an equally efficient competitor could profitably replicate the discount of the bundle.

115. However, as with fidelity rebates, this modified test would again miss those instances where below cost pricing is not necessary for exclusion to occur.⁹⁸ In order to find the right answer in such cases alternative tests have therefore been suggested. These include a proposal that a bundled discount is identified as anticompetitive if the out-of-bundle price of the product in which the firm is dominant (product A) exceeds the price that it would set absent the bundle (its but-for price).⁹⁹ It is suggested that this but-for price might be identified either from internal documents, through econometric analysis, or using a presumption that it was reflected in the pre-bundling price of that product.

116. To see the logic consider a situation in which the incumbent has a monopoly on product A while the market for product B is competitive. Absent the bundled discount, consumers would face a monopoly price for product A while being able to purchase product B at a price equal to marginal cost. We might interpret the bundled price as being composed of two elements. The first is the price of product B. We can assume that a firm will not set that price below cost since doing so would result in it failing a predatory analysis. Therefore, the price of product B will remain equal at marginal cost. The second element is then the price of product A. If this price, which is observed via the out-of-bundle price for product A, is higher than the monopoly price that the firm would have charged for product A in the absence of the bundled discount, then consumers will be worse off. This would identify that the scheme has been used to set a higher penalty price for those that do not buy the bundle, rather than a discount for those that buy the bundle. From this, it might be concluded that the purpose of the scheme is not to compete through lower prices but instead to move customers into buying the bundle.¹⁰⁰

Box 7. Different approaches to an exclusionary analysis of discriminatory bundled rebates - LePage and Peacehealth

3M vs. LePage¹⁰¹

Until the early 1990s, 3M had over 90 percent of the transparent tape market. However, with the appearance of office superstores and mass merchandisers, lower-priced private labels became more popular. By 1992, 3M's main competitor, LePage, had nearly 88 percent of the private label segment of transparent tape, but still only about 14

percent of the overall tape market.

3M responded by introducing its own private label product and by offering a second less expensive brand. In addition, it initiated a bundled rebate program that offered favourable (discriminatory) prices to large superstores (for example Wal-Mart and Staples) that purchased a full range of products across 3M's six different product lines. LePage alleged that it was not possible for it to match these bundled discounts, since it provided only one of these product lines. In other words, if a customer bought a large amount of LePage private label tape, the customer would have not met its 3M target in this product line, which would result in loss of rebates on all six 3M product lines.

The Court condemned this bundled rebate program on the basis of Section 2 Sherman Act without requiring a below-cost pricing test. These rebates were instead found to be exclusionary because a rival firm could have not matched them unless it had offered a comparable set of product lines. Thus, LePage was only required to show that the bundled discount offered by 3M included products that it did not sell.¹⁰²

PeaceHealth¹⁰³

In PeaceHealth, McKenzie, a smaller hospital that offered primary and secondary services, challenged the bundled discounting practices of PeaceHealth, the only other provider of hospital services in Lane County, Oregon. Specifically, PeaceHealth offered significant discounts to insurance companies that agreed to purchase all hospital services (i.e. primary, secondary, and tertiary services) exclusively from PeaceHealth.

In this case, the parties settled the dispute; however, the Court adopted a discount attribution test, in which the defendant's total bundled discounts were allocated to the competitive products offered by an equally efficient competitor. The test suggests that if the resulting price of the competitive products is below the defendant's incremental cost of production, then the bundled discounts is exclusionary.

6.4 Margin Squeeze

117. Margin squeeze occurs when a vertically integrated firm forecloses a rival by setting a narrow margin between the price it offers for an essential input (wholesale price), and its own downstream price (retail price).¹⁰⁴

118. Margin squeeze may or may not involve price discrimination. This will depend on how the vertically integrated firm decides to organise the scheme. For instance, it might choose not to price discriminate in its wholesale price and instead to set high wholesale prices that squeeze the margins of both its downstream subsidiary and its downstream rivals. In this case, the margin squeeze can resemble predatory pricing by the subsidiary. This may foreclose rivals and hence reduce competition in the downstream market in future. In the meantime the firm may cover the subsidiary's losses with the revenue that it earns upstream. Alternatively, the firm might choose to price discriminate between its downstream subsidiary and its rivals in order to raise those rivals' costs. This may foreclose rivals and reduce competition in the downstream market (see box 8 below).

119. A key question in assessing whether price discrimination squeezes margins and harms consumers is why competition in the downstream market matters if the firm already has a monopoly over an essential input; for example, why can it not already extract all the monopoly rent through its wholesale price? One possibility is that downstream foreclosure also protects the firm's upstream monopoly by making entry more difficult. A second is that it enables the firm to price discriminate in the downstream market and thereby better exploit its market power. A third is that it protects the firm from non-price competition in the downstream market. A fourth is that if the downstream rival has some, albeit limited, input substitution possibilities then by discriminating the firm can increase its downstream profit by more than simply raising the wholesale price would. Finally, it might be the case that the firm's upstream price is capped and its ability to extract rent through its wholesale price is therefore limited.

120. In Europe, agencies typically focus on whether the gap between the vertically integrated firm's wholesale and retail prices is too small to allow a rival to compete effectively. The integrated firm's costs might be used in order to understand whether an equally efficient competitor could compete effectively.¹⁰⁵ However, as noted in the OECD roundtable (2009) this can be too lenient to the dominant firm. For example, rivals might be less efficient due to a lack of scale or experience. While the prioritisation guidance from the EU suggests that margin squeeze cases will be assessed against a refusal to deal framework, the courts have clarified that margin squeeze cases do not need to meet the requirements of a refusal to deal case.¹⁰⁶

121. In contrast, in the US, courts have followed an approach in which margin squeezes practices are analysed under either a refusal to deal or a predatory pricing framework. For instance, in the *Pacific Bell Telephone Company v. LinkLine Communications Inc.* case, the Supreme Court stated that in the absence of an upstream duty to deal and a lack of predatory prices at the retail market, the incumbent “*is certainly not required to price both of these services in a manner that preserves its rivals' profit margins*”. Under this view regulatory authorities, relying on the economic principles of access pricing, should deal with any other margin squeezes cases.

122. Adopting a predatory pricing test for margin squeeze cases may however be problematic. As identified by the EU and Canada in the OECD roundtable on margin squeeze, a vertically integrated firm can foreclose its rivals without pricing below cost and hence without violating the rules against predatory pricing.¹⁰⁷ Using a predatory pricing framework for margin squeeze cases therefore risks permitting anticompetitive conduct that harms consumers. Furthermore, since a margin squeeze can be put in place using excessive wholesale prices rather than below cost retail prices the concern over a potential chilling effect on price cutting behaviour does not apply in the same way that it does to predatory pricing.

Box 8. ICA vs. Mjólkursamsalan (MS)

The clauses in the Icelandic Competition Act on mergers that restrain competition and on collusive behaviour were in 2004 set aside for the milk market. Before these changes there were five dairy firms operating in Iceland. Since then there have been mergers of dairy firms that the Iceland Competition Authority (ICA) has not been able to review. As a result, MS has emerged with a near monopoly in the markets for processing and wholesale distribution of dairy products. Furthermore, MS and another firm KS have collaborated extensively with regard to the production and sales of dairy products, and KS has taken a 10 percent share in MS. The authority therefore considers that MS and its related firms had a near monopoly in the processing and wholesale distribution of dairy products.¹⁰⁸

In this context in 2014, the ICA found that MS abused its dominant position by selling raw milk to its smaller competitors at a price 17 percent higher than the prices offered to firms related by ownership with MS. The ICA found that this discrimination had led to a competitive advantage for the undertakings connected to MS, and that the ability of competitors to compete was severely diminished and consumers were harmed. The ICA therefore found that MS had breached Article 11 of the Icelandic Competition Act, which forbids dominant firms from discriminating between its customers by applying dissimilar conditions to equivalent transactions.

7. In what other circumstances might price discrimination be investigated?

123. There are a number of other reasons why price discrimination might be investigated. These are based on concepts of fairness, or on other policy goals, such as the desire to operate a single market, or to protect domestic producers and consumers from excess production by organisations in non-market economies. In this section, we discuss each of these in turn.

7.1 *Price discrimination may be investigated where it breaches rules on fairness*

124. Some jurisdictions prohibit price differences based on characteristics such as gender, race or disability. For example, the Court of Justice of the EU ruled that pricing car insurance differently for men and women was illegal.¹⁰⁹ Whether or not this differential pricing constituted price discrimination in an economic sense,¹¹⁰ it is important to note that the decision was not taken on the basis of the European Union's competition rules (which provide scope for action against price discrimination). Instead, it was taken on the basis that the discrimination was incompatible with Articles 21 and 23 of the Charter of Fundamental Rights of the European Union.

125. New York City also banned gender discrimination pricing in 1998. Under these rules, it has the power to tackle the 7 percent average premium paid by women that its department of consumer affairs has identified.¹¹¹ Moreover, since these rules are not based on competition rules they do not require an understanding of the effects on consumer welfare.

126. What these fairness-based rules seek to address is pricing that discriminates based on characteristics that are agreed to be off-limits. However, a challenge to this simple distinction may arise as personalised pricing in the digital economy becomes more common. For example, it may be that personalised pricing has a discriminatory impact on these groups despite there being no discriminatory intention to do so; it may simply be the result of an algorithm drawing on thousands of data points. For example, a study of the pricing of a major provider of online exam tutoring courses found that students with Asian backgrounds were twice as likely as other students to be charged a higher price (\$8,400 rather than \$6,600). It attributed this in part to their living in more prosperous postcodes but it also found that regardless of income, students in areas with a high density of Asian residents were 1.8 times as likely to be offered higher prices.¹¹² In the US, the legal doctrine of "disparate impact" prohibits unintentional racial discrimination in some areas. However, the disparate impact doctrine does not apply to online services. This raises the delicate question of whether firms need to be wary of setting up online price discrimination schemes that have unintended discriminatory impacts on groups that might expect to enjoy protection under fairness rules.

7.2 *Price discrimination may be investigated where it conflicts with other policy goals*

7.2.1 *Single market policies*

127. In some jurisdictions, price discrimination cases might be investigated where the practice risks undermining a policy goal of operating a single market across a geographic region. These policies typically seek to reduce price differences within that geographic region and so price discrimination, whether it benefits consumers or not, may conflict with that goal.

128. When a price discrimination scheme undermines a single market, it might also have exclusionary, exploitative, or distortionary effects of the type described in sections 4, 5 or 6. However, under the analytical frameworks described, there are likely to be many other cases of geographic price discrimination that will not have those effects. Jurisdictions might therefore use per se, or by object, rules prohibiting geographic price discrimination to address schemes that undermine a single market policy without also having exclusionary, exploitative, or distortionary effects.

129. Such schemes would not harm consumers (else, they would be exclusionary, exploitative, or distortionary) and so would be best examined, not under competition rules, but under a different set of policy rules or regulations (if they need be examined at all). This would clarify that the framework for that assessment, as the fairness assessment described above, is based on whether a principle defined within the policy has been undermined or not, rather than whether consumers are harmed. This is important because

the scheme, while conflicting with the policy, might nevertheless prove to be in the interests of consumers.¹¹³

130. It appears that in Europe, per se prohibitions apply on partitioning practices that facilitate geographic price discrimination, for example, refusal to supply in parallel trade cases (albeit subject to rebuttal on efficiency ground).¹¹⁴ However, since these cases have been conducted within the framework of article 102, the same article that is used to examine exploitative, distortionary and exclusionary price discrimination, it is possible that they may reflect a broad interpretation of the scope of the practices caught by those rules rather than a distinct policy objective.

131. The policy goal of eliminating price discrimination across national borders is not limited to Europe, it was also recently considered in Canada. A law was proposed in February 2014 that would prohibit companies with market power from charging higher prices in Canada than in the US where those higher prices were not reflective of higher costs of operating in Canada. In December 2014, the government proposed, in the Price Transparency Act,¹¹⁵ to amend the Competition Act to authorise the Commissioner of Competition to investigate price discrimination and expose it. With the change of government in 2015, the fate of this proposed bill remains unclear.¹¹⁶

132. In Australia, a review of competition policy (the Harper review) advised that a prohibition on international price discrimination should not be introduced due to significant implementation and enforcement complexities and the risk of negative unintended consequences.¹¹⁷ Instead, it supported moves to reduce international price discrimination through market solutions that empower Australian consumers. These included removing restrictions on parallel imports and ensuring that consumers are able to take lawful steps to circumvent attempts to prevent their access to cheaper goods (and hence to facilitate arbitrage). For example it proposed to ensure the legality of online anonymity services (such as virtual private networks), and even to encourage their take-up in order to frustrate international price discrimination schemes.

133. In contrast, in other cases, arbitrage to reduce cross-border price differences has been prevented, in some cases, by government regulation in a way that might be expected to maintain price discrimination. For example in the US, prescription pharmaceuticals cannot be imported from Canada even if they are identical products, due to safety concerns.¹¹⁸ In one case, the Court of Appeals for the Eighth Circuit rejected an appeal against GSK's alleged suppression of importation into the US. In doing so, it identified that the absence of competition from Canadian imports in the domestic prescription drug market was not a result of GSK's behaviour but the federal statutory and regulatory scheme adopted by the United States government.

7.2.2 *Anti-dumping policies*

134. In other cases, the policy goal might be to protect domestic producers and consumers from excess production by organisations in non-market economies. For example, while anti-dumping policies can be motivated by a desire to prevent traditional predatory pricing strategies by overseas firms from harming consumers, it can also reflect other concerns. In particular, since agencies are generally already able to address predatory conduct through competition rules, anti-dumping policies largely address other concerns. A range of other potential motivations for anti-dumping policies has been suggested. These include concerns over cyclical dumping, strategic dumping, dumping by non-market economies and price discrimination.¹¹⁹ Only strategic dumping (along with predatory dumping) would be expected to reduce competition in the importing market, the other motivations are not based on market power concerns.¹²⁰

8. Remedies in price discrimination cases

135. When identifying remedies for cases in which price discrimination has harmed consumers there are a range of options (See for example FCA, 2016, table 1). These vary from those that simply prohibit price discrimination, to more targeted remedies that seek to address the causes of the price discrimination. For example, harmful schemes facilitated by government policy might lead to targeted advocacy efforts. Similarly where a firm has acted to partition a market in order to facilitate exploitative price discrimination an agency may wish to address the partitioning strategy, for example by removing restrictions on arbitrage, rather than to prohibit any price discrimination by the firm. This recognises that the market might, absent the conduct, be characterised by a degree of price discrimination and that this might not be harmful.

136. The advantages of targeted remedies can also be seen in cases where simple non-discrimination regulations have proved ineffective. For example in the UK, the energy regulator imposed a non-discrimination requirement on energy firms. However, after receiving criticism this has recently been identified by the CMA as softening competition, and has therefore recommended its removal. Amongst the more intriguing alternative suggestions in this case is a proposal informed by behavioural insights on consumers' status quo bias. This suggested that those customers on standard tariffs that have not switched in years, who were found to be discriminated against on that basis, should automatically be enrolled on a collective switching scheme unless they specifically chose to opt out and remain on their existing tariff.¹²¹ This illustrates the scope for more imaginative solutions than non-discrimination clauses.

137. Whether these different potential remedies are available to an agency will depend on the context. For example, the agency may have investigated a price discrimination scheme within the context of a unilateral conduct investigation, or as part of a market study. Indeed, it may be the case that market studies with broad remedial powers allow for a more holistic examination of why exploitative price discrimination is possible, and have the added advantage of allowing authorities to examine not only the role of firms, but also the role of government regulations in creating market power that harms consumers. Agencies may in some cases have some discretion in this choice, as for example in the UK in the OFT's decision to refer the Payment Protection Insurance market (PPI) for a market study rather than investigating it as an article 102 case.¹²²

9. Discrimination in the digital economy

138. In this section, we consider the impact that the digital economy has had and may in future have on price discrimination. We look first at discrimination between final consumers and then at discrimination between intermediate customers.

9.1 *What impact does the digital economy have on price discrimination between final consumers?*

139. Price discrimination requires a downward sloping demand curve, barriers to arbitrage, and a way to identify willingness to pay. We therefore consider the impact of the digital economy in each of these areas.¹²³

9.1.1 *Downward sloping demand curves*

140. In practice, many firms are likely to have downward sloping demand curves. In general, the move from offline to online digital markets has allowed for greater transparency, lower search costs for consumers, and an easier route to market for small entrants. These developments may help to flatten the demand curve and hence reduce market power in some cases; however, they are unlikely to flatten it entirely. Moreover, at the same time, many of the new digital markets that provide consumers with interconnectivity, for example platform services, often involve important network effects that create

barriers to entry and so have a tendency to develop into concentrated markets with few competitors and greater market power.

141. Where there are downward sloping demand curves, there might also be a greater incentive to price discriminate in digital service markets than in offline markets. For example, the marginal costs of many digital services can be extremely low (e.g. an electronic copy). This means firms can help to cover their fixed costs by price discriminating to maximise the number of consumers that are reached (for example by offering free versions that attract small advertising payments). The impact of the digital economy on the shape of demand curves across different markets is therefore, unsurprisingly, ambiguous.

9.1.2 *Ability to engage in arbitrage*

142. Digital markets have also had conflicting impacts on the ability to engage in arbitrage, the difficulty of which is a key condition for effective price discrimination. On the one hand, the nature of digital products can allow firms to hardwire restrictions on re-use into the product itself. These can restrict which types of device a product can be used with, which country or region it can be used in,¹²⁴ and whether the product can be transferred to someone else.¹²⁵ Each reduces the feasibility of reselling, makes arbitrage more difficult and hence makes price discrimination more feasible. For example, as the markets for products within the “internet of things” develop,¹²⁶ the possibility will increasingly exist for firms to sell and enforce single licences on products, thereby removing consumers’ resale rights.

143. On the other hand, however, digital platforms have also created new marketplaces in which to re-sell products more efficiently, and even to re-sell small portions of spare capacity. For example, reselling on EBay and other sites has created online second-hand markets and allowed these to operate at a much bigger scale than offline second hand markets. More revolutionary, however is the development of the sharing economy. This goes beyond the now common development of an online two-sided platform that connects buyers and sellers. Instead, the additional and unique aspect of the sharing economy is that through sharing previously indivisible goods it can tap into the huge unused capacity of individual consumers themselves and turn them into small atomised suppliers.¹²⁷ Examples include Airbnb in which house buyers and long-term renters sell short-term rents back onto the market via Airbnb’s website. Similarly where the national grid buys back surplus solar power generated by panels operated by individual households. Uber users also sell back to the market space on the taxi they have hired to other riders (or in their own car via Blablacar). This can create huge additional capacity that can then compete with the existing capacity and hence dramatically reduce prices. Where the customer is empowered to share, the sharing economy (at least when unimpaired by regulation) can make arbitrage easier since it allows resale of this spare capacity and this ease of resale can help to prevent price discrimination.

9.1.3 *Information on willingness to pay*

144. Potentially the most significant impact that the digital economy will have on the scope for price discrimination is the opportunity it creates to gather and analyse large volumes of so-called ‘big data’ often from multiple sources. This might include for example the location of a consumer’s mobile device, their home location, the type of computer they use, the types of device they own or use,¹²⁸ the search-terms they have used, their browsing history, the articles they read, their purchases, their virtual shopping basket, the content they stream or download, and their output on social media. By connecting this information with data coming out of the internet of things (information from devices in cars, kitchen devices, and health devices) and observing when consumers buy and when they do not, this creates the prospect that firms, using increasingly sophisticated analytical tools will be able to model and predict an individual’s willingness to pay.¹²⁹

145. In terms of the traditional economic categories of price discrimination set out in section 2.1.1 this means that firms that might previously have practised relatively crude third degree price discrimination may be able to fine-tune that approach into something that approximates first degree price discrimination (near perfect price discrimination). Alternatively, in terms of Armstrong's categorisation (see section 2.1.1) this development can be seen as an increased potential for dynamic behaviour-based price discrimination.

146. At this stage, firms appear to be experimenting with a number of strategies. One is to understand through systematic testing the shape of the demand curve for groups of like-minded individuals. For example offering different prices to different types of consumers, or different prices depending on the time at which the consumer arrives on the site. Amazon conducted tests of this type more than 15 years ago and while it discontinued them, it continues to change prices frequently, sometimes every minute, an approach that potentially allows it to answer many of the same questions.¹³⁰

147. Price testing is of course also possible outside of digital markets; however, it takes longer and is more costly. Moreover, by combining price-testing with data profiling based on a consumer's past behaviour and a broad range of characteristics, firms may develop and finesse predictive models on an individual's willingness to pay (and their elasticity of demand). This creates the possibility of personalised pricing becoming a common strategy for firms with the data and the analytical ability to implement it.¹³¹ As noted in a report by the US President's Council of Economic Advisors, a key concern is that personalised pricing transfers value from consumers to shareholders, which generally leads to an increase in inequality and can therefore be inefficient from "a utilitarian standpoint".¹³²

148. Reports suggest that certain online retailers may be engaging in dynamic pricing based on their ability to estimate visitors' locations, and, specifically, the (online) visitor's physical distance from a rival brick-and-mortar store.¹³³ One paper suggests for example that there are already price differences of 10 percent to 30 percent for identical products based on the location and the characteristics (for instance, browser configurations) of different online visitors.¹³⁴ Another finds evidence of more than 500 sellers on Amazon Marketplace using algorithmic pricing.¹³⁵ It may also be that some mergers increase the likelihood of firms switching to (or improving the effectiveness of) personalised pricing.¹³⁶

149. While personalised pricing of the type that we envisage is not yet widespread, a more common approach is behavioural targeting. This uses the same type of data to send targeted marketing based on previous browsing behaviour, targeted recommendations for products that you might like, and personalised coupons (see box 9). These personalised coupons change the effective price and move towards personalised pricing without going so far as to change the list price. This framing device might for example prove more acceptable to consumers who would resent being charged personalised prices on the basis that they are willing to pay more. The risk of raising resentment is that by offending a sense of fairness, firms may find themselves subject to boycotts. This may explain the proposal by the UK's House of Lords that firms using personalised pricing schemes should have to declare transparently to consumers that they are doing so.¹³⁷

Box 9. Safeway

An early example of using data to personalise prices is Safeway,¹³⁸ a grocery store in the US with a mobile app that sends personalised promotional offers on specific products to shopper's mobile devices as they walk around the store based on the weather, products previously purchased, regularity of purchasing that product, last time they purchased the product, complementary products purchased, and location. Whether the customer uses the offer or not, that choice tells the firm something about their willingness to pay for that product under certain conditions.

Moreover, it is not difficult to imagine that the information used here might increase in future. For example, useful information might include: what the consumer has been doing prior to shopping, perhaps when they last ate, whether they need to be somewhere soon, which rival stores they shop in (or which rival stores are on their route home), what events are in their diary for the next week, what is on their digital shopping list (or that of other family members), what they have browsed, whether they have ordered takeaway that week, or have family visiting.

150. Identifying consumers' valuation does not necessarily require firms to obtain information on consumers' willingness to pay; it can also involve firms allowing consumers to communicate it themselves, for example by selecting from a menu of prices or voluntarily revealing their valuation in order to ensure they get served. This way of identifying consumers' valuation reflects second degree or indirect price discrimination. Digital services such as online platforms have helped to make this easier in a number of areas by more effectively matching supply and demand. This allows consumers the option to signal their higher willingness to pay by taking part in explicit or implicit auctions of limited capacity products (EBay, resellers of concert tickets, Uber). These platforms can go beyond simply connecting buyers and sellers; they may also use intertemporal price discrimination (or surge pricing) schemes to set a platform-clearing price that allows customers with higher valuations to identify themselves when supply is scarce.¹³⁹ Of course, these platforms may set these prices using a combination of objectives. They might for example set a price that clears the market but that does so while extracting higher commissions using data on a user's history (e.g. what they were willing to pay in previous transactions or during previous surges in demand).

151. While consumers will sometimes want to reveal their valuation in order to ensure they get served, in many circumstances consumers will prefer not to reveal their own valuation. For example, revealing this information may deny them the protection that is afforded to them when firms have to set prices according to the valuation of marginal consumers. Consumers that do not want to reveal their valuation, or information that might help estimate it, might therefore react by trying to withhold information and digital services have also been developed to provide anonymity (e.g. virtual private networks, and services like Abine that charge consumers to anonymise their data).¹⁴⁰ By making it more difficult for firms to estimate a consumer's valuation these digital services can disrupt discriminatory pricing schemes.¹⁴¹ Alternatively, consumers might demand compensation for providing the information. As a result, we are also starting to see services that offer to purchase a consumer's data for a monthly fee (Datacoup).¹⁴²

152. Theoretical research has begun to explore how consumers might best respond to more effective price discrimination.¹⁴³ This works suggests that when price discrimination would benefit consumers, for example when it increases competition, it is best for consumers if all competitors have access to information on their willingness to pay, rather than one firm having exclusive access. This suggests that in competitive markets consumers should share information freely, and that agencies should not worry (from a competition perspective) about making it easier for consumers to protect their privacy, and worry more about the exclusivity of the data. For example, restrictive conditions on resale of data, refusal to supply cases, or mergers that lead to exclusive access to data might raise concerns. However, the research also suggests that when price discrimination is harmful, for example when it is used by a monopolist and fails to expand output, consumers would do best to avoid providing information that could be used to understand how much they are willing to pay. This may however be difficult since the same data may be relevant to multiple markets, and it is likely that discrimination will be beneficial in some but harmful in others.

153. Interestingly some countries that have decided against adopting rules to address price discrimination (e.g. Australia) have nevertheless proposed to ensure the legality of anonymity services, and even encourage their take-up in order to frustrate international price discrimination schemes. They consider that this approach provides a market-based alternative to the enforcement of price discrimination rules. However, the approach suggests a difference in opinion over how to deal with price discrimination rather than a different position on whether price discrimination is in fact a problem or not. For example, in cases where price discrimination is good for consumer welfare, policies that make it impractical would be no less damaging than those that simply prohibit it through enforcement action.

9.2 What impact does the digital economy have on price discrimination between intermediate customers?

154. The growth of the digital economy has also created some additional opportunities to discriminate between intermediate customers.

155. Perhaps the most important example is in the sale of internet connection capacity, which forms the basic infrastructure for the digital economy.¹⁴⁴ Here, Internet Service Providers (ISPs) have an opportunity to discriminate in the price they charge (or quality they provide) to firms that provide content.¹⁴⁵ The opportunity arises because content providing firms will have different willingness to pay for the service. For example, firms have different volumes of demand (for example video streaming services such as Netflix use significant capacity); and some are more reliant on fast, reliable connection than others. In recent years both the EU and US have decided to adopt regulations to formalise this principle (joining countries such as Japan, Korea, the Netherlands and Canada who have each had rules of differing strength in place for some time). This appears to reflect the view that net neutrality has been fundamental in helping innovative content providers to quickly reach a mass audience and has therefore helped drive the success of many of the disruptive innovations that have powered the digital economy.¹⁴⁶

156. It is worth considering how this fits with the standard price discrimination analysis that we have discussed above. This standard analysis would suggest that regulation that imposes net neutrality risks harming consumers by preventing ISPs from reducing prices for content providers that would otherwise not purchase. It would appear therefore that by imposing net neutrality governments recognise the risk of ISPs engaging in exploitative or distortionary discrimination. This might therefore suggest that a different weighting for this risk might have been applied in ISP markets, as compared to other markets.

157. Recent work suggests that this different weighting might have been beneficial. For example, it finds that net neutrality incentivises innovation by smaller new content providers and does not create additional congestion.¹⁴⁷ In contrast, it suggests that paid prioritisation of Internet traffic would not incentivise incumbent content providers to innovate unless advertising revenue is low. This suggests that if advertising prices remain high then preserving net neutrality and hence prohibiting price discrimination may be the right policy to guarantee the largest availability of content and to provide incentives to invest and improve the existing networks.

10. Conclusions

158. Price discrimination is typically good for the economy and often benefits consumers by increasing trade and driving firms to compete. It is therefore right for agencies to start from the default view that price discrimination is typically beneficial. However, it risks harming consumers in broadly three different ways that may concern competition agencies. We set out our conclusions on each of these below.

159. Firstly, partitioning strategies that facilitate exploitative price discrimination can raise mark-ups and increase market power. These risks appear likely to increase as big data allows firms facing little competition greater scope to personalise prices and extract consumer surplus without expanding output. Where evidence suggests that this strategy to monopolise is harming consumers (having taken full account of dynamic incentives to innovate or rent-seek), agencies should pursue such cases with at least as much priority as they would a predatory pricing allegation.

160. In contrast, in the absence of a specific partitioning strategy, the dynamic incentives from exploitative price discrimination are more likely to be beneficial for consumers. This suggests that those cases that simply reflect non-strategic profit maximisation would not be a priority. Notably this means that any non-exclusionary second-degree price discrimination schemes are unlikely to be a priority.

161. Secondly, in certain circumstances price discrimination between intermediate purchasers can distort downstream competition and harm consumers. When testing for such effects agencies will want to focus on the likely effect on consumers rather than whether or not there is an injury to competitors. While agencies are likely to remain open to well-evidenced complaints in which the facts of the case appear to reflect the economic basis for the rules, these concerns remains unlikely to be a priority for agencies.

162. Thirdly, firms can use price discrimination strategically to exclude rivals. Since exclusionary price discrimination can create, build and protect market power it should be the highest priority of the different concerns described in this paper. Of the different types of exclusionary strategy, it makes sense to focus on those that are least costly for a firm to implement. For example, margin squeeze, bundling and fidelity rebates can each effectively exclude rivals without the firm needing to sacrifice profits (unlike predation).

163. Finally, as different evidentiary standards might apply, it is also advisable to distinguish from the beginning those cases where price discrimination is investigated as abusive conduct within a relevant market, and those where there is an entirely *different policy rationale* for the investigation, such as fairness or another policy goal.

ENDNOTES

¹ See OECD – Background Paper on Fidelity Rebates (2016a).

² Treaty on the Functioning of the European Union Article 102(c).

³ See Blair & DePasquale (2014) page 3.

⁴ See Elford, “The Robinson-Patman Act”, American Bar Association

⁵ See Armstrong (2006). Stigler (1987) suggests a wider definition: when two similar products are sold at prices that are in different ratios to their marginal costs.

⁶ For example, volume discounts offer consumers a favourable price if they purchase a sufficient quantity of the product.

⁷ For example, the position of two seats might be different while the cost of providing a performance or service to them is the same.

⁸ For example, the suggested or known use (or indication) of the same pharmaceutical product may differ in different countries or over time.

⁹ For example, news, films, music, and books may lose value over time. Note for example that Clerides (2002) attributes only five per cent of the average price difference between hardback and softback books to higher production costs.

¹⁰ For example, umbrella sellers might charge a premium when it is raining.

¹¹ For example, low risk drivers can be identified using safe driving monitors (Tanner, 2013).

¹² This geographic partitioning of national markets is often a concern in the EU, though as discussed in section 7 this is because it undermines the policy goal of a single market.

13 See Vickers and Armstrong (2012).

14 See Pigou (1920). As re-labelled in Shapiro and Varian (1999).

15 See McAfee (2008).

16 Verboven (2002) suggests that 75–90 percent of the price premium for high-quality petrol products can be attributed to a higher margin, meaning just 10-25 percent is attributable to cost differences for these different versions of the product. Ennis (2006) identifies price dispersion between standard and non-standard long distance call plans and finds that this increases as competition increases. The CMA (2016) also identify price differences between standard and non-standard energy plans.

17 See Maskus (2001).

18 Hays (1999).

19 34 US States and the District of Columbia have laws restricting price increases during an abnormal disruption of the market (Giberson, 2012). The characteristic of the consumer in this case is a temporary one, that their willingness to pay has suddenly increased perhaps as they require a product more urgently than under normal circumstances (Mohammed, 2013).

20 Some suggest a fourth degree of price discrimination, sometimes referred to as reverse price discrimination in which similar products with different costs are sold at the same price. For example when free transportation costs are offered to consumers for which the transport costs are in fact significantly different.

21 See Armstrong (2006).

22 Note that this type of intertemporal price discrimination can be subject to the problems identified by the Coase conjecture (Coase, 1972) which says that a monopolist wanting to price discriminate by offering different prices for a durable good over a period of time may, in effect, end up competing against itself and setting a low price. This means discrimination may be an unsustainable strategy in these types of cases. For example, if the firm starts by setting high prices in order to sell to those with high valuations and proceeds to reduce price in order to make sales to those with lower valuations then it may find that those with high valuations anticipate this and decide to wait for the price to fall before purchasing. In these circumstances, the monopolist risks selling little or no volume in the first period and may therefore need to offer a uniform price. However, this problem would not arise if the product is non-durable or when consumers have high discount rates and are unwilling to wait for the product (hence the premium price for new hardback books).

23 See also Ezrachi & Stucke (2016).

24 In addition, we might also distinguish those cases that cause injury to customers of the customers (third-line injury), and so forth.

25 Utah Pie Co. v. Continental Baking Co., 386 U.S. 685 (1967)

26 The Supreme Court harmonized the treatment of primary-line price discrimination with the broad goals of antitrust policy in its ruling on Brooke Group Ltd. v. Brown & Williamson Tobacco Corp. (92-466), 509 U.S. 209 (1993).

27 See McAfee, Mialon and Mialon (2006)

28 In these cases, the different views on which set of consumers pay higher prices might mean that a hypothetical monopolist would not price discriminate at all.

29 There is also some suggestion that it can make collusion more difficult. See Helfrich and Herweg (2016), and Liu and Serfes (2007).

30 For example, if a cinema offers students a discount while non-students must pay a higher price, then additional students will be served at the lower discounted price, but some non-students will decide not to purchase at the higher price despite valuing the product more than those students who are only willing to purchase as a result of the discount. This means that an oversubscribed cinema will not achieve allocative efficiency by selling its seats to those that value the seats most, and will instead sell too many seats to students and not enough to non-students.

31 Robinson (1933) identified that whether or not total output increases depends on how the shape of demand in strong markets (those where the discriminatory price would exceed the uniform price) compares to that in weak markets (those where discriminatory prices would be lower than the uniform price). Schmalensee (1981) proves that output must increase in order for total welfare (not consumer welfare) to increase (assuming nonlinear demand curves, perfectly separated markets and constant marginal cost). Varian (1985) and Schwartz (1990) generalise these results.

32 See Armstrong (2006), and Monopolies and Mergers Commission (1999).

33 Cowan (2012) suggests aggregate consumer surplus is likely to fall as a result.

34 See Hotelling (1929).

35 See Thisse and Vives (1988), and Corts (1998).

36 See Holmes (1989).

37 See Villas-Boas (1999), and Fudenberg and Tirole (2000).

38 The US Supreme Court's view of profits from monopoly power has been that: The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts “business acumen” in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct. *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004)

39 This is reflected in regulators use of this principle when setting the prices of a regulated monopolist.

40 Leeson & Sobel (2008) model this and identify that there is a sizable industry devoted to selling firms more profitable ways to price discriminate. Peeperkorn (2008) makes the point that prohibiting a cartel might also be said to have a negative effect if it discourages cartel members from taking risky investments in innovations. Ever greater incentives to innovate are therefore clearly not always desirable.

41 As set out by Thisse and Vives (1988).

42 The model incorporates bargaining over prices, and estimates cost and bargaining ability parameters using a pricing model in which each stent manufacturer and hospital engage in bilateral Nash bargaining.

43 See also Stavins (1996).

44 See Vickers (2001), p6.

45 See Elhauge (2009).

46 See Nalebuff (2009), p13. If the firm's unilateral conduct in partitioning the market does not change the relevant market that is defined, then by price discriminating the firm increases the profit earned in the relevant market when it profit maximises and so becomes a more powerful monopoly. Alternatively, if the firms partitioning conduct creates additional relevant markets over which the firm is then dominant then the conduct increases the number of dominant positions that the firm holds.

- 47 In the EU the partitioning of national markets can be investigated since it can undermine the policy goal of a single market (we discuss this in section 7). However, partitioning might describe a strategy used in many different types of price discrimination scheme: partitioning the market for large volume and small volume purchases; partitioning the market for naïve and sophisticated consumers; partitioning the market for tickets purchased by pensioners and families; or in extremis partitioning the market for each individual consumer.
- 48 For example setting up drip pricing or price shrouding schemes. While these schemes might also be approached through the lens of consumer protection, since market power increases the incentive to invest in these schemes they have been (see Tetra Pak II), and are likely to continue to be, examined by some competition agencies.
- 49 Kwoka (2013)
- 50 Haas-Wilson and Garmon (2009) and <https://www.ftc.gov/enforcement/cases-proceedings/0110234/evanston-northwestern-healthcare-corporation-enh-medical-group>
- 51 See ACM (2013) particularly section 4.3. See also Armstrong and Vickers (2012) who show that price discrimination between sophisticated and naïve consumers can sometimes lead to the exploitation of naïve consumers to subsidise sophisticated consumers, while in other circumstances leading to naïve consumers being protected by the existence of sophisticated consumers.
- 52 Ezrachi & Gilo (2009).
- 53 For example, in Chile price discrimination by a monopolist has been identified as anticompetitive where it did not reflect differences in cost. See Vásquez Duque (2015), p27-29.
- 54 These can be interpreted as excessive pricing rules as well as intertemporal or geographic price discrimination schemes (if the firm also operates outside the area affected by the emergency). The price discrimination interpretation is particularly relevant when the price before the emergency or in a different geographical area is used as a benchmark to identify what is an excessive price.
- 55 Nalebuff (2009).
- 56 Baker and Salop (2015). O’Connell (2015) also suggests that there remains discretion to take this more expansive approach to section 5 enforcement.
- 57 O’Donoghue & Padilla (2013) identify that it has been used to address non-exclusionary price discrimination based directly or indirectly on the nationality or residence of the customer.
- 58 Guidance on prioritisation of cases under article 102 was limited to exclusionary conduct.
- 59 United Brands Company v Commission (1978) Case 27/76 ECR 207
- 60 Geradin & Petit (2005). However, this is rebuttable with an efficiency defence.
- 61 Defining excessive prices is notoriously difficult, see OECD – Background Paper on Excessive Pricing (2011).
- 62 There may be a question as to which consumers are relevant in this exercise. Here we take it that the relevant consumers are those that would purchase if price discrimination were permitted. This therefore includes any that might decide not to purchase if price discrimination were not permitted. If the analysis were to focus only on those that purchase when there is a uniform price then, by assumption, it would identify harmful effects from any price discrimination used by a dominant firm since this would increase the price paid by this group of consumers (without considering the lower prices paid by others).

63 Peeperkorn (2008) suggests that prima facie we might presume that first-degree price discrimination by a dominant firm would be harmful to consumers. He also suggests that partitioning conduct by a dominant firm to facilitate price discrimination that does not expand output could also prima facie be presumed to be harmful to consumers. The burden would then be on the firm to identify efficiencies.

64 While there could be cases where recurrent static welfare losses outweigh dynamic benefits, balancing these is likely to be extremely difficult and so a cautious approach is to give greater weight to dynamic benefits where they arise. Carlton and Heyer (2008) point out that in general, evidence suggests that in many industries there are already sub-optimal incentives to innovate and develop new and better products, and that antitrust policies that further deter such activity may be of particularly great concern.

65 For example, concerns over fairness and a level playing field might justify worries about distortions, similarly if policymakers were concerned about protecting certain types of firms this might lead to similar rules against distortions. Section 7 looks at the other policy reasons for investigating price discrimination.

66 Yoshida (2000).

67 Degraba (1990).

68 Backward integration would include a retailer vertically integrating up the supply chain into production of the product(s) that it sells.

69 Katz (1987).

70 Inderst & Valletti (2009).

71 Antitrust Modernisation Committee (2007).

72 Critics of the act have also noted this appears to restrict attention to only the downstream firms that are customers of the price discriminating firm rather than the potentially wider set of firms within the relevant market (Blair and DePasquale, 2014).

73 In re McCormick & Co., Docket No. C-3939 (2000). In doing so the FTC cited the Morton Salt inference that injury to competition at the retailer level can be inferred where substantial and durable price discrimination exists between competing purchasers who operate in a market with low profit margins and keen competition. However it noted that in examining McCormick's discounts, it did not simply apply the *Morton Salt* presumption in finding injury to competition, but examined other factors, including the market power of McCormick and the fact that discounts to favoured chains were conditioned on an agreement to devote all or a substantial portion of shelf space to the McCormick line of products.

74 Woodman's Food Market, Inc. v. Clorox Co., No. 15-3001 (7th Cir. 2016), referring to Luxor (1940) and General Foods (1956).

75 JJ. Truett Payne Co. v. Chrysler Motors Corp., 451 U.S. 557, 561 (1981).

76 Cash & Henderson Drugs vs. Johnson & Johnson, 799 F.3d 202 (2d Cir. 2015).

77 Volvo Trucks North America, Inc. v. Reeder-Simco GMC, Inc. (04-905) 546 US 164 (2006)

78 T-128/98 [2000], ECR II 3929, upheld on appeal by ECJ in C-82/01 [2002], ECJ 9297.

79 The need for the intermediaries to be in competition with one another in order for a distortionary effect was confirmed in the Kanal 5 judgement of the ECJ in 2008. Kanal 5 Ltd and TV 4 AB v. STIM, C-52/07 [2008] I-09275

80 Note that it is not sufficient for the favoured intermediary to asymmetrically constrain the unfavoured intermediary while remaining unconstrained by that intermediary. In that case, the lack of a constraint from

the unfavoured intermediary means there is no constraint that can be further weakened as a result of the price discrimination.

81 See Nazzini (2012) who suggests a significant distortion of competition test which requires: a) a significant effect on costs of downstream firms; and either; b) the significant differences in cost affect market outcomes, or c) a negative impact on productive or dynamic efficiency of some downstream firms compared with others.

82 For example, the Supreme Court in Brooke Group (1993).

83 See OECD – Background Paper on Predatory Foreclosure (2004).

84 Similarly, in Chile a small airline carrier (DAP) accused the main carrier of predatory pricing, as a response to its entry in the route *Santiago-Punta Arenas* (a city located in extreme south of Chile). One of DAP's main arguments was that the incumbent responded significantly more aggressively to the prices of tickets sold in *Punta Arenas*, DAP's hub airport, than to the prices of tickets sold in *Santiago* (the incumbent's hub airport) for the same route. See the decision in the following link: http://portal.tdlc.cl/tdlc/TDLCComisiones/Resoluciones/Res_percent20479-1996.pdf.

85 Napp Pharmaceuticals No. CA98/2D/2001. <https://www.gov.uk/cma-cases/napp-pharmaceutical-holdings-ltd-alleged-abuse-of-a-dominant-position>.

86 The OFT fined Napp £3.21 million (reduced to £2.2 million on appeal) and were ordered to reduce prices in the community sector and reduce the difference between hospital and community prices. Ex-post evaluation of the decision in 2011 identified that following the decision competition in the market had increased and saved the National Health Service at least £1.5 million each year.

87 OECD – Background Paper on Fidelity Rebates (2016a).

88 Virgin/British Airways (2000) No. 2000/74/EC OJ L30/1. Confirmed on appeal by the CFI in T-219/99 [2003] ECR II-5917, and subsequently by the ECJ in C-9504 P [2007] ECR I-2331. <http://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32000D0074&from=EN>.

89 Clearstream Banking AG and Clearstream International SA v. Commission [2009] Case T-301/04, ECR II-3155.

90 Soda-Ash - Solvay [2003] OJ L10/10.

91 Case COMP/C-3/37.990 — Intel, [http://eurlex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52009XC0922\(02\)&from=EN](http://eurlex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52009XC0922(02)&from=EN).

92 This is most clear in cases where the rebate is conditional on purchasing exclusively from the firm.

93 These 'incontestable' sales are difficult to identify and there appears little justification for simply assuming that a dominant firm's existing sales are all 'incontestable'.

94 See Farrell (2016) [https://one.oecd.org/document/DAF/COMP/WD\(2016\)61/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2016)61/en/pdf)

95 United States District Court, District of New Jersey, Civil Action No. 08-4168 (MLC), 28 March 2014: http://res.cloudinary.com/lbresearch/image/upload/v1396896076/Eisai_v_Sanofi_3_28_Opinion_Unsealed_nbzekj.pdf

96 Nalebuff (2005).

97 This might include the impact on equally efficient rivals as well as less efficient rivals that might have been expected to constrain the incumbents pricing.

- 98 Pollina (2014).
- 99 Elhauge (2009). Alternative proposals include one from Lambert (2005) which suggests making a presumption that above cost bundles are legal, absent specific evidence to the contrary from a complainant.
- 100 Crane and Wright (2009) suggest that firms are often unlikely to be able to credibly threaten to set the unbundled price above the monopoly level since this will involve a profit sacrifice. Given their view that this is unlikely to happen often they therefore question the use of Elhauge's rule.
- 101 LePage's Inc. v. 3M, 324 F. 3d 141 (3d Cir. 2003).
- 102 See Markus (2008).
- 103 Cascade Health Solutions v. PeaceHealth, 515 F.3d 883, 906 (9th Cir. 2007).
- 104 OECD – Background Paper on Margin Squeeze (2009).
- 105 Communication from the Commission — Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 45, 24.2.2009, p. 7–20. [http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52009XC0224\(01\)](http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52009XC0224(01))
- 106 As set out in Oscar Bronner the test is: (1) the refusal must be likely to eliminate all competition in the secondary market on the part of the person requesting access; (2) there is no objective justification for the refusal; and (3) the service in itself is indispensable to carrying on that person's business, inasmuch as there is no actual or potential substitute in existence. Case C-7/97, Oscar Bronner GmbH & Co. v. MediaprintZeitungs und Zeitschriftenverlag GmbH & Co., 1998 E.C.R. I-7791).
- 107 OECD (2009), see the Executive Summary.
- 108 The ICA's opinion: <http://en.samkeppni.is/published-content/news/nr/2399>
- 109 Test-Achats C-236/09.
- 110 For example, differential pricing in insurance markets may reflect the different risks and hence expected costs of insuring different consumers.
- 111 See <https://www.washingtonpost.com/news/wonk/wp/2015/12/22/women-really-do-pay-more-for-razors-and-almost-everything-else/>; also <http://www1.nyc.gov/site/dca/partners/gender-pricing-study.page>.
- 112 The provider said: “The areas that experience higher prices will also have a disproportionately higher population of members of the financial services industry, people who tend to vote Democratic, journalists and any other group that is more heavily concentrated in areas like New York City.”
- 113 In addition, in these cases the differences in price may not qualify as price discrimination in the economic sense. For example these ‘single markets’ are not necessarily the same as the relevant antitrust market that would be defined by a competition agency, instead they are aspirations. Therefore, price differences in these cases might reflect the fact that the products are differentiated rather than there being discrimination.
- 114 See Geradin and Petit (2006), p7, referring to United Brands. See also Jones and Sufrin (2014), p586 referring to GlaxoSmithKline.
- 115 Bill C-49.
<http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=6828350&Language=E&Mode=1>
- 116 See commentary: https://www.dwpv.com/~media/Files/PDF_EN/2016/2016-01-18-Top-Competition-and-Foreign-Investment-Review-Trends-and-Issues-for-2016.ashx

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- 117 See Competition Policy Review, 2015, Final Report - Recommendations
<http://www.australiancompetitionlaw.org/reports/2015harper-recs.html#30>.
- 118 See United States v. Rx Depot, Inc., 290 F. Supp. 2d 1238 (N.D. Okla. 2003) in which the Department of Justice filed suit against Rx Depot, a firm that helped consumers obtain prescription pharmaceuticals from Canada.
- 119 See Willig (1998) suggesting that less than 10 percent of anti-dumping cases are predatory.
- 120 See Bown and McCulloch (2012), and Dr Alan Fels in session 36 of the WTO Public Forum (2010) “Antidumping regime: A view from the competition policy perspective”
https://www.wto.org/english/news_e/news10_e/pfor_pm_17sept10_e.htm.
- 121 See Deller (2016).
- 122 The option to examine exploitative behaviour through a market study was made explicitly in relation to PPI where the OFT noted that it might have brought article 102 cases against suppliers of credit and PPI, or that action under consumer protection laws might have been used. However, it instead took the view that a market investigation was preferable since that allowed for a consideration of all aspects in considering whether a problem existed and, if so, how best to remedy the problem both from the competition and consumer perspective (OFT 2010, footnote 31).
- 123 There are a number of potential concerns over the role of data in the digital economy. See OECD (2016b).
- 124 For example, geo-blocking of movie and sport content often makes this inaccessible in different countries. See the European Commission’s findings in its e-commerce sector market inquiry
http://europa.eu/rapid/press-release_IP-16-922_en.htm
- 125 See Manta and Olson (2015).
- 126 These are products or “things” that are connected to the internet, for example cars, personal devices, or devices within the home.
- 127 In contrast, Booking.com or uber’s standard services are in this view traditional platforms that simply bring together buyers and sellers.
- 128 See https://www.washingtonpost.com/posteverything/wp/2014/11/03/if-you-use-a-mac-or-an-android-e-commerce-sites-may-be-charging-you-more/?utm_term=.6cf5ea1671df citing Hannak et al (2014).
- 129 See for example Cohen, Hahn, Hall, Levitt and Metcalfe (2016) who estimate consumer surplus that is not extracted by Uber.
- 130 Anderson and Simester (2010).
- 131 The broad range of behaviours that help to inform these personalised prices make it difficult for consumers to evade price discrimination. Shiller (2014) gives the example of a restaurant conducting price tests to identify those with higher and lower valuations. In those circumstances, a consumer can prevent the restaurant identifying his type by refusing to following a simple heuristic such as do not purchase at high prices. In contrast, when the price is set on the basis not of a single behaviour but through a wide range of behaviours over a significant period, the consumer is unlikely to be able to avoid revealing their type.
- 132 See Council of Economic Advisers to the President of the United States (2015).
- 133 See Valentino-Devries, Singer-Vine, and Soltani (2012).
- 134 See Mikians, Gyarmati, Erramilli and Laoutaris (2013).

135 See Chen, Mislove and Wilson (2016) develop a methodology for detecting algorithmic pricing, and use it empirically to analyse their prevalence and behaviour on Amazon Marketplace. They identify algorithmic pricing strategies adopted by over 500 sellers.

136 Typically, a non-horizontal merger review focuses on whether the merger creates the ability and incentive to exclude rivals, and if so, whether this exclusion is likely to have the effect of increasing market power and reducing competition. It is less clear whether merger review would also investigate whether a merger would create the ability and incentive to partition a market and improve the effectiveness with which the firm is able to price discriminate to raise margins. For example, a merger might bring together two firms' big data and analytics capability allowing it to better identify consumers' willingness to pay. This seems worthwhile since the merger risks harming consumers, either directly by increasing the price they pay, or indirectly by raising the advertising costs of the firms from which they purchase in other markets.

137 See House of Lords Select Committee on European Union, (2016) para 291.

138 See Kharif (2013).

139 Note that this is not a market-clearing price, as the platform may itself be subject to constraints within the relevant market. See Hall, Kendrick and Nosko (2015), Chen and Sheldon (2016), and Cohen, Hahn, Hall, Levitt and Metcalfe (2016).

140 See Tam and Worthen (2010) and www.abine.com/index.html

141 However if only a small proportion of consumers remain anonymous then firms may find it profitable to charge higher prices to anonymous consumers in order to incentivise them to reveal themselves.

142 www.datacoup.com/

143 See Fudenberg and Villas-boas (2012) and Montes, Sand Zantman & Valletti (2016).

144 See OECD (2011).

145 Setting quality is however not straightforward for an ISP since the internet is a network of networks and so the ISP may need to negotiate transit and/or peering with other networks.

146 See Richards (2015).

147 Reggiani and Valletti (2016) use a model of a two-sided market with heterogeneous content providers and a competitive bottleneck in which the internet service provider controls access to the consumer.

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