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An empirical legal investigation of online price discrimination

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Conclusion

7.1 INTRODUCTION

Online price discrimination is a fascinating yet complex puzzle to investigate. Consumers react strongly to instances of this practice, companies have an economic incentive to engage in it, and the practice seems to mostly fall through the cracks of legal regulation. Our understanding of online price discrimination has not yet fully crystallized, making it difficult to assess the role that legal regulation could and should play. Price discrimination dates back many decades. Almost immediately after pricing systems were invented, ways followed to differentiate between consumers and their willingness to pay. Now that it has moved online, the practice is increasingly challenging long-standing legal and societal principles.

The use of pricing algorithms and large amounts of consumer data add to the complexity of the practice and give rise to an exacerbated information asymmetry between companies and consumers, potential (structurally) discriminatory or exploitative outcomes, with little control over the process. This thesis investigated online price discrimination in all its ambiguity and assessed what the implications of the findings were for further research and (legal) regulation, in a manner that would not be accusatory or stifling towards companies nor would lose sight of the problematic elements associated with the nature of the practice.

Section 7.2 answers the central research question of this thesis. Section 7.3 presents the contribution of this thesis to the existing streams of literature, methodology and practice. Section 7.4 suggests concrete regulatory measures that I recommend be taken. Section 7.5 offers concluding remarks.

7.2 ANSWER TO KEY QUESTION

The key question addressed in this thesis was the following:

What are the perceptions of consumers and companies of online price discrimination, and what are the implications of these perceptions for market regulation?

This research question has three components: (1) consumer perceptions, (2) company perceptions and (3) regulatory implications. I will answer the research question in more detail by addressing each of these three components in the subsections 7.2.1 through 7.2.3 respectively, but I will first offer a short answer to it.

The short answer to the key question is that consumers judge a personalized price along at least its outcome (i.e., a higher or lower price than peers) and its process (i.e., the grounds that are used to personalize the price). Zooming in on the latter, there are grounds that are not legally prohibited, but evoke negative reactions as strong as legally protected characteristics. The negative reactions are far-reaching and include intentions to complain publicly and a decrease in trust in the digital market. Companies view online price discrimination in a neutral light and are aware of the economic benefits (i.e., through efficiency, effectiveness, and relevance). For companies, consumer backlash is a key factor in the decision to (not)

engage in online price discrimination. With the economic incentive still there, this may urge companies to experiment with opaque applications of online price discrimination, or (framing the offer as) personalized discounts.

This further raises the problems of transparency, control and the risk of unfair outcomes. The contrast between consumer perceptions and company perceptions implies that addressing these problematic elements of online price discrimination is not only a question of consumer empowerment through i-frame interventions (i.e., interventions that focus on individual behavior, such as through nudges and providing information to consumers), but also of changing markets and addressing the (asymmetric) systems that enable the problematic elements in the first place. Through add-ons and novel interpretations, the legal framework can address these problematic elements to an extent. However, other modes of regulation (i.e., markets, norms and technology) need to be explored simultaneously.

7.2.1. Consumer perceptions

As both ‘creators’ and ‘receivers’ of the price, consumers play a fundamental role in the mechanisms of price discrimination. My findings confirm that consumers find personalized pricing unfair and that they tend to react accordingly. In other words, both consumer studies (Chapters 4 and 5) found that all forms of price discrimination and the grounds used were deemed unfair or unacceptable, albeit some more unfair than others.

Chapter 4 uncovered the mechanisms through which consumers form their fairness perceptions and the consequences of these fairness perceptions. I found that consumers judge a personalized price along (at least) two dimensions: procedural and distributive fairness. Respondents showed lower negative perceptions when they received a lower price relative to their peer. In addition, they deemed prices that were based on purchase history a bit fairer than prices based on device type, with the latter being a ground that does (yet) not align with personal and social norms. Procedural fairness, the way in which a price was set, was significantly related to all ten outcome variables and strongly influences consumers behavioral, attitudinal, and emotional reactions to a personalized price.

This finding of procedural fairness playing a large role in consumers’ fairness perceptions, led to the study in Chapter 5, which sought out to investigate consumers’ unfairness perceptions regarding segmentation bases and the extent to which the perceptions line up with grounds currently prohibited in law. The survey study showed that while consumer perceptions generally align with what is currently prohibited in law, there are some ‘new’ grounds, in particular intelligence and physical appearance, that elicit similar negative perceptions as legally prohibited grounds. One of the ways in which these negative perceptions might manifest, is through a decrease in trust in the digital market, which could prove to be

problematic in terms of securing a fair and well-functioning market where consumers feel safe to interact with companies.¹

7.2.2. *Company perspectives*

Chapter 3 reported on current company perspectives of online price discrimination, providing a ‘behind the scenes’ view of the justifications that companies bring forward, furthering our understanding of the current state of the art and the applications that we might expect in the future. The findings indicate that companies view online price discrimination in a neutral light and are aware of the economic benefits. Personalization, using consumer data in marketing communication, is an attractive avenue for companies. It can lead to higher efficiency, effectiveness, and relevance and as a result prove to be rather profitable.² Differentiating prices based on consumer data is not different, allowing companies to extract consumer surplus that they might not have been able to reach under a regime of non-personalized (i.e., uniform) pricing. Understandably so, the economic incentive will be a driver for companies to experiment with price discrimination.

Companies also show resistance towards using price discrimination, at least in the form of selective price increases. Consumer backlash was brought forward as one of the key factors in the decision to (not) engage in online price discrimination. With the economic incentive still there, this will likely urge companies to experiment with personalized discounts or other ways of framing a marketing offer to the benefit of the consumer, even if this might not actually be the case. The recent case of Tinder engaging in personalized discounts confirms this expectation.³ In terms of perceptions regarding regulation, there seems to be some apprehension as to the extent to which the current legal framework applies or is sufficiently effective in mitigating the risks that come with big data applications. Companies extensively supported self-regulation and ethical codes, leaving the ethics of pricing to companies rather than the legislator – who is often not informed about the state of the art, according to respondents.

7.2.3. *Implications for market regulation: consolidating interests*

To put companies completely across from consumers on a spectrum of perspectives on online price discrimination, would be too short-sighted. Although there are some clear violations of the existing legal framework thinkable, such as inherently aggressive or misleading practices,⁴ the grey area is one where the interests of companies and consumer potentially meet – online price discrimination often finds itself in this grey area. Some applications of

¹ Tang, Hu & Smith 2008; OFT 2013a, p. 20.; Ofcom 2020; Rott, Strycharz & Alleweldt 2022.

² Shiller 2014; Dubé & Misra 2022.

³ ACM 2024.

⁴ See Article 7 and 8 CRD and the Annex.

price discrimination can be beneficial for consumers and still meet part of the economic incentive of the company.

This is where the government and subsequently the legislator come in, to create a playing field that places constraints on the behavior of companies and consumers. Only then can the playing field be competitive yet fair in terms of the bargaining position of its players. The role and interest of the government here is to monitor applications of online price discrimination, similar to the monitoring that has occurred for previous digital developments that challenged the market and the existing legal framework.⁵ To hold price discrimination up to the light in terms of desirability requires it to be brought to light more than it is now. To enforce a rigid equality rule, or to ban all instances of price discrimination *a priori*, is likely not the way to go due to the practice's ambiguous nature.⁶

There are at least three problematic elements associated with online price discrimination: the lack of transparency, the lack of control over the personalized price and the risk of unfair outcomes. Consumer unfairness perceptions can have far-reaching consequences. A personalized price that is deemed unfair, can decrease consumer trust in the digital market, which would be detrimental to one of the main goals of the EU Digital Single Market strategy, which is to foster transparency and fairness for maintaining consumer trust and safeguarding innovation.⁷ The findings from Chapter 4 that consumers judge a price based on (at least) distributive and procedural fairness, implies that merely providing transparency about the existence of price personalization is not enough to empower consumers to consider the fairness (or risks) of a transaction, as it is only one of the factors that they consider. The findings from Chapter 5 address the debate regarding the ability of law to keep up with developments in data that can be used for online price discrimination. Regulation through law is likely not enough to keep up with the developments in online price discrimination and the underlying technologies.⁸ Furthermore, the structural challenges that online price discrimination pose for the digital market call for a more fundamental redesign of market interactions, one that cannot solely be reached through consumer-level (i-frame) interventions.⁹

Inspired by Lessig's 'Code 2.0', Chapter 6 proposed four regulatory avenues: markets, norms, technology and law. First, markets (including self-regulation) can impose constraints on the problematic elements of online price discrimination. There is a large role for self-regulation and industry involvement to set minimum norms of behavior. To prevent companies holding off formal legal regulation by 'ethics washing', a co-regulatory approach should be explored where the self-regulatory framework serves as an enforcement tool.

⁵ EC 2018b.

⁶ Back in 2013, the OFT concluded that it was impossible 'to conclude whether, in general, online personalised pricing is harmful or beneficial to consumers.' See OFT 2013b, p. 11 under 1.20.

⁷ EC 2015, §3.3.1. See also Tang, Hu & Smith 2008; OFT 2013a, p. 20.; Ofcom 2020; Rott, Strycharz & Alleweldt 2022.

⁸ Bennett Moses 2007.

⁹ See also Helberger et al. 2024, p. 12.

Second, norms play an important role in constraining unfair applications of online price discrimination. Collective vocal outrage, ‘naming and shaming’-initiatives and norm-setting by institutions are ways in which norms can constrain problematic elements of online price discrimination. However, the complexity and intransparency of personalized pricing practices might mitigate the extent to which norms can form an effective constraint on the practice.

Third, regulation via technology architecture can provide built-in boundaries in user interfaces and pricing algorithms that limit the extent to which companies can experiment with personalizing prices. In addition, features can be embedded into the technology to bring attention to ethical dimensions such as transparency (e.g., through logging and monitoring) and fair outcomes (e.g., through discrimination-aware algorithms).

Fourth, the legal framework currently provides limited protection and does not prescribe a clear minimum standard for behavior.¹⁰ However, this is not to say that legal regulation cannot further address the intransparency, lack of control and risk of unfair outcomes associated with online price discrimination. There are add-ons and amendments conceivable, that range from easily executable (e.g., amending Article 6(1)(ea) to include mention of parameters) to more fundamental (e.g., rethinking the UCPD unfairness test and the benchmarks for abuse under competition law). The three problematic elements and the four modes of regulation should be considered together, keeping in mind that legal reform is often needed to accomplish changes in the other modes.¹¹

7.3 CONTRIBUTION AND FUTURE RESEARCH

7.3.1 *Contribution to literature and methodology*

This thesis adds to the existing stream of literature in three ways. First, this thesis adds empirical findings with regard to company perspectives. The current debate on the prevalence and implications of online price discrimination has been rather consumer focused. Whether online price discrimination has negative consequences for consumers is a moot point, regardless of the challenges and concerns, if companies do not engage in this practice. Although there is anecdotal evidence of online price discrimination, the question of how prevalent this practice is has not been captured in quantitative research.¹² This is surprising, given the benefits that online price discrimination can have for companies.¹³ Even if price fluctuations are observed through such quantitative studies, it can be rather difficult to isolate the cause for identified price differences and to conclude that it was a result of online price discrimination. The interview study on company perspectives in Chapter 3

¹⁰ Sears 2020; Heidary & Custers 2021; Grochowski et al. 2022. See also Chapter 2.

¹¹ Lessig 2006, p. 124.

¹² Mikians et al. 2012; Vissers et al. 2014; EC 2018a; BMJV 2021.

¹³ Shiller 2014; Townley, Morrison & Yeung 2017; Dubé & Misra 2022. See also Chapter 3.

takes a slightly different approach to gaining insights on the prevalence of the practice, by identifying and confirming factors that determine (non-)engagement in the practice. From there, it can be assessed how feasible online price discrimination currently is, and what future applications we might expect. The interview study in Chapter 3 adds to the current consumer-centric debate and the quantitative approach that was taken by other scholars.

Second, this thesis deployed a mixed methods approach to examining online price discrimination. Similar to the lack of empirical company perspectives, empirical survey and experimental studies on consumers' (price) fairness perceptions regarding personalized pricing are still in their infancy.¹⁴ The current European legal framework does not provide us with sufficiently clear norms of minimum behavior, which raises the question whether there are alternative routes for regulation and to formulate minimum standards of company behavior. The mixed methods in this thesis aid in exploring the current societal norms (Chapter 4 and 5) against the background of company perspectives (Chapter 3), to add to the current legal regulatory debate on online price discrimination. In addition to qualitative methods (Chapter 3), this thesis deployed quantitative methods to further study the concepts of 'negative consumer reactions' (Chapter 4) and 'procedural fairness' (Chapter 5). As such, a mixed methods approach is an excellent way to obtain both rich (con)textual data and to dive deeper into certain variables.¹⁵

The context of personalized pricing, as opposed to other forms of pricing, is different in the sense that it is based on personal data, rather than market variables such as demand and supply as is the case with dynamic pricing. As such, consumer perceptions might be more negative and particularly newer forms of price personalization might not (yet) align with personal and social norms.¹⁶ As such, this thesis provides a comprehensive model of possible antecedents and consequences of fairness perceptions regarding online price discrimination. For example, norm (mis)alignment was a key factor in predicting fairness perceptions: if a pricing practice is perceived to (mis)align with current norms, it leads to unfairness perceptions among consumers. This provides insight in the role of norms as a possible constraint on online price discrimination, as part of the holistic regulatory model that I proposed in Chapter 6. Furthermore, the company perspectives provide insight in the role of self-regulation and companies setting minimum norms of behavior, contributing to our understanding of the market as a possible constraint on online price discrimination (Chapter 6).

Third and last, this thesis assesses the role of regulation in mitigating challenges that online price discrimination can pose for the digital market by exploring alternative regulatory

¹⁴ Examples are Poort & Zuiderveen Borgesius 2019; Priester, Robbert & Roth 2020; Hufnagel, Schwaiger & Meritz 2022.

¹⁵ Creswell 2014.

¹⁶ Survey research, although scant, reveals that consumers view online price discrimination quite negatively, but that some forms of price personalization are deemed more unacceptable than others. See Turow, Feldman & Meltzer 2005 and Poort & Zuiderveen Borgesius 2019. See also Chapter 4 and 5.

avenues (Chapter 6). Previous research has mainly focused on the role of specific fields of law or a combination of fields of law, pleading for a more integrated approach that combines branches of law in the pursuit of a more holistic level of, among other goals, consumer protection.¹⁷ Chapter 6 adds to the existing discussion by not only considering law as a regulatory avenue and providing recommendations to make the existing legal framework more integrated, but also by considering alternative routes of regulation. By applying Lessig's 'Code 2.0' regulatory framework to illustrate this point, this thesis adds to a scholarly debate that was almost exclusively focused on exploring law as a potential solution to online price discrimination. Regulation through law is only one of the ways in which the problematic elements of online price discrimination (i.e., lack of transparency, lack of control and unfair outcomes) can be addressed. Regulation through technology architecture, norms and the market are avenues of regulation that should be explored complementary to legal regulation, keeping in mind that legal reform is often needed to accomplish changes in the other modes.¹⁸

7.3.2. *Contribution to practice*

By focusing on both consumer perspectives and company perspectives, this thesis aims to provide empirical insights into the playing field of the parties involved in online price discrimination. As such, this thesis adds to practice in three ways. First, it provides preliminary insight for governments into the extent to which companies are aware and understand what is expected of them when engaging in online price discrimination. A notion raised in the existing literature is that law often is not sufficiently informed about the state of the art, which can result in uncertainty regarding the application of existing legal rules to new practices and the desired role of laws to ban, restrict or encourage a technology.¹⁹ If this thesis would only cover the legal framework and to what extent it sufficiently addresses online price discrimination, it would not gain insights in whether the assumptions underlying the law hold true in practice in its (lack of) application by the subjects whom it addresses.

The interview insights into *why* we are not seeing more disclosures from companies about their online price discrimination, informs us about what is going on in practice that might hinder effective compliance with the information requirement. The legal framework needs to be further assessed to what extent the current formulation and scope of the provisions already leave room for loopholes or constitute other sorts of inconsistencies. However, on top of that, the empirical insights provide us with a *reality check* of how (and if) these inconsistencies play out in practice. This thesis observed confusion among companies about

¹⁷ Koolen 2023.

¹⁸ Lessig 2006, p. 124.

¹⁹ Bennett Moses 2007. This was also echoed in the interview study in Chapter 3, where participants raised the point that governments should be better informed about the current state of technology and that there is a risk that legislators are going to pursue a policy based on (wrong) assumptions. See Chapter 3, §3.5.5 and Heidary et al. 2022, p. 10.

the applicability of certain provisions (e.g., 22 GDPR) and gained insights in which fields are top of mind for companies in terms of knowledge and compliance: being ‘GDPR-proof’ scores high, but other fields of law are often not mentioned or form more of an afterthought.

Second, the insights from this thesis provide insight into the direction in which the practice is developing: personalized discounts, rather than selective price increases. Perhaps unsurprisingly, consumers deem lower prices fairer than higher prices.²⁰ Framing a personalized price as a discount, might be an attractive route for companies to mitigate the otherwise strong negative reactions associated with instances of online price discrimination. The recent case of Tinder’s personalized discounts seems to confirm this notion.²¹ Alternatively, under the open formulation of the current information requirement of the CRD, merely stating that a price is ‘personalized’ can also lead to consumers thinking that this in fact means a relatively good deal for them.²² It is also imaginable that the fear of consumer backlash will drive companies to explore more covert forms of personalized pricing. These forms bear risks in terms of detection and enforcement and warrant continued attention and scrutiny by regulators. Insights in the state of the art and the direction in which this will develop, can help policymakers and legislators to formulate integrative solutions that address the different ways in which online price discrimination can manifest itself in the digital market and the interests involved. Apart from formulating new regulatory solutions, it also can help provide a new perspective on the current legal framework, in terms of the (desired) application of existing provisions.²³

Third, the mixed-methods approach in this thesis reveals that there are various (sometimes seemingly opposite) interests involved and that it is difficult to formulate a one-size-fits-all normative framework that fits online price discrimination and its facets, as its unfairness is highly contextual. Although some scholars have argued that first-degree price discrimination should be prohibited *a priori*, especially forms that are based on behavioral data,²⁴ I argue that we do not yet know enough to directly follow through with such a ban. Rather, a transparency-centric approach to the regulation of online price discrimination is preferable, complemented with regulatory avenues aimed at increasing control over the personalized price and constraining pricing behavior that could result in (structurally) unfair outcomes. This thesis maps the need for addressing these three elements of price discrimination (lack of discrimination, lack of control and unfair outcomes) and gives directions for how this could be done through the market, norms, technology and law (See Table 6.1). This integrative roadmap contributes to the current debate on online price discrimination, by mapping the possibilities and providing arguments for why the four modes should be considered simultaneously.

²⁰ Chapter 4; Hufnagel, Schwaiger & Meritz 2022.

²¹ EC 2024; ACM 2024.

²² Van Boom et al. 2020.

²³ Van Boom, Giesen & Verheij 2013. See also Chapter 6, §6.4.5.

²⁴ Rott, Strycharz & Alleweldt 2022; BEUC 2023b.

This thesis, therefore, provides a *reality check* by helping understand the playing field in which online price discrimination and the applicable legal framework operate. Without this reality check, the legal framework might become (more) disconnected from societal needs and technological developments.²⁵ As such, this thesis contributes to formulating evidence-based law and policy addressing online price discrimination. To create a playing field in which there are effective constraints (and freedoms) on online price discrimination behavior requires regulatory intervention. Driven by economic incentives, companies will continue to experiment with their pricing. Like previous instances, some anecdotal evidence will likely pop up from time to time, with negative reactions to match, rekindling the discussion on the need for regulation. Instead of exploring regulation *ex post*, this thesis provides a roadmap for regulatory directions that can be road-tested now. This thesis shows that to address the fundamental challenges that online price discrimination can pose for the digital market, a more fundamental approach is needed, proposing a holistic model consisting of alternative regulatory routes to complement the legal framework. Policymakers and legislators looking to strike a balance between the interests of companies and consumers can gain inspiration from this proposed regulatory model and the perspectives that it aims to address.

7.3.3. *Future research*

Future empirical-legal and doctrinal legal research can further the knowledge in this thesis in at least three ways. First, legal scholarship can further assess the extent to which the EU legal framework can accommodate online price discrimination. De Graaf (2019) has provided a rather exemplary first initiative towards this research goal, by assessing the extent to which existing Dutch contract law can help consumers get out from a transaction that involved a personalized price. Empirical-legal research could focus its efforts on road-testing the proposed additions and adjustments to the legal framework, such as additions to the CRD information requirement, the effectiveness of different templates for the information requirement, or further investigate the possibility (and desirability) of reversing the burden of proof for instances of online price discrimination.

Here, it is also highly recommended to organize a focus group – consisting of practitioners, lawmakers, and consumers – in which specific solutions are discussed in terms of desirability and feasibility. Legal scholarship could focus on further understanding systemic risks that could occur under online price discrimination. Article 40 DSA provides a basis for ‘vetted researchers’ to obtain access to data of VLOPs and VLOSEs for this very purpose: detection, identification, and understanding of systemic risks in the EU.²⁶ Researchers

²⁵ Van Boom 2013. His comments apply universally to the added value of empirical research in general.

²⁶ See also Article 34(1) and 35 DSA.

should look towards streamlined ways in which to request access to such data, for example by designing templates that facilitate requesting such access.

Second, empirical-legal research could focus on systematically analyzing existing codes of conduct and the presence of pricing ethics in such codes. In cooperation with e-commerce associations, research can explore the *need* to draft a separate code of conduct and if so, what elements to consider. These findings can also be complemented by qualitative research, such as interviews with companies and consumers. With regard to algorithm audits, there needs to be close cooperation with data scientists and developers. Here, a systematic analysis of codes of conducts and company statements could also help identify the parameters that should be considered in an audit. Furthermore, legal research could also point out how the installment of such an independent auditor could (or should) be codified and what suitable sanctions would be for companies that do not pass the audit, as well as how such sanctions could be implemented in practice.

Third, research could shed further light on possible hurdles that could hinder effective enforcement and compliance. Qualitative methods (interview studies and focus groups) could further investigate the extent to which online price discrimination serves consumers' interests. Right now, there is little empirical research on how price advantages and disadvantages are distributed in (national) markets.²⁷ Such insights, for example through interdisciplinary collaboration with economists, will help further the political debate on suitable regulation (and enforcement) for online price regulation. As societal norms are subject to change, it is important for empirical-legal scholars to build on the current research on pricing norms, to assess whether, for example, the role that norm degradation or familiarity will play in consumers' perceptions towards online price discrimination. Empirical research could also further study price fairness perceptions, for example, by assessing fairness perceptions across different products, markets and other contextual variables, to assess whether there are differences across these areas. Findings from such research can help point towards certain products or markets where, for example due to a higher need or otherwise a large risk of vulnerability, exploring more stringent regulation and enforcement (i.e., prohibitions or stricter monitoring) for online price discrimination might be warranted.

7.4 RECOMMENDATIONS

The complexity and ambiguity of online price discrimination calls for a broader view on regulation. The practice is becoming more complex (i.e., more reliance on artificial intelligence and more complex pricing algorithms and consumer profiles) and covert (i.e., companies experimenting with personalized discounts, the use of proxies and other forms of non-transparency regarding the practice). To safeguard consumer welfare while not stifling innovation and beneficial applications requires a more fundamental approach to regulation.

²⁷ Miller 2014, p. 97-98.

This means pursuing a more holistic level of regulation, combining different fields of law and enforcement within the legal framework and exploring alternative regulation that could complement the legal framework. To address the structural asymmetry of the digital market and the fundamental principles that online price discrimination challenges, regulatory attention should be directed at exploring s-frame interventions (e.g., changing company incentives) in addition to addressing online price discrimination through individual-level interventions.

In this section, I put forward four recommendations for regulating and investigating online price discrimination going forward: clarifying the existing legal framework and road-testing additions (R1), increasing awareness and transparency (R2), increasing accountability through audits and self-regulation (R3) and stronger enforcement (R4).

7.4.1. Clarification of existing legal framework and road-testing additions

Recommendation 1: The European Commission should provide guidance on the applicability and scope of the current legal framework and, together with national legislators, consider regulatory add-ons to address the current lack of transparency, lack of control, and risk of unfair outcomes.

The effective boundaries on online price discrimination already existent in the current legal framework should not be overlooked. However, the current level of protection is limited. The different applicable fields of law that (should) cover online price discrimination, do not yet fully form an integrated and coherent legal framework to prevent businesses from making use of loopholes and inconsistencies.²⁸ Therefore, it is recommended that the European Commission provides further guidance on personalized pricing. The European Commission must consult other European bodies and (national) enforcement authority networks, such as the Consumer Protection Cooperation (CPC) Network, the European Data Protection Board (EDPB), the European Union Agency for Fundamental Rights (FRA) and the European Centre for Algorithmic Transparency (ECAT), to ensure that the guidelines are informed by the four fields of law relevant to online price discrimination (i.e., competition law, consumer law, data protection law and non-discrimination law). I recommend that in its guidelines, the European Commission addresses *at least* the following matters:

- The extent to which Article 22 GDPR applies to online price discrimination, answering the question what applications of online price discrimination constitute automated profiling.²⁹

²⁸ ACM 2022a, p. 5.

²⁹ The multiple interpretations and confusion surrounding this provision do not only flow from literature but is also a point that was brought forward in the interview study by companies themselves. See Zuiderveen Borgesius & Poort

- Clarification on whether companies are required to present an ‘non-personalized’ price next to the personal price, or at least inform the consumer about a floor price of reference prices.
- In the case of disclosure of personalized pricing under Article 6(1)(ea) CRD, how such a disclosure should be formulated and whether this includes (or should include) the mention of the parameters used to personalize the price.³⁰
- The extent to which instances of online price discrimination that fall outside the scope of Article 6(1)(ea) CRD (e.g., travel industries) should be disclosed.³¹
- Clarification on whether the burden of proof in bringing a case of personalized pricing should indeed be shifted to the company and what would constitute sufficient evidence to confirm a presumption of potentially unfair personalized pricing.
- Clarification on whether non-disclosure of a personalized price that falls outside of the scope of the CRD, constitutes a misleading omission under Article 7 UCPD and the extent to which the general unfairness test of Article 5 UCPD forms a ‘safety net’ for personalized pricing practices.

In Section 6.4.5, I have put forward several potential additions to the legal framework worth exploring. As a first step, Article 6(1)(ea) CRD should be amended to require the disclosure of the main parameters used to personalize the price. Preferably, the legislator takes the initiative in providing guidance on *how* this information must be disclosed, rather than only prescribing that certain information must be disclosed (see the second proposed guideline point in the enumeration above). Possible drafts for disclosure templates can be road-tested in terms of consumer reactions and understandability.³² As such, the updated information requirement can serve both as an i-frame intervention (i.e., empowering consumers, probably mostly after the transaction) and a s-frame intervention (i.e., disincentivizing companies to use non-transparent strategies or rethink current strategies).

Furthermore, other add-ons to the information requirement could also be considered, such as requiring companies to communicate the ‘impersonal’ price, or the prices presented to others. This could also help empower consumers (i.e., by making price comparison relatively easier) as well as clarify the rules of the game (i.e., increased transparency and possible incentive to reconsider pricing practices).

2017; Wong 2020 and Chapter 3, §3.4.3.

³⁰ This would be similar to the Guidance Document published by the European for the display of information of the other requirements in Article 6(1) CRD. See Annex I of EC, DG Justice Guidance Document concerning Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council (2014).

³¹ See Chapter 2, §2.3.

³² Van Boom et al. 2020.

7.4.2. *Increasing awareness and transparency*

Recommendation 2: Governments, national enforcement authorities, and other organizations should enter into dialogues with companies about the desirability of personalized pricing and increase societal awareness about the facets of online price discrimination, for instance through information awareness campaigns.

There needs to be a political discussion about the desirability of online price discrimination and to what extent it benefits consumers.³³ This political discussion should address the current distribution of price advantages and disadvantages and the extent to which it is desirable that companies can exert control over this distribution. Online price discrimination practices that seem to have economic gains as the main motivator, without any benefit to the consumer (e.g., improved service or product) or a greater goal (e.g., reducing social inequality), should be held against the light in terms of desirability.³⁴ As such, there should be more general awareness among policymakers about the pace and direction in which online price discrimination is developing. The findings of this thesis suggest that it is likely that companies will explore more covert forms or frame the price as a discount. Governments should monitor whether this is indeed the direction in which the practice is heading, for example by close cooperation with national enforcement authorities and by entering dialogues with companies themselves.

Governmental discussions on the desirability of these appearance forms of online price discrimination, before they are widespread or become more covert, is important. On a consumer-level, knowledge and awareness about the different facets of online price discrimination can be increased. This would include knowledge about the procedural aspects (e.g., the collection and use of data for personalized pricing), the distributive aspects (e.g., different forms of online price discrimination, benefits, and risks), and the remedies available in case of a suspected infringement. Here, it is also a matter of framing. Educating consumers on the risk of potentially being discriminated against, might lead to a more ‘tangible’ perception of injustice and loss than expecting consumers to grasp the magnitude of personal data that can be used by companies. This could urge consumers to become more alert of data protection violations and explore remedies available to them in data protection law: not because they are acting on privacy concerns, but because they fear being discriminated against.³⁵

Increased awareness and knowledge regarding the risks and benefits of online price discrimination is required, not as a solution, but rather as a prerequisite for measures to

³³ See also ACM 2022a, p. 5.

³⁴ Chapdelaine 2020, p. 35. See also Ben-Shahar 2017, p. 32: ‘raising the price on someone with high willingness to pay is only justified if it is done to lower the price for someone with low willingness to pay’.

³⁵ Drechsler & Benito Sánchez, p. 14.

increase control and consumer resilience or prevent undesirable outcomes. This could be effectuated through educating consumers, for example, in the form of information awareness campaigns, particularly in markets where switching has considerable economic implications (or is more difficult due to lock-in effects or a *need* among consumers), such as the energy market or financial market.³⁶ These campaigns can be executed by national enforcement authorities, anti-discrimination and consumer organizations, or other sorts of private associations.

Governments can subsidize the development of technological tools to assist consumers to (re)gain control over personalized pricing (e.g., facilitating price comparison), expand the information requirement, or codify a reversal of the burden of proof. However, if consumers are not *aware* of online price discrimination or do not know how to use said tools and remedies, such measures are significantly less effective.³⁷ Vulnerable consumers, such as consumers who are digitally less-skilled, have difficulty making ends meet, or otherwise deemed vulnerable online, will likely struggle with lower levels of awareness and knowledge and the ability to act accordingly.³⁸

7.4.3. Increasing accountability through audits and self-regulation

Recommendation 3: Working closely with national enforcement authorities, companies should put in place (EU-wide) standards, best practices, and codes of conducts and should foster the protection of normative principles such as transparency, professional diligence, fairness, and non-discrimination, assuring compliance with the current legal framework.

It is in companies' best interest to create and adopt self-regulation to maintain consumer trust and avoid reputation damage because of pricing strategies that cross boundaries. Companies could put in place (EU-wide) standards, best practices and codes of conducts and foster the protection of normative principles such as transparency, professional diligence, fairness and non-discrimination, while in compliance with the current legal framework.³⁹ These initiatives could be streamlined top-down, through European e-commerce (non-profit) organizations and associations that house a large amount of European online platforms and companies, such as Ecommerce Europe, the European Advertising Standards Alliance (EASA) or the European eCommerce and Omnichannel Trade Association

³⁶ UNCTAD 2014, p. 16.

³⁷ See for example Cranor 2012, where the same conclusions are drawn for online behavioral advertising.

³⁸ EC 2018a, p. 158-166; See also the research by Wang et al. 2024, where it was found that the most vulnerable groups with the lowest levels of AI knowledge and skills were mostly older, with lower levels of education and privacy protection skills than the average users.

³⁹ Albeit a legal provision, parallels can be drawn with Articles 35(1)(h) and 45 DSA, which encourages – and in the case of systemic risks: requires – VLOPs to draw up codes of conduct, considering the specific challenges of tackling different types of illegal content and systemic risks, in accordance with Union law, in particular competition and data protection law.

(EMOTA).⁴⁰ Inspiration can be drawn from the self-regulatory ethical framework used by Dutch insurance companies for data-driven applications and AI.⁴¹

The notion of an independent audit, focused on the fair and ethical use of algorithms in pricing, should also be explored.⁴² Inspiration can be drawn from the provisions of the DSA that require such an audit from VLOPs.⁴³ Here, an objective third party could issue quality marks for fair and ethical pricing algorithms, based on predetermined criteria for transparency, control and outcomes. These criteria could be determined through dialogues with national enforcement authorities, but also with companies themselves, gaining insight into the state of the art. Inspiration for the parameters for the quality mark can be drawn from the provisions of the proposed AI Act, such as human oversight, the ability to log, and a high quality of the data sets used for input. The algorithm audit for pricing algorithms should at least see on the input (e.g., the data used, GDPR compliance, data minimalization), transparency (e.g., procedural, explainability and technical; with the latter providing insights into the codes used), data safety (e.g., data streams, exchange and bundling of datasets), and outcomes (e.g., risk of systematic disadvantaging certain consumers, indirect discrimination and otherwise biased or unfair outcomes). Special notice should be given to the limitations of AI fairness, such as ‘ethics washing’ and blind spots.⁴⁴

Given that most of the companies that engage in online price discrimination are private entities and do not process sensitive data at a large scale, there is no requirement to designate a data privacy officer that must monitor compliance with the GDPR and serves as a main contact point for supervisory authorities.⁴⁵ However, as a best practice, companies should have at least one employee (or preferably a team in case of large companies) that can act as a main contact point for supervisory authorities and the algorithm auditor. From the interview study in Chapter 3, it followed that there is often a disconnect between departments within organizations, which could make it difficult to streamline the use and knowledge of online price discrimination.⁴⁶ Therefore, it is also necessary that within large companies, employees are educated about – or at least aware of – the use of (pricing) algorithms.

⁴⁰ See ecommerce-europe.eu, easa-alliance.org and emota.eu.

⁴¹ Dutch insurance companies have the obligation to use this framework to assess whether their applications meet ethical requirements. For instance, applications should ensure the prevention of legally prohibited discrimination and have fallback options in case the system fails. See [Verbond van Verzekeraars 2020](https://www.verbondvanverzekeraars.nl).

⁴² See also Chapter 3, §3.5.5.

⁴³ See Article 37, Recitals 92 and 93 DSA

⁴⁴ [Buyl & De Bie 2023](https://www.buyl.com).

⁴⁵ See Article 37 and 39 GDPR.

⁴⁶ See Chapter 3, § 3.5.3.

7.4.4. *Enforcement and compliance*

Recommendation 4: The European Commission should consider all facets of online price discrimination and work together with different (national) enforcement authorities to further investigate online price discrimination.

The European Commission and national enforcement authorities have sophisticated tools to detect price discrimination, such as carrying out (sweep) investigations⁴⁷ and requesting access to the pricing algorithms. As such, they play a major role in bringing to light instances of price discrimination and assessing the current level of compliance in practice. For enforcement actions, it is imperative that the European Commission and national enforcement authorities work closely with one another, both nationally and internationally. This also happened in the case of Wish and Tinder, where the Dutch ACM worked together with the European Commission and other European consumer law enforcement authorities.⁴⁸ Where needed, these authorities should also combine expertise, as online price discrimination touches upon different fields of law.⁴⁹ The relevant fields of law protect different dimensions of consumer welfare and must build upon and strengthen each other, to adequately protect the different facets of consumer interests and consumer welfare.⁵⁰

I recommend that national enforcement authorities, the European Commission and industry actors discuss the most desirable forms and goals of co-regulation, to ensure optimal compliance rates and the interests of companies. As technology is rapidly evolving, classic legal regulation needs this close link to the industry, to understand what is happening in practice, road-test assumptions and to assess the effectiveness of regulatory interventions. Furthermore, empirical-legal research could run a more systematic analysis of current terms of service and privacy policies and assess to how companies currently (do not) comply with the existing information requirement under the CRD. Creating an inventory of how companies formulate their personalization practices can help further insights in the current level of compliance.

In this thesis, I identified that online price discrimination will likely take on more covert forms or will be framed as personalized discounts. The recent case of Tinder using personalized discounts, echoes the latter.⁵¹ Enforcement authorities should give special attention

⁴⁷ Article 29 CPC Regulation 2017/2394. For recent sweep investigations carried out by the EC and CPC authorities, see: commission.europa.eu/live-work-travel-eu/consumer-rights-and-complaints/enforcement-consumer-protection/sweeps_en. The ability to carry out investigations can also be found in competition law (Article 20 Regulation 1/2003; Article 6 ECN+ Directive) and data protection law (Article 58 GDPR).

⁴⁸ ACM 2022b; ACM 2024.

⁴⁹ See also ECJ 4 July 2023, C-252/21, ECLI:EU:C:2023:537 (*Meta vs. Bundeskartellamt*), §47, where considerations from data protection law were used by the German authority to substantiate the claim that Meta's conduct was anti-competitive.

⁵⁰ Graef, Clifford & Valcke 2018, p. 203.

⁵¹ EC 2024; ACM 2024.

to price personalization framed as a discount and whether this constitutes a ‘good deal’ for consumers. With some adjustments and road-testing, the legal framework provides a good starting point for enforcement authorities and governments to enforce problematic applications of online price discrimination.

To strengthen compliance and protect consumers in the digital market without losing sight of company interests, a holistic view on regulation is needed: not only combining fields of law,⁵² but also other modes of regulation and exploring a system of self- and co-regulation. The relevant fields of law (i.e., consumer law, data protection law, competition law and data protection law), can complement each other to address some of the current inconsistencies present in the legal framework. For example, data protection law can offer tools (e.g., the right to information and the right to access⁵³) to reveal discriminatory practices and strengthen one’s evidentiary position under anti-discrimination or consumer protection law.⁵⁴

With online price discrimination taking on more complex and covert forms, it is imperative to explore alternative modes of regulation (e.g., through technology architecture, norms and the market) to address the current inconsistencies in the legal framework. I recommend that all four modes of regulation are explored simultaneously: the initiative taken by the municipality of Amsterdam to formulate contractual clauses is an excellent example of how the four modes of regulation come together.⁵⁵ Private initiatives to echo this route, in close cooperation with national enforcement authorities, in combination with exploring the possibilities for an independent audit (and quality mark) for pricing algorithms, would be a good place to start.

7.5 CONCLUDING REMARKS

Online price discrimination is one of the latest branches in the tree of (research on) online personalized marketing applications, but its offline form has simultaneously been rooted in our society for decades. Companies are increasingly able to move towards more personalized forms of marketing communication, such as advertisements and recommendations. We even see the same trend being applied to law, with scholars increasingly exploring the question whether (consumer) law should also be personalized to serve different types of individuals.⁵⁶ Personalization can prove to be very profitable for companies, and consumers tend to enjoy it to a certain extent. Online price discrimination is met with quite strong

⁵² Koolen 2023.

⁵³ Articles 12–15 GDPR.

⁵⁴ Drechsler & Benito Sánchez 2018, p. 12. See also Article 80 GDPR, which allows for a mandate for non-profits or other organizations, to make use of data subject rights on behalf of consumers.

⁵⁵ See Gemeente Amsterdam, ‘Contractvoorwaarden voor algoritmen’, amsterdam.nl/innovatie/digitalisering-technologie/algorithmen-ai/contractvoorwaarden-algoritmen/

⁵⁶ See for example Hacker 2017.

negative consumer reactions, who deem the practice to be unfair, illegal and unethical: these negative perceptions were observed in two survey studies in this thesis.

In this thesis, I explored online price discrimination and the tension between companies' economic incentive to engage in the practice and the current societal unfairness perceptions. This tension will likely persist and poses challenges for regulatory policy in terms of how much can and should be regulated. Due to the lack of sufficiently entrenched norms and the complexity of the underlying technology, neither a blanket prohibition nor giving the market free reign is likely the way to go forward. Instead, policymakers should invest in a tripartite solution, where all three parties (i.e., companies, consumers and government) take on a part of the responsibility. This thesis laid the groundwork for a regulatory framework that further embeds this shared responsibility.

The economic incentive to differentiate between consumers and their willingness to pay, paired with the increasing ability (i.e., technology) to do so, is a strong predictor that online price discrimination will become more widespread in the future. This incentive is also what led to similar practices decades ago, such as dynamic pricing and versioning. Online price discrimination is not a new phenomenon and many of the concerns (e.g., privacy erosion, exploitation, power and information asymmetries) have already been highlighted in relation to technologies that began to raise these concerns decades ago. Rather, the environment that online price discrimination finds itself in, has brought new challenges to old values ('latent ambiguities'⁵⁷). Given the fact that the public revolt against such pricing schemes can be dated back to the 19th century, it can be observed that even back then, there was a public dislike of the practice. As Odlyzko (2003) put eloquently: 'Technology changes rapidly, but human nature does not.'⁵⁸ The same dislike towards online price discrimination among consumers can still be observed. This dislike may very well be the reason that future applications of the practice will become more covert, or framed as offers that are to the consumers' benefit.

It is clear that there is not one single solution to the problems that reemerge in the context of online price discrimination. Furthermore, as Solove (2024) stated: 'many of AI's privacy problems preexisted AI and cannot be solved by exclusively focusing on AI. The best way to deal with them is to focus on their roots. Trimming off the top branches will not really address the crux of these problems.'⁵⁹ This also applies to online price discrimination and the technologies involved. This thesis shows that there are many avenues that could be explored to avoid or mitigate the risks of these problems. Here, an integrated approach is needed, which is also why I propose a particular focus on enforcement (R4), transparency and awareness (R2) to bring to light more knowledge about the practice and to achieve the system-level change that is needed to address the practice in a way that serves consumer

⁵⁷ Lessig 2006.

⁵⁸ Odlyzko 2003, p. 362.

⁵⁹ Solove 2024, p. 16.

welfare but does not stifle companies and innovation. If we look at the time it took for legal regulation to address other personalization tactics and note that the effectiveness of the provisions set in place by recent legal initiatives (e.g., the DSA, the DMA and the AI Act) remains to be seen, it is imperative to explore parallel avenues to address the current lack of transparency, control and unfair outcomes associated with online price discrimination.

Governments are likely to play an increasing role in striking this balance between consumer and company interests. As technology is rapidly evolving, classic legal regulation needs to be closely linked to the industry, to understand what is happening in practice, road-test assumptions, and to assess the effectiveness of regulatory interventions. Due to its ambiguous and complex nature, online price discrimination will continue to linger and – driven by economic incentives and fear of consumer backlash – grow to be more covert and complex.

Online price discrimination is not inherently wrong or harmful to consumers, under the condition that it is implemented transparently, fairly, responsibly and with proper oversight. It is imperative to start open discussions on how to organize the playing field in such a way that we can avoid or minimize the risks associated with online price discrimination surrounding the practice, balancing economic incentives and innovation against consumer protection. This thesis can serve as a basis for this open discussion and signifies the importance of empirical-legal research to understand the implications of digital marketing technologies for (legal) regulation.