

AI-enabled price discrimination

Citation for published version (APA):

Li, Q. (2024). *AI-enabled price discrimination: A competition law and economics perspective*. [Doctoral Thesis, Maastricht University]. ProefschriftMaken. <https://doi.org/10.26481/dis.20240326q>

Document status and date:

Published: 01/01/2024

DOI:

[10.26481/dis.20240326q](https://doi.org/10.26481/dis.20240326q)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
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Impact Statement

1. Scientific and Societal Relevance

In the digital era, business models based on the collection and processing of Big Data have been thriving, benefiting from the exponential growth of computing power and the global proliferation of Internet access. The techniques using Big Data and algorithms, for example, AI-enabled price discrimination (AIPD), as discussed in this thesis, allow businesses to offer customers different prices for the same goods at precisely the same time. In general, employing Big Data and algorithms is useful for businesses to improve the efficiency of production processes, forecast market trends and improve decision-making, which may lead to positive gains for businesses and consumers.

When businesses use strategies like AIPD in order to maximize their profits, this is likely to enhance consumer segmentation through targeted advertising and personalised recommendations. The asymmetry of information between online retailers and consumers during data transactions places consumers in a more adverse position. What makes it worse is that once Big Data is concentrated in the hands of a few large market players, this may provide them with a substantial competitive advantage against new entrants allowing those large market players to exclude competition.

Therefore, although the collection and control of substantial amounts of data is not illegal, the misuse of Big Data to gain or maintain market power may amount to a violation of competition law due to the potential harm to competition and consumer welfare. As such, those strategies, including AIPD, are likely to trigger competition concerns. This raises the question of how to respond to calls for competition law intervention regarding potential AIPD.

As argued in this thesis, whether the AI gains will outweigh the potential costs for society depends on whether and how competition authorities (and/or data protection authorities and/or consumer authorities) are able to react to potential abusive conduct, such as AIPD, in the digital economy. In particular, the thesis provides guidance to competition authorities as to whether, and under which circumstances, AIPD should be considered to be an infringement of competition law and how to address it based on a comparative law and economics analysis of the EU and China.

AIPD is not always undesirable from an economic perspective: whether it amounts to an abuse of dominance in competition law requires competition authorities to make a tradeoff between different considerations such as efficiency and justice. The framework designed in the thesis will assist competition authorities in making such a tradeoff. Moreover, this thesis also establishes a theoretical framework measuring optimal deterrence as well as retributive justice and corrective justice so as to evaluate the legal regimes' ability to tackle anti-competitive AIPD in digital markets.

Given that competition law alone is inadequate to deal with all AIPD-related issues, this thesis further studies the interaction of competition law with other rules that (may) apply to AIPD, more specifically, in the domains of data protection, consumer protection and the protection of fair competition. In other words, rules beyond competition law can contribute to tackling concerns caused by AIPD in different phases, that is, (1) collection and processing of consumer data, (2) prediction of consumer's willingness to pay, and (3) application of discriminatory pricing in digital markets. As such, this approach to assess and remedy welfare-reducing AIPD based on a comparative law and economics analysis of the EU and China also offers insights for competent authorities (i.e. data protection authorities and/or consumer authorities) to address concerns caused by AIPD and other potential abusive conduct in digital markets.

In the meantime, this research on AIPD can also contribute to filling the gap in the existing literature. This thesis delves into the economic rationale and technical mechanism of AIPD in digital markets, compares the legal consequences of (AI-enabled) price discrimination under the EU and Chinese competition law (and beyond) in theory and in practice, evaluates whether current legal regimes can effectively tackle concerns caused by anti-competitive and welfare-reducing AIPD, and provides policy suggestions to the two jurisdictions for considering (AI-enabled) price discrimination as an infringement of competition law (and beyond). As such, this thesis not only contributes to the legal and economic literature on the academic debate of AIPD but also proposes a socially desirable and cost-effective approach to tackle concerns caused by AIPD.

2. Target Groups

The target groups of this research are academics, practitioners, policymakers and potential consumers. This PhD thesis offers theoretical guidance for the competent authorities (such as competition agencies, courts and regulators), legal practitioners, and consumers to better understand the economic rationale and technical mechanism of AIPD, and provides policy suggestions to address the concerns caused by anticompetitive and welfare-reducing AIPD in digital markets based on a comparative law and economics analysis of the EU and China.

In particular, this research provides recommendations to competition authorities in the regulation of AIPD and other abusive conduct when making a trade-off between different considerations such as efficiency and justice via a cost-benefit analysis. Moreover, this thesis provides guidance for legal practitioners to advise undertakings on digital governance and compliance when engaging in economic activities so as to prevent potential sanctions in digital markets. In addition, the research may also contribute to drawing the attention of policymakers to incentivise consumers to complain about infringements of anticompetitive AIPD by lowering the enforcement costs and information asymmetry so as to better protect consumers' interests in digital markets.