Returns to Web Tracking Data*

Luis Aguiar¹, Tomaso Duso^{2,3}, Jonas Hannane^{2,3}, Christian Peukert⁴, and Hannes Ullrich^{2,5}

¹University of Zurich ²DIW Berlin ³Technische Universität Berlin ⁴HEC Lausanne ⁵University of Copenhagen

June 29, 2023

Abstract

The tracking of online user behavior has been essential for the construction of consumer profiles to help platforms monetize their services by selling targeted advertisements. We analyze web browsing data to show how prediction quality of consumer profiles varies across platforms depending on the size and scope of user data available to them. We find decreasing returns to the number of users observed and the number of websites tracked. Combining web browsing data with demographic information, two heterogeneous sources of user information which are available to some online platforms, provides a sizable increase in prediction quality. For Google, we find more slowly decreasing returns compared to other trackers with an increase in both the number of users and websites tracked. Finally, we document that proposed data combination policies may level the playing field with respect to the returns to data.

Keywords: Competition Policy, Antitrust, Internet Regulation, Cookies, Web Tracking

^{*}Aguiar: luis.aguiar@business.uzh.ch, Duso: tduso@diw.de, Hannane: jhannane@diw.de, Peukert: christian.peukert@unil.ch, Ullrich: ullrich@diw.de. We thank Ilia Azizi for excellent research assistance. We are grateful to Amelia Fletcher, Paul Heidhues and conference and seminar participants at DIW Berlin and the Digital Economy Workshops in Munich and Norwich for helpful suggestions. Christian Peukert acknowledges the support from the Swiss National Science Foundation for the project 100013_197807.