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Rory Van Loo

Boston University School of Law

Nikita Aggarwal

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AMAZON'S PRICING PARADOX

Rory Van Loo[†] & Nikita Aggarwal[‡]

Antitrust scholars have widely debated the paradox of Amazon seemingly wielding monopoly power while charging low prices to consumers. A single company's behavior thereby helped spark a vibrant intellectual conversation as scholars debated why Amazon's prices were so low, whether enforcers should intervene, and how the field of antitrust should be reformed. One of the main sources of agreement in these and other scholarly conversations has long been that Amazon charges low prices. This Article challenges that assumption by demonstrating that consumers may pay higher prices to shop on Amazon than is commonly understood due to strategies that do not necessarily depend on monopoly power. More importantly, unraveling the disconnect between perception and reality yields broader insights. One of the reasons why perceptions of Amazon's pricing have remained disconnected from reality is that conversations about regulating Amazon have paid inadequate attention to behavioral economics. Behavioral economics reveals how the company leverages its sophisticated algorithms and large datasets to build a marketplace of consumer misperception by, for instance, making it difficult for consumers to find low-priced items. Such practices undermine the goals of competition, in the economic sense of the word. But these practices have traditionally been the focus of consumer law rather than antitrust. Indeed, the longstanding inattention to these consumer law-related behavioral pricing practices raises the question of whether over many years scholars were incorrectly describing Amazon's prices as low. Amazon may have been offering many products at low, competitive prices. But by exploiting consumers' behavioral biases, Amazon could have made it so that a substantial number of consumers never found those low prices. Thus, a behavioral consumer lens is necessary to see that what was originally framed as an antitrust paradox is better viewed as a more general pricing paradox. To see the full set of concrete legal solutions for promoting competition in Amazon's marketplace and beyond, it will be important to move consumer law out of antitrust's shadows. Consumer law policy remedies include mandating information disclosures by Amazon to empower artificially intelligent digital tools that could help lower consumers' search costs and lawsuits based in unfair or deceptive acts or practices. Consumer law and antitrust law operating at full force offer the best chance for making sure that digital retail markets remain competitive and serve consumers.

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[†] Professor of Law, Boston University; Affiliated Fellow, Yale Law School Information Society Project.

[‡] Lecturer and Postdoctoral Research Fellow, UCLA School of Law. For valuable feedback and conversations, we are grateful to Oren Bar-Gill, Stacey Dogan, Talia Gillis, Bondy Kaye, Bob Lawless, Daniel Markovits, Manisha Padi, Matthias Qian, Christopher Robertson, David Walker, and Kathy Zeiler. Brianne Allan, Kyle Angelotti, Jackson Barnett, Jennifer Bentley, Allyson Brennan, Celene Chen, Tess Cushing, Leah Dowd, Heather Flokos, Ian Horton, Ryan Kramer, Jack Langa, Kate McLeod, Jane Murphy, Emily Rothkin, Brittany Swift, and Lauren Vandemortel contributed excellent research.

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INTRODUCTION

Amazon has come under fire for its treatment of workers¹ and small businesses.² On the consumer side, however, Amazon is one of the most beloved brands in the United States.³ Fueling that positive image is not only the great convenience that Amazon offers consumers, but also the enduring assumption, in both the academic literature and media, that Amazon offers, and consumers pay, low prices.⁴ In light of those perceptions, the idea that authorities

¹ David Streitfeld, *Amazon's Clashes with Labor: Days of Conflict and Control*, N.Y. TIMES (June 15, 2021), <https://www.nytimes.com/2021/04/05/technology/amazon-control-bathroom-breaks.html> [<https://perma.cc/CE4C-AEM5>] (noting Amazon's poor treatment of drivers and workers in fulfillment centers); see Keith Cunningham-Parmeter, *From Amazon to Uber: Defining Employment in the Modern Economy*, 96 B.U. L. REV. 1673, 1675 (2016) (noting that Amazon uses contractors “to shield [itself] from laws designed to protect workers”).

² Lina M. Khan, Note, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710, 781 (2017); Karen Kim, Comment, *Amazon-Induced Price Discrimination Under the Robinson-Patman Act*, 121 COLUM. L. REV. F. 160, 162-63 (2021”).

³ Casey Newton, *The Verge Tech Survey 2020*, THE VERGE (Mar. 2, 2020, 8:00 AM), <https://www.theverge.com/2020/3/2/21144680/verge-tech-survey-2020-trust-privacy-security-facebook-amazon-google-apple> [<https://perma.cc/23QL-9R6P>] (noting that Amazon had a 91% favorability rating).

⁴ To be clear, and as we explain in greater depth *infra* in Part I.C, we are not challenging the argument made by Khan and other antitrust scholars that Amazon's low prices were the result of anticompetitive predatory pricing, and our thesis is consistent with either side of this debate. Our point for now is simply that there has been an enduring perception that Amazon offers low prices. See, e.g., Khan, *supra* note 2, at 768 (suggesting that Amazon's low prices in digital books were designed to harm competitors, which could in the long run harm consumers); Elettra Bietti, *A Genealogy of Digital Platform Regulation*, 7 GEO. L. TECH. REV. 1, 52 (2023) (“Amazon's prices are low . . .”); Ashlyn Myers, Note, *Amazon Doesn't Have an Antitrust Problem: An Antitrust Analysis of Amazon's Business Practices*, 41 HOUS. J. INT'L L. 387, 405 (2019) (describing Amazon's “remarkably low” prices); Shaoul Sussman, *Prime Predator: Amazon and the Rationale of Below Average Variable Cost Pricing Strategies Among Negative-Cash Flow Firms*, 7 J. ANTITRUST ENF'T 203, 219 (2019) (concluding that Amazon has long sold at below-average variable cost); Angelos Vlazakis & Angeliki Varela, *Amazon's Antitrust Fair Play, a Transatlantic Evaluation*, 41 N. ILL. U. L. REV. 64, 79 (2020) (noting “the fact that the company has built a reputation based on the low prices of the products featured in its Marketplace, a feature not traditionally associated with a monopolist's behavior”); Seth G. Benzell & Felix B. Chang, *Evaluating Antitrust Remedies for Platform Monopolies: The Case of Facebook*, 76 VAND. L. REV. 773, 826 (2023) (“Amazon's low prices cannot be explained by profit maximization alone.”); Paniz Arab, *Retail Mergers, Markets, and the Rise of Amazon*, 13 UC IRVINE L. REV. 751, 753 (2023) (“Consumers now have the option to buy most products from Amazon with quick shipping and low prices.”); Greg Ip, *The Antitrust Case Against Facebook, Google and Amazon*, WALL ST. J.

should do something about Amazon's pricing practices to protect consumers seems absurd.⁵

This Article challenges those deeply rooted perceptions and shows that there is reason to believe that Amazon charges anticompetitively high prices.⁶ One explanation for the longstanding perception that Amazon charges competitive prices is that the topic of price has overwhelmingly been analyzed through the lens of antitrust law.⁷ This line of inquiry has focused on whether Amazon abuses its monopoly power, including by charging low predatory prices aimed at eliminating competitors.⁸ The focus on abuse of monopoly power has overlooked the various ways in which Amazon charges consumers higher prices by exploiting and strategically encouraging consumer misperception—conduct that falls within the purview of consumer law.⁹

In a series of highly influential behavioral law and economics articles, scholars have argued that firms often exploit consumers' psychological limitations to manipulate consumers into paying higher prices.¹⁰ In particular, they have shown that sellers strategically

(Jan. 17, 2018, 11:52 AM), <https://www.wsj.com/articles/the-antitrust-case-against-facebook-google-amazon-and-apple-1516121561> [<https://perma.cc/HW2A-KCQT>] (observing that Amazon and other large tech companies are “driving down prices”).

⁵ This observation broadens that made by Khan about Amazon's antitrust paradox, to encompass other areas of law, such as consumer protection, that may also intervene to address economically undesirable pricing practices. See Khan, *supra* note 2, at 716 (sketching an antitrust paradox). Indeed, the most-cited article focused on Amazon and consumer protection highlights how the company promotes consumer protection. Jane K. Winn, *The Secession of the Successful: The Rise of Amazon as Private Global Consumer Protection Regulator*, 58 ARIZ. L. REV. 193, 201 (2016) (arguing that Amazon serves as a regulator when it sues parties offering fake review services to merchants on Amazon Marketplace). Consumer law scholarship focused on Amazon has nonetheless raised several important issues related to consumer law beyond price, most notably privacy and product liability. Edward J. Janger & Aaron D. Twerski, *The Heavy Hand of Amazon: A Seller Not a Neutral Platform*, 14 BROOK. J. CORP. FIN. & COM. L. 259, 272–73 (2020) (arguing that Amazon should be held more liable for defective products and observing that part of the problem is the push for low prices); Lauren Bass, *The Concealed Cost of Convenience: Protecting Personal Data Privacy in the Age of Alexa*, 30 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 261, 278–79 (2019); (describing how “Amazon collects and stores copious amounts of data about its customers,” and users often disclose personal, sensitive, and even confidential information in Alexa's presence). Scholars have also developed helpful treatments of Amazon's other practices in passing. See, e.g., Aaron Perzanowski & Chris Jay Hoofnagle, *What We Buy When We Buy Now*, 165 U. PA. L. REV. 315, 339 (2017) (observing that consumers may not understand that they do not fully own music and videos purchased on Apple, Amazon, and other platforms).

⁶ See 15 U.S.C. § 57(b)(1)(c) (requiring that the Federal Trade Commission must satisfy a “reason to believe” standard to request information relating to unfair and deceptive acts).

⁷ For some of the many instances of the antitrust literature referring to Amazon's low prices, see *supra* note 4. This paper will use antitrust law to refer to what is sometimes more broadly described as competition law. On some of the limits of seeing antitrust law as synonymous with competition law, see *infra* Section II.A.

⁸ See sources cited *supra* notes 2, 2 & 4.

⁹ See *infra* Section II.B.

¹⁰ See, e.g., Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCI. 1124, 1124 (1974) (establishing that consumers face predictable psychological limitations which impede rational decision-making). Behavioral economists later extended Kahneman and Tversky's work in a series of highly influential papers. See, e.g., Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121 Q.J. ECON. 505, 506–07 (2006) (finding that sellers offer low-price printers, realizing that people will ignore the high costs of ink cartridges—where manufacturers make most of their profits). These insights were later applied by legal scholars. See, e.g., Christine Jolls, Cass R. Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1473–75 (1998) (outlining

add complexity to purchasing decisions. For instance, retailers can make customers subconsciously assume that a price is a bargain if it is framed as a discount—such as by advertising a \$125 bread maker as discounted from \$200, even if the \$125 price is not actually lower than other comparable bread makers.¹¹ Similar behaviorally manipulative pricing tactics have been observed for a wide range of goods and services — for everything from cell phone plans to credit cards, mortgages, and online retail goods.¹² However, the behavioral economics literature has long ignored the behavioral pricing practices of product search engines—like Amazon and Google Shopping—with the main manipulator instead seen as the third-party seller.¹³

Some law and technology scholarship has theorized that online product search tools could leverage personal data, “artificial intelligence” computational techniques, like machine learning,¹⁴ and advanced marketing techniques to manipulate consumers into paying higher prices.¹⁵ Indeed, as early as 2015, one of us posited that Amazon leveraged machine learning and behavioral data to anticompetitively raise prices.¹⁶ Yet, beginning in 2017, a set of

the underappreciated role of behavioral economics in the law); Russell Korobkin, *Bounded Rationality, Standard Form Contracts, and Unconscionability*, 70 U. CHI. L. REV. 1203, 1290–91 (2003) (showing how most buyers do not consider all of the various secondary terms—such as late fees and arbitration provisions—in determining the full price of the agreement). Although the foundational descriptive and analytic contributions of behavioral law and economics are now firmly embedded, the resulting prescriptions are debated. See Ryan Bubb & Richard H. Pildes, *How Behavioral Economics Trims Its Sails and Why*, 127 HARV. L. REV. 1593, 1677–78 (2014).

¹¹ See WILLIAM POUNDSTONE, PRICELESS: THE MYTH OF FAIR VALUE (AND HOW TO TAKE ADVANTAGE OF IT) 156 (1st ed. 2010).

¹² See OREN BAR-GILL, SEDUCTION BY CONTRACT: LAW, ECONOMICS, AND PSYCHOLOGY IN CONSUMER MARKETS 166 (2012) (discussing how complex contracts hinder “effect comparison-shopping”); Rory Van Loo, *Helping Buyers Beware: The Need for Supervision of Big Retail*, 163 U. PA. L. REV. 1311, 1136–47 (2015) (applying behavioral economics insights broadly to both online and offline retail sellers); see also Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, 112 HARV. L. REV. 1420, 1503–24 (1999) (discussing manipulation in contexts such as cigarette advertising).

¹³ See, e.g., Glenn Ellison & Sara Fisher Ellison, *Search, Obfuscation, and Price Elasticities on the Internet*, 77 ECONOMETRICA 427, 449 (2009) (using purchase data to show that online third-party sellers of computer parts can raise prices through obfuscation strategies, such as hiding the shipping costs); *infra* Part I.B.1.

¹⁴ See generally IAN GOODFELLOW, YOSHUA BENGIO, AARON COURVILLE, DEEP LEARNING (2015); STUART RUSSELL & PETER NORVIG, AI: A MODERN APPROACH (FOURTH EDITION, 2020).

¹⁵ See Rory Van Loo, *Rise of the Digital Regulator*, 66 DUKE L.J. 1267, 1277 (2017) (“With artificially intelligent computers that engage in deep learning similar to that of the human mind, retailers nudge customers to higher-margin products.”); Rory Van Loo, *Digital Market Perfection*, 117 MICH. L. REV. 815, 837 (2019) (summarizing the challenges and potential of an era in which both digital intermediaries and consumers deploy artificial intelligence tools to automate commerce). These articles built on the foundations laid in earlier influential, insightful, and prescient scholarship that were not focused on automated algorithms raising consumer prices by manipulating search results, such as Tal Z. Zarsky, “*Mine Your Own Business!*”: *Making the Case for the Implications of the Data Mining of Personal Information in the Forum of Public Opinion*, 5 YALE J.L. & TECH. 1, 33–41 (2003) (showing how data-based technologies can enable price discrimination); Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149, 1206–07 (2008) (calling for regulation of “[g]eneral-purpose search engines,” such as Google, because of their “manipulation” of search results); Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. 995, 1003–07 (2014) (arguing that computer-mediated technologies, such as the design of the web page, enabling firms to manipulate consumers).

¹⁶ See generally Van Loo, *Helping Buyers Beware*, *supra* note 12, at 1345–1346 (using the example of a single search for a “canteen” to illustrate Amazon’s obfuscation potential and concluding that these tactics give it the

antitrust-focused conversations by legal scholars and economists emerged and continued to describe Amazon as charging low prices until at least 2023.¹⁷

This Article begins to reconcile those parallel price universes.¹⁸ It synthesizes the theoretical foundations laid by behavioral economists and technology law scholars, and adds a review of the existing empirical research about Amazon's pricing that has yet to be integrated into the legal literature.¹⁹ It also contributes new empirical findings, based on a review of 4,800 items sold on Amazon, that go further than prior studies toward suggesting that Amazon engages in pricing practices that are harmful to consumers.²⁰ The weight of this evidence suggests that Amazon deploys countless strategies well known to influence shoppers to pay more. Moreover, since many of the core practices we study are the same that were observed at least as far back as 2015, it raises the possibility that the marketplace's overall low-price perception has long been inaccurate.²¹

As one of many examples, we present the first evidence that Amazon's search results systematically bury the lowest priced items even if they have equal or better ratings.²² We find, for instance, that the best deal on the first page—factoring in ratings and unit price (excluding shipping costs)—was on average located in the seventeenth slot, where few consumers look.²³ Consumers who chose the first relevant item returned in the search results

potential to raise prices anticompetitively) (“[F]inding the best deal out of thousands of results would be even more time-consuming and presumably few consumers would actually go through hundreds of individual product pages to find what the Amazon algorithm could do in a microsecond if the company wished: locate the cheapest item.”). These observations about Amazon were part of a broader argument about online retail platforms and had very limited empirical evidence related to Amazon. *Id.*; see also Julie E. Cohen, *Law for the Platform Economy*, 51 U.C. Davis L. Rev. 133, 146 (2017) (referencing Amazon's preferencing of its own products in passing as part of a broader analysis of platforms).

¹⁷ Note that this Article was posted on SSRN in May of 2023, four months before the Federal Trade Commission filed a lawsuit alleging that Amazon had used its monopoly power to degrade search results. See Amazon's Pricing Paradox, Rory Van Loo & Nikita Aggarwal, *Amazon's Pricing Paradox* (May 2, 2023), available at <https://ssrn.com/abstract=4436546>; Federal Trade Commission, *FTC Sues Amazon for Illegally Maintaining Monopoly Power*, <https://www.ftc.gov/news-events/news/press-releases/2023/09/ftc-sues-amazon-illegally-maintaining-monopoly-power>. Examples of legal scholars continuing to refer to low Amazon prices are provided *supra* note 4, and for economists making related but more nuanced points, see, e.g., Leshui He, Imke Reimers & Benjamin Shiller, *Does Amazon Exercise Its Market Power? Evidence from Toys "R" Us*, 65 J.L. & ECON. 665, 680 (2022) (“Amazon continues to charge relatively low prices...”). One reason for this perspective may be an assumption that Amazon has incentives to provide transparent and low prices. See Michael Dinerstein et al., *Consumer Price Search and Platform Design in Internet Commerce*, 108 AM. ECON. REV. 1820, 1821 (2018).

¹⁸ Since this Article is focused on Amazon's prices more recently than the time periods analyzed by Khan, it is quite possible that these antitrust scholars, at least those writing about Amazon's prices a few years ago, were right. See *infra* Section I.C. However, a broader theoretical reconciliation is also explored. See *infra* Section II.A.

¹⁹ For instance, a 2018 study of online book pricing has yet to be integrated into the legal literature, although the study's narrow item focus on books may mean that even if it had received more attention it may not have changed perceptions. See Jifeng Luo, Han Zhang & Haizheng Li, *Pricing Strategies in Online Book Industry: A Comparative Study*, 16 INFO. SYS. & BUS. MGMT. 791, 805 (2018).

²⁰ See *infra* Section I.B.

²¹ Van Loo, *Helping Buyers Beware*, *supra* note 12, at 1345; *Infra* Part I.

²² *Infra* Part I.B.1. (explaining how prior studies did not look at the burying of best deals). the differences between our study and prior studies).

²³ See *infra* Section I.B.

would have paid on average 29% more than if they had located the best deal.²⁴ One of the reasons these findings are important is that more than half of Amazon's regular customers purchase the top result provided.²⁵ And filtering the search results by "Price: Low to High" does not solve these problems on most searches, particularly since this feature still ignores unit price and shipping costs.²⁶

It is important not to get lost in the weeds of any one example. Focusing excessively on any individual example risks making the problem seem insignificant. By analogy, a single purchase of a sugary beverage may be of questionable relevance to an individual's development of diabetes. But in the aggregate, these kinds of individual behaviors—combined with many other related behaviors, such as inadequate exercise—can prove detrimental, not only for individuals but also for society.²⁷ Similarly, instead of focusing on individual tactics or items sold on Amazon, it is important to keep in mind the bigger picture: the large array of practices that Amazon uses to increase prices across a vast number of items. The burying of the best deals in search results is only one of many different aspects of the decision context that make shopping on Amazon far more complex than it may appear.²⁸

One implication of this analysis is that by relying excessively on an antitrust lens, legal scholarship may have adopted and contributed to a skewed perception of Amazon's prices. Even if Amazon could use monopoly power to force higher prices on consumers, it does not need to.²⁹ Instead of risking the wrath of antitrust enforcers, it can instead offer many products at competitive prices. But by controlling the choice environment, Amazon can make it so that a substantial number of consumers never find the competitive price even if it is just "one click away."³⁰ Amazon's behavioral pricing practices thus have the potential to greatly harm both consumers and competition.³¹ By focusing on abuse of monopoly power and failing to engage with the theoretical and empirical study of behavioral pricing, scholars have not made the full case for why the law should intervene in Amazon's pricing practices.³²

²⁴ *Id.*

²⁵ GRASSO, FEEDVISOR, THE 2019 AMAZON CONSUMER BEHAVIOR REPORT (2019), <https://feedvisor.com/resources/amazon-trends/the-2019-amazon-consumer-behavior-report/> [<https://perma.cc/AA8N-SASX>] ("For those who buy products on Amazon daily or almost everyday, more than half (54%) always buy the first product listed on Amazon's search engine results page (SERP).").

²⁶ See *infra* Section I.B. Likewise, the filter for product rating is too blunt to enable consumers to find the lowest price products with the highest ratings, e.g., with 4.5 stars or more.

²⁷ See Alfred E. Kahn, *The Tyranny of Small Decisions: Market Failures, Imperfections, and the Limits of Economics*, 19 KYKLOS INT'L REV. SOC. SCI. 23, 23–29, 44–45 (1966).

²⁸ See *infra* Section I.C.

²⁹ Note that monopoly power may enhance the kinds of practices we outline herein, even if monopoly power in the traditional antitrust sense of the concept is not necessary for them. See, e.g., Eric Posner & Richard M. Hynes, *The Law and Economics of Consumer Finance*, 4 AM. L. & ECON. REV. 168, 174 (2001); Gerhard Wagner & Horst Eidenmüller, *Down by Algorithms? Siphoning Rents, Exploiting Biases, and Shaping Preferences: Regulating the Dark Side of Personalized Transactions*, 86 U. CHI. L. REV. 581, 583 (2019); *infra* Part II.A.

³⁰ Cf. *The Power of Google: Serving Consumers or Threatening Competition?: Hearing Before the S. Subcomm. on Antitrust, Competition Pol'y & Consumer Rts. of the S. Comm. on the Judiciary*, 112th Cong. 232 (2011) (testimony of Eric Schmidt, Executive Chairman, Google Inc.) (describing how Google's "competition is only one click away").

³¹ See, e.g., BAR-GILL, *supra* note 12, at 166–68 (explaining the relationship between consumer misperception and competition).

³² Scholars have, however, made related broader arguments that encompass Amazon. See, e.g., Van Loo, *Helping Buyers Beware*, *supra* note 12, at 1326–31 (reviewing the literature and concluding that mass retailers, such as Walmart and Amazon, can leverage technologies to raise consumer prices).

To advance competition in a commercial landscape increasingly driven by search results, the broader legal framework will need to integrate behavioral economics analyses that have mostly resided within consumer law. Indeed, it may not be possible for antitrust authorities to recognize anticompetitive pricing, at least when prices are delivered through search results, without applying a behavioral economics lens.³³ Moreover, behavioral law and economics and consumer law provide a set of tools for regulating Amazon's anticompetitive pricing practices independent from antitrust.³⁴ For instance, mandatory disclosures could require Amazon to provide a way for consumers to sort results by unit price, thereby helping to clarify Amazon's prices for consumers. Or the law could mandate that Amazon share information with third-party digital tools that help shoppers find the best deal. More extensive legal interventions, such as prosecution by state attorneys general and the Federal Trade Commission ("FTC") based on existing consumer laws, are also possible.³⁵

Moreover, those legal interventions would preserve the very convenience that attracts many consumers to Amazon, while also enabling them to purchase at lower prices. If anything, these interventions would make shopping on Amazon more convenient, particularly for bargain-conscious consumers, by making it easier to find the best deals. Furthermore, these interventions would not require Amazon to change the prices of any item; they would simply require the company to make its pricing clearer and simpler alongside that great convenience. That transparency would put more market pressure on Amazon to offer competitive prices.

This Article adopts the terminology of the behavioral law and economics literature in describing Amazon's conduct as "manipulation."³⁶ That literature identifies such pricing practices as inefficient.³⁷ But manipulating consumers into paying more online, including with the use of artificial intelligence techniques and deceptive user interface design, also raises broader ethical and distributional issues that we and others have written about elsewhere.³⁸

³³ See *infra* Section II.A. This nuanced observation builds on a number of related points about the problems brought about by the disconnect between consumer protection and antitrust. See generally Joshua D. Wright, *The Antitrust / Consumer Protection Paradox: Two Policies at War with Each Other*, 121 YALE L.J. 2216 (2012) (warning about the different approaches to consumer preferences); Harry First, *Excessive Drug Pricing as an Antitrust Violation*, 82 ANTITRUST L.J. 701, 718–20 (2019) (discussing the way the FTC bridges the divide between antitrust and consumer protection).

³⁴ Since consumer laws are not a substitute for antitrust (nor labor regulation), calling attention to the need for stronger consumer laws does not detract from efforts to improve antitrust (or labor regulation), and related market failures. Indeed, the opposite may be true. See *infra* Section II.A.

³⁵ *Infra* Part II.B.1.; Van Loo, *Helping Buyers Beware*, *supra* note 12, at 1382–92.

³⁶ In addition to the sources cited *supra* note 12, see more recently Oren Bar-Gill & Omri Ben-Shahar, *Rethinking Nudge: An Information-Costs Theory of Default Rules*, 88 U. CHI. L. REV. 531, 543 (2021), stating: "[O]ur theory identifies those practices that reduce efficiency and harm consumers and should thus be prohibited as manipulation.").

³⁷ See BAR-GILL, *supra* note 12, at 166–68 (describing behavioral pricing as inefficient and a market failure); Cass R. Sunstein, *Fifty Shades of Manipulation*, 1 J. MKTMKTG. BEHAV. 213, 215–17 (2015) (exploring manipulation beyond lying and deception).

³⁸ See, e.g., Andreas Tsamados, Nikita Aggarwal, Josh Cows, Jessica Morley, Huw Roberts, Mariarosaria Taddeo & Luciano Floridi, et al., *The Ethics of Algorithms: Key Problems and Solutions*, 37 AI & SOC'Y 215, 216, 224–25 (2022) (arguing that algorithmic systems and online platforms raise significant moral concerns); Rory Van Loo, *Broadening Consumer Law: Competition, Protection, and Distribution*, 95 NOTRE DAME L. REV. 211, 215, 241

Space constraints limit our ability to give these topics the full treatment they deserve. The main goal of this Article is to contribute to a more comprehensive understanding of how Amazon's business model, seen in its pricing practices, depends in great part on market failures beyond those that have traditionally been the focus of antitrust. In doing so, it seeks to encourage a more rigorous legal and scholarly inquiry into the anticompetitive effects of Amazon's behavioral pricing practices. We can appreciate Amazon's convenience while still concluding that consumers and society should expect more out of the company now that it has become a central node in the economy.

Part I outlines the theoretical, institutional, and empirical foundations for understanding Amazon's pricing. It offers a more comprehensive consumer law-based account of Amazon's pricing tactics than previously existed, drawing on existing and new empirical analyses from product pages and search results. Part II explores the policy implications of Amazon's tactics. Administrative agency oversight is important, but less intrusive solutions can be found in regulations that empower third-party digital helpers. Not only would such regulations require minimal government involvement, they would also give consumers the digital tools necessary to match Amazon's algorithmic sophistication.

Before turning to the main discussion, an observation is in order about this Article's focus on Amazon. Writings about a single company—including about Amazon³⁹—have at different times shifted intellectual conversations about antitrust, while also contributing to policymaking and major lawsuits.⁴⁰ But until now a sustained examination of Amazon's pricing practices through the lens of consumer law was missing from the literature, leaving the pricing narrative to be dominated by the lens of antitrust law and its focus on abuse of monopoly power.

Additionally, Amazon merits sustained attention due to its market share and position as one of the most valuable companies in the world.⁴¹ Amazon's commercial position is also historically unparalleled, at least in the sense that it dominates in a digital era in which size

(2019) (observing that “companies’ ability to engage in behavioral overcharge has increased significantly due to sophisticated pricing algorithms and quantitative insights into consumers” and concluding that such practices can contribute significantly to economic inequality). For other explorations of a broader set of Amazon harms and normative foundations for caring about them, see KATHRYN JUDGE, *DIRECT: THE RISE OF THE MIDDLEMAN ECONOMY AND THE POWER OF GOING TO THE SOURCE* 81-83 (2022) (observing potential harms such as the loss of accountability, connection, and community). Although this Article focuses mostly on price increases for which there is a case that they are inefficient, when algorithms raise prices in ways that economic theory suggests are efficient, it is still necessary to weigh the “steep distributional” costs. Oren Bar-Gill, *Algorithmic Price Discrimination When Demand is a Function of Both Preferences and (Mis)perceptions*, 86 U. CHI. L. REV. 217, 236 (2019).

³⁹ David Streitfeld, *Amazon's Antitrust Antagonist Has a Breakthrough Idea*, N.Y. TIMES (Sept. 7, 2018), <https://www.nytimes.com/2018/09/07/technology/monopoly-antitrust-lina-khan-amazon.html> [<https://perma.cc/8F8K-HDPU>] (explaining how Lina Khan's *Yale Law Journal* note “reframed decades of monopoly law” and ultimately influenced ongoing antitrust lawsuits and investigations into Alphabet, Amazon, and Facebook).

⁴⁰ See, e.g., STEVE WEINBERG, *TAKING ON THE TRUST: THE EPIC BATTLE OF IDA TARBELL AND JOHN D. ROCKEFELLER* 246–51 (2008) (recounting how Ida Tarbell's three-volume treatise and other writings about Standard Oil led to the breakup of the company and helped make the case for creating the FTC).

⁴¹ See Alina Selyukh, *What Americans Told Us About Online Shopping Says a Lot About Amazon*, NPR (June 6, 2018, 5:11 AM), <https://www.npr.org/2018/06/06/615137239/what-americans-told-us-about-online-shopping-says-a-lot-about-amazon> [<https://perma.cc/BQ4M-D2CZ>].

brings incredible network and data advantages. Amazon has a fast-growing market share of almost 50% of all online commerce, at a time when the country is becoming more dependent than ever on large tech platforms.⁴² Other leading companies, ranging from Google to Walmart to e-commerce startups, emulate Amazon.⁴³ Thus, the company offers a new context in which old principles may not apply, with a scale that alone justifies examination of its practices. As a result, understanding the full costs and policy implications of Amazon gives a window into the legal blueprint necessary for the future of online commerce.

I. A MARKETPLACE OF MISPERCEPTION

This Part provides the theoretical, institutional, and empirical foundations for understanding Amazon's pricing practices. It contributes to the literature the first sustained behavioral account of Amazon's pricing tactics and the challenges consumers face in using Amazon's search results to find the best deal.

A. Misperception Harms Consumers and Competition

An estimated 95% of customers are reportedly satisfied with the results of their Amazon searches.⁴⁴ If immediate customer satisfaction was the sole metric for whether to regulate, it would be difficult to argue that anything was wrong. However, consumer laws do not require consumer awareness of harm to dictate whether intervention is warranted.⁴⁵ If a homebuyer is paying more in interest over the life of a loan because of her race, age, or gender, the law does not require that the homebuyer was aware of the harm or was unhappy with the loan in deciding whether the lender has violated the law.⁴⁶ Similarly, if most Amazon consumers are unknowingly paying higher prices on Amazon due to manipulation, it can be harmful to both consumers and the broader economy, even if consumers are not conscious of it.

Price-related harms can occur even in a market that is competitive in the sense that the market has many sellers. To illustrate in a simplified manner, if one seller offers a higher price than another seller for a comparable product, in theory consumers will purchase from the lower-priced seller. That process will continue until the higher-priced seller either lowers

⁴² See Stephanie Chevalier, *Projected Retail E-commerce GMV Share of Amazon in the United States from 2016 to 2021*, STATISTA (Oct. 13, 2021), <https://www.statista.com/statistics/788109/amazon-retail-market-share-usa> [<https://perma.cc/RT7K-TTZA>] (providing market shares).

⁴³ See, e.g., C. Scott Hemphill, *Disruptive Incumbents: Platform Competition in an Age of Machine Learning*, 119 COLUM. L. REV. 1973, 1993 (2019) ("Google has challenged Amazon in shopping starts . . ."); Jennifer Smith, *Imitating Amazon: E-Commerce Battle Bolstered by Companies Mimicking the Market Leader*, WALL ST. J. (Dec. 17, 2019, 5:41 AM), <https://www.wsj.com/articles/imitating-amazon-e-commerce-battle-bolstered-by-companies-mimicking-the-market-leader-11576578601> [<https://perma.cc/T3KR-UA2G>] (explaining how competitors of all sizes follow Amazon's lead).

⁴⁴ GRASSO, *supra* note 25, at 14, 16 (finding that 66% of consumers "start their search for new products on Amazon" and 95% of consumers "are satisfied with the results they get").

⁴⁵ Nor is consumer awareness of harm a prerequisite under antitrust. See *United States v. Microsoft Corp.*, 253 F.3d 34, 50 (D.C. Cir. 2001) (articulating the elements of Section Two of the Sherman Act).

⁴⁶ See Equal Credit Opportunity Act, 15 U.S.C. § 1691(a).

its price, offers a more appealing product, or goes out of business.⁴⁷ But even if there are a large number of sellers, if consumers are unable to determine which sellers are offering the lowest prices or highest quality products, sellers will have less incentive to offer low prices and high quality.⁴⁸ Instead of the market pressuring sellers to offer a competitive price, when consumers cannot easily understand or compare prices, sellers can still charge higher prices without the threat of losing customers. As a result, strategies that cause consumers to misperceive price or quality can significantly undermine the societal benefits that economic models of competition seek to achieve.⁴⁹

Antitrust law has limited ability to address these questions of whether consumers adequately understand prices and products.⁵⁰ As such, competition also depends on effective consumer laws, one of the goals of which is to allow consumers to make informed and rational decisions about prices and products. In light of consumer law's importance for advancing competition, the rest of this Article uses the term "antitrust law" to refer to what is sometimes called "competition law" in the United States, and uses "consumer law" to describe what is sometimes described as "consumer protection."⁵¹

To elaborate on the consumer law side of competition, one of the central contributors to consumer misperception is complexity. A well-established principle in behavioral psychology is that the more complex the purchase—say, buying a laptop with a warranty—the more difficult it is for consumers to compare prices and products.⁵² However, it is important to note that price and product complexity is an empirical concept rather than an intuitive one. Decisions become too complex when the mind can no longer effectively process the information, even if the decision appears straightforward to the consumer. For instance, in choosing a cell phone plan, one must consider the data usage, fees for exceeding data limits, and late payment fees, along with the base price. Oren Bar-Gill and Rebecca Stone found that people pay 8% more on average because they chose a more expensive plan among options at a specific carrier—in large part due to the complexity of weighing various options for data, minutes, and base price.⁵³ Again, this research lies outside of antitrust.

With that overview of economic theory and evidence, it now becomes possible to define an important concept: overcharge. Overcharge is commonly used in the antitrust context to refer to the extra amount consumers are paying above the competitive price due to monopoly

⁴⁷ See PHILLIP AREEDA, HERBERT HOVENKAMP & ROGER D. BLAIR, *ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION* 8 (2nd ed. 2000) (summarizing market dynamics).

⁴⁸ *Id.* (outlining the neoclassical theory); see also Gabaix & Laibson, *supra* note 10, at 507–09 (developing a theoretical model for shrouded prices); Ellison & Ellison, *supra* note 22, at 449 (finding empirical evidence of prices higher than the competitive level in an online market with a large number of different sellers due to sellers' ability to make it hard for buyers to understand and compare prices).

⁴⁹ See Gabaix & Laibson, *supra* note 10, at 507–09 (2006) (discussing shrouded prices).

⁵⁰ For an overview of antitrust in one of the leading textbooks, see generally AREEDA & KAPLOW, *supra* note 47, at 614–15 (explaining scope and role of antitrust).

⁵¹ On how both consumer laws and antitrust advance competition, see Van Loo, *Broadening Consumer Law*, *supra* note 38, at 231, 254–55. On using competition to describe antitrust, see, e.g., AREEDA & KAPLOW, *supra* note 46, at 613–14.

⁵² Korobkin, *supra* note 10, at 1226–27 (describing how complex decisions cause consumers to take shortcuts when comparing prices).

⁵³ Oren Bar-Gill & Rebecca Stone, *Mobile Misperceptions*, 23 HARV. J.L. & TECH. 49, 96–97 (2009) (analyzing usage data and concluding that many could have saved money by choosing a different plan).

power or some other antitrust-related problem. By analogy, as far as consumer laws are concerned, a competitive price is the price that would be paid with a sufficient number of consumers making informed and rational decisions.⁵⁴ Of course, regarding both antitrust and consumer laws, it is never expected that markets will reach perfect competition.⁵⁵ Instead, the regulatory and scholarly question is whether the law can move markets closer to perfect competition.⁵⁶ For present purposes, overcharge refers to the difference between the average prices consumers pay and the prices they would pay if the law enabled them to make informed decisions based on current market conditions and product offerings. For example, the 8% more that consumers were found to have paid for cell phone plans due to complex pricing options would be overcharge.⁵⁷ Reducing such overcharge would not only bring lower consumer prices but would also increase efficiency.⁵⁸

B. Amazon's Manipulation of Search Results

An estimated 66% of online shoppers start their search on Amazon, and many do not look elsewhere.⁵⁹ As such, Amazon acts as the gateway to the web for many consumers,⁶⁰ and Amazon's interface provides the choice setting for a large number of consumer decisions. This Section lays out the challenges consumers face in using Amazon's search results to find the best deal.

1. Methodology

Economic scholarship on search engines leaves little doubt that the ordering of search results can strongly influence the prices consumers pay, but perhaps the leading recent study demonstrating that capacity to influence prices, in discussing platforms "such as eBay or Amazon," asserted the following: "For the most part, these platforms want to limit search frictions and provide consumers with transparent and low prices."⁶¹ In that e-commerce

⁵⁴ See Van Loo, *Helping Buyers Beware*, *supra* note 12, at 1320. These are necessary but not sufficient conditions. The firms in the market must also, for example, not engage in anticompetitive price-setting. Additionally, although competitive prices are technically set at marginal cost, economists define them as still allowing the firm's owners a healthy return on investment. See, e.g., Ellison & Ellison, *supra* note 22 (finding returns range from 3.6% to 6.3% absent obfuscation).

⁵⁵ See, e.g., JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 106 (1942) (concluding that perfect competition is impossible).

⁵⁶ Neil W. Averitt, *The Role of the FTC in American Society*, 39 OKLA. L. REV. 39, 50 (1986) (arguing that the FTC Act exists to prevent unfair competition and ensure that consumers can choose among a range of options "unconstrained by deception or coercion").

⁵⁷ Bar-Gill & Stone, *supra* note 53, at 96.

⁵⁸ See *id.* On the great influence of efficiency on policy making, see Jedediah Britton-Purdy, David Singh Grewal, Amy Kapczynski, K. Sabeel Rahman, *Building A Law-and-Political-Economy Framework: Beyond the Twentieth-Century Synthesis*, 129 YALE L.J. 1784, 1790-91 (2020).

⁵⁹ See FEEDVISOR, *supra* note 25, at 14, 16.

⁶⁰ See DIGIT. COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION 30 (2019) ("Regardless of the view on dominance over a particular defined market, it is clear that for thousands of smaller independent online sellers in particular, Amazon's marketplace is a strategically important gateway to consumers.").

⁶¹ There is an extensive literature on this point that the discussion below integrates, but for one prominent

economics literature, sellers are typically described as the ones having strong incentive to raise prices paid.⁶² There is also evidence that many consumers have assumed that the search results showcase the products that Amazon's algorithms objectively believe are the best choice for the consumer, at least beyond the advertisements.⁶³ If that is still true, one contributor to this may be that people tend to have greater faith in machines than they do in humans to produce objective and helpful advice, a phenomenon often referred to as "automation bias."⁶⁴ Thus, since companies have a well-documented ability to influence decisions through search results, and because many consumers will presumably not review search results with a skeptical eye, it is important to understand how Amazon structures its search results.

To illuminate these important practices, we draw on existing research and present the key findings from our study based on a sample of 100 unique search results, containing roughly 4,800 products sold on Amazon.com. Each Amazon search was coded to identify, among other things, the prices and deals offered at the top of the search results and to compare those results to the deals offered further down the page. Through this dataset, we explored four main avenues by which Amazon could be manipulating consumers' purchasing decisions through its search results: burying, complexifying, anchoring, and self-preferencing. Further details about our methodology are provided below in the discussion of results, as well as in the Appendix.

To elaborate on our contribution to the literature, we are unaware of any prior study examining whether Amazon systematically buries the best deals in the "organic" search results and quantifying the potential impact. The two main relevant prior studies about Amazon examined narrower and different dimensions of Amazon's marketplace. First, researchers at ProPublica analyzed Amazon's default selection for which seller fulfills a sale once the consumer clicks on "buy." They showed that, by not always giving consumers the cheapest default shipping option, Amazon may significantly increase the prices consumers

example, see Dinerstein et al., *supra* note 17, at 1820-23 ("The platform design, the process that helps potential buyers on the internet navigate toward products they may purchase, plays a critical role in . . . determining market outcomes.").

⁶² See, e.g., *id.*, at 1821 ("Sellers on these platforms may have very different incentives."); Ellison & Ellison, *supra* note 22, at 438 (studying how third-party sellers engage in price obfuscation to raise prices without asking whether the search engines themselves actively promote obfuscation). There is an extensive literature on this point that the discussion below integrates, but for one prominent example, see Dinerstein et al., *supra* note 17, at 1820-23 ("The platform design, the process that helps potential buyers on the internet navigate toward products they may purchase, plays a critical role in . . . determining market outcomes.").

⁶³ Cf. FEEDVISOR, *supra* note 25, at 16 (finding that most regular Amazon customers purchase the first item returned); LESLIE MARABLE, CONSUMER WEBWATCH, FALSE ORACLES: CONSUMER REACTION TO LEARNING THE TRUTH ABOUT HOW SEARCH ENGINES WORK: RESULTS OF AN ETHNOGRAPHIC STUDY 13 (2003) (finding that the "majority of participants . . . trusted search engines to present only the best or most accurate, unbiased results on the first page.").

⁶⁴ Linda J. Skitka, Kathleen L. Mosier & Mark Burdick, *Does Automation Bias Decision-Making?*, 51 INT'L J. HUM.-COMPUT. STUD. 991, 1002 (1999) (showing in an experiment that participants' excess faith in automation can lead to worse outcomes for the participants); Nizan Geslevich Packin, *Consumer Finance and AI: The Death of Second Opinions?*, 22 N.Y.U. J. LEGIS. & PUB. POL'Y 319, 346 (2020) (describing how "society increasingly relies on algorithms as experts and places great faith in them").

paid.⁶⁵ However, that step is not relevant to the many Amazon searches and purchases that do not involve payment of shipping costs, whether because they surpass the minimum threshold of free shipping or because the consumer is a Prime member. Also, because ProPublica's findings relating to shipping cost obfuscation examine what happens once a certain item is chosen, they do not speak to the burying of deals within the basic search results returned from the initial search query. To the extent that Amazon is still engaging in shipping cost obfuscation practices, our findings should be seen as an additional layer of price complexity beyond what prior research has shown.

The other main relevant prior study showed that Amazon preferences its own products in search results.⁶⁶ But that study didn't quantify any effect on prices from self-preferencing, and thus more directly speaks to harms to third-party sellers.⁶⁷ From a consumer protection standpoint, that is an important omission because self-preferencing may be helpful or harmful to customers. We provide some data on the price and quality comparisons between Amazon's own brands and other options, as well as studying burying effects well beyond those that promote Amazon products. In short, the empirical literature has yet to speak to the core questions that have animated behavioral law and economics scholars: Beyond shipping, to what extent does Amazon use its search results and other tactics to push people to pay more than if they had made another choice?

Three caveats are in order before turning to those results. First, showing that some Amazon behavior contributes to price misperception does not necessarily mean that the specific behavior merits any regulation. Some practices are either individually too innocuous, or too hard to address, to warrant intervention targeted at that practice. They instead might only be possible to address indirectly in ways that improve all consumer decisions, such as by ensuring that consumers have access to independent digital shopping helpers. Whether and how to regulate these practices is a separate question discussed in Part II.⁶⁸ Second, because Amazon has no duty to disclose such information, many specifics are unknown, such as why its search and pricing algorithms produce the results they do. Finally, the highly personalized nature of Amazon's search results means that any one researcher's search results may not be representative of other customers' experiences.⁶⁹

These limits may help explain why the extensive legal literature on platform regulation and behavioral economics has been slow to contribute empirical research about how search results influence prices paid by consumers. Studies in fields outside the law have produced

⁶⁵ See Julia Angwin & Surya Mattu, *Amazon Says It Puts Customers First. But Its Pricing Algorithm Doesn't*, PROPUBLICA (Sept. 20, 2016, 8:00 AM), <https://www.propublica.org/article/amazon-says-it-puts-customers-first-but-its-pricing-algorithm-doesn't> [<https://perma.cc/7W72-982D>] (analyzing 250 items and showing that once consumers have decided to purchase a specific item, the default fulfillment option chosen by Amazon would be on average 20% more expensive than the cheapest alternative once shipping costs are added)..

⁶⁶ Adrienne Jeffries & Leon Yin, *Amazon Puts Its Own "Brands" First Above Better-Rated Products*, THE MARKUP (Oct. 14, 2021, 8:00 AM), <https://themarkup.org/amazons-advantage/2021/10/14/amazon-puts-its-own-brands-first-above-better-rated-products> [<https://perma.cc/376R-XBKU>] (finding that Amazon systematically puts its own products at the top of search results, but without looking at the price impact of that practice).

⁶⁷ *Id.*

⁶⁸ See *infra* Part II.

⁶⁹ See *infra* Section I.B.5.

valuable insights into platform behavior by analyzing search result outputs,⁷⁰ but each of the possible methodologies one might adopt to study search result outputs has limitations.⁷¹ We chose our methodology to complement the existing studies of search results from other fields, which have heavily relied on tools such as software extraction of data.⁷² In the context of Amazon's pricing, illuminating many of the key dynamics that would most interest legal scholars requires a human assessment of each search result. Indeed, we use one of the empirical tools legal scholars use most widely in analyzing judicial decisions—hand-coding of institutional outputs—to examine platform search results.⁷³ This Article thus makes a modest methodological contribution to the legal literature and responds to the growing calls for methodological pluralism to study complex legal topics.⁷⁴

To be clear, there are significant limitations to what we can infer from our study, and the meaning we can attribute to Amazon's pricing practices in terms of harm to consumers and competition. As our dataset does not include data on which items consumers eventually purchase from Amazon, we cannot say how many consumers conform to these purchasing patterns. For instance, we cannot rule out the possibility that Amazon is presenting its search results based on some criteria that consumers value beyond price and ratings, and which our study did not measure.⁷⁵ To answer these questions definitively, one would need access to Amazon's internal data.

Nonetheless, our results challenge the widespread accounts that link Amazon to low prices without considering how Amazon charges higher prices by exploiting and strategically encouraging consumer misperception.⁷⁶ They also indicate an important set of further studies necessary to better understand Amazon's prices. Although no single model can perfectly capture the purchasing behavior of every consumer, our methodology was informed by

⁷⁰ See, e.g., Amit Datta, Anupam Datta, Jael Makagon, Deirdre K. Mulligan & Michael Carl Tschantz, *Discrimination in Online Advertising: A Multidisciplinary Inquiry*, 81 PROC. MACH. LEARNING RSCH. 1, 3 (2018) (exploring potential causes of racial discrimination in job advertisements shown in Google results). For more qualitative approaches to studying online platforms and search results, see, e.g., Min Jiang, *Search Concentration, Bias and Parochialism: A Comparative Study of Google, Baidu, and Jike's Search Results From China*, 64 J. COMM'N 1088, 1100–01 (2014) (using qualitative methods to compare bias in results from different search engines).

⁷¹ These are discussed in greater depth below. See *infra* Section I.B.3 (observing how software programs face limits in identifying the best deal).

⁷² See, e.g., Angwin & Mattu, *supra* note 22 (relying on software to scrape search results).

⁷³ Legal scholars often hand-code legal decisions to produce descriptive statistics about judicial decisions. See, e.g., Richard M. Re, *Beyond the Marks Rule*, 132 HARV. L. REV. 1943, 1954 n.88 (2019) (“Cases were coded by me and by the research assistants noted in the star note.”).

⁷⁴ On the importance of methodological pluralism, see, e.g., David S. Law & Mila Versteeg, *The Evolution and Ideology of Global Constitutionalism*, 99 CAL. L. REV. 1163, 1248 (2011) (“Constitutionalism is a multifaceted phenomenon that calls for a variety of scholarly approaches, ranging from statistical analysis of the content of formal constitutions at one end to sociological observation of how government officials behave on an everyday basis. Methodological pluralism is healthy for any academic discipline . . .”); Gregory Mitchell, *Why Law and Economics' Perfect Rationality Should Not Be Traded for Behavioral Law and Economics' Equal Incompetence*, 91 GEO. L.J. 67, 128 (2002) (calling for “the embrace of methodological pluralism and a reorientation in the conception of behavioral causes to better appreciate person-by-situation-by-decision task interactions”).

⁷⁵ See generally Elizabeth C. Hirschman & Morris B. Holbrook, *Hedonic Consumption: Emerging Concepts, Methods and Propositions*, 46 J. MKTG. 92 (1982) (distinguishing between extrinsic, utilitarian consumption values like price, and intrinsic, hedonic values like shopping experience).

⁷⁶ See sources cited *supra* note 4.

industry data on how a significant portion of Amazon customers shop.⁷⁷ In particular, our focus on product price is supported by survey data showing that 82% of Amazon shoppers view price as “a very important factor when selecting a product.”⁷⁸ Furthermore, since about eight of every ten people shop at Amazon,⁷⁹ it is reasonable to assume that many Amazon customers live on tight household budgets.

The next step in acquiring a deeper empirical understanding would be to collect nonpublic information about Amazon's pricing practices. To take that step, the FTC would only need a “reason to believe” that Amazon has material information that is relevant to unfair or deceptive acts.⁸⁰ The standard of inquiry in the rest of this section is thus whether there is reason to believe that the Amazon marketplace is manipulating consumers through its search results, specifically through burying, complexifying, anchoring, and self-preferencing.

2. Burying

To explore burying, we first looked at how consumers would fare if they chose the first item in the search result, as about half of all Amazon shoppers do.⁸¹ We compared the first relevant item to the item that was the best deal on the first page, defined as the item with at least as good ratings and the lowest price.⁸² Customers willing to scan all items on the first page of results for the best deal would have saved an average of 29%, on a unit price basis, over the first relevant item.⁸³ That best deal was at the seventeenth slot on average (corresponding to the fifth or sixth line of the search results on a typical computer screen).

Of course, these findings do not speak to the choices made by consumers who compare among the first few items in the search results. To reflect that reality, we examined how a consumer who compared the first four items in the search results (the “headline”) would have fared. We chose the first four items because they are the entire top line of results on a typical computer screen, and because marketing research reveals that the first three results account for an estimated 64% of Amazon clicks.⁸⁴ Consumers choosing the best deal in the the headline would fare better than those simply choosing the first item, but they would still pay an average of 25% more than if they had instead looked for the best deal on the first

⁷⁷ See *infra* notes 81 to 84 and accompanying text.

⁷⁸ Greg Magana, *Amazon Rules the Product Search Process*, BUS. INSIDER (Mar. 20, 2019, 9:13 AM), <https://www.businessinsider.com/online-shoppers-rely-heavily-on-amazon-2019-3> [<https://perma.cc/N8NB-5LQD>].

⁷⁹ See FEEDVISOR, *supra* note 25, at 15.

⁸⁰ See, e.g., 15 U.S.C. § 57(b)(1)(c) (establishing a “reason to believe” standard for requesting information relating to unfair and deceptive acts).

⁸¹ FEEDVISOR, *supra* note 25, at 16.

⁸² For our expanded methodology for finding the “best” deal, see Appendix. This comparison is based on $n = 95$ searches for which the first four headline results included at least one relevant item.

⁸³ P-value = 0.002. Note that these figures are a floor for savings from searching the first page, since they only represent the best deal on the first page, which was about forty-eight items. Yet 61% of searches returned over 100 items, and 21% of searches returned over 500 items. It is possible that greater savings can be found by searching beyond the first page which, if true, would only strengthen our findings.

⁸⁴ See Loren Baker, *Amazon's Search Engine Ranking Algorithm: What Marketers Need to Know*, SEARCH ENGINE J. (Aug. 14, 2018), <https://www.searchenginejournal.com/amazon-search-engine-ranking-algorithm-explained/265173/> [<https://perma.cc/6CDG-3CEN>].

page, beyond the headline.⁸⁵ Although we factored in unit prices to locate the best deal, similar savings were found in searches for which unit prices were not relevant, meaning that the savings we found are not simply due to a bulk-buying effect, or volume discount.⁸⁶

Since the first listed items are increasingly third-party “sponsored” ads, we also considered what would happen if the consumer ignored the ads and instead purchased the first relevant non-ad item.⁸⁷ Consumers who went to the first relevant non-ad item would pay less than those who chose the first item, but would still pay an average of 24% more than the best deal on the first page of results.⁸⁸ We also examined how a consumer comparing the first four non-ad results would have fared. Consumers choosing the best deal among the first four non-ad results would pay less than those choosing among the first four results (including ads), or indeed the first ad or non-ad result (if different), but they would still pay an average of 20% more than if they looked for the best deal on the entire first page.⁸⁹

Overall, these findings suggest that consumers could save considerably by ignoring Amazon's top results and instead scrolling lower into the results and calculating unit prices. Moreover, those savings do not need to come at the expense of lower quality, as we controlled for product reviews.⁹⁰ To reiterate, there are limitations to the inferences we can draw from our results. We cannot know, for instance, whether consumers are in fact recognizing that the first item returned is a bad deal, or that Amazon is ranking search results based on other nonprice factors that consumers value (more). Also, third parties have some control over where they land in the search results because they can pay for a sponsored slot, including paying more for a higher position—although Amazon can still reserve the top slot for its own products.⁹¹ In reality, however, this control is limited. Amazon's overall control of the search architecture means that sellers are effectively forced to choose between paying to be at the top—which would lower their profit margins or require them to raise prices—or being buried in the results, even if they offer the best deal.

At a minimum, our findings suggest that Amazon's search algorithms make it more difficult for some budget-conscious consumers to find what they would view as the most attractive deal. The subset of budget-conscious consumers who do not have the time or financial literacy to compare prices on the first page of results, or who simply trust Amazon's algorithms, will not get the best price. The subset of consumers that are able and willing to compare prices will pay in the form of time. Thus, regardless of the actual item chosen, budget-conscious consumers must pay for burying with either time or money. As we show

⁸⁵ P-value = 0.004. This disparity is not explained by differences in shipping speed or cost. Indeed, the standard shipping time for the best headline deal in our dataset was on average the same as the standard shipping time for the best overall deal (where not in the headline): four to five days.

⁸⁶ On searches that did not involve items sold in multiple units, savings were 26% by selecting the best overall deal compared to the best headline deal, compared to 25% for all searches. P-value = 0.005.

⁸⁷ See FEEDVISOR, *supra* note 25, at 16.

⁸⁸ P-value = 0.019.

⁸⁹ P-value = 0.000.

⁹⁰ Indeed, on average, the best deal still had an average rating of 4.6 out of 5 stars (for the deal comparison with ads), and 4.7 out of 5 stars (for the non-ad deal comparison), which for all searches was as high or higher than the best deal in the top few items. For more details, see Appendix (describing how we controlled for product quality).

⁹¹ See, e.g., Jeffries & Yin, *supra* note 22 (finding “that Amazon places products from its house brands and products exclusive to the site ahead of those from competitors”).

next, the complexity of the search results exacerbates this problem, by increasing the time it takes consumers to move through the results.

3. Complexifying

In terms of complexity of the decision setting, it is worth emphasizing that a number of factors make it more difficult for the consumer to compare search results. As a threshold example, there are many irrelevant results, such as AAA batteries returned in searches for AA batteries.⁹² The prevalence of irrelevant results and other contributors to complexity mentioned below explain why we opted to use human coding rather than computer coding to study Amazon's search results. Complexity, including due to product heterogeneity, means that the consumer cannot simply scan prices to find the best deal among the forty-eight results on the first page, but must also weigh a large number of other factors that collectively require significant time and analysis.

One of the most well-known sources of complexity in the behavioral economics literature is add-on costs, or fees that come later.⁹³ The past couple of decades have brought an explosion of these strategies, in which businesses shift the full costs of items to less visible aspects of the purchase—such as expensive parking rates in a hotel stay, high penalties for checking baggage when flying, or data fees for cell phones.⁹⁴ Thus, although it may strike many as counterintuitive that a seller would want to make it harder for the consumer to find the seller's most attractive offering, ample legal and economic scholarship has documented how sellers gain from strategically making it more difficult for consumers to find the best deal.⁹⁵

Amazon benefits from add-on fees and other sources of complexity in a number of ways. As discussed earlier, shipping obfuscation is the main dimension of Amazon's pricing practices that has been directly studied in a manner closest to our study.⁹⁶ However, Prime members are mostly spared from this particular source of complexity because they do not pay more for shipping.⁹⁷ Nonetheless, it is also quite possible that many Prime members are paying far more for the service than they realize. This concern is not relevant for those who purchase Prime to access streaming or other perks. However, for those who purchase Prime expecting to save money on shipping, it would be necessary to understand the costs of paying for that shipping separately. Shipping is free for orders over \$25, even without Prime.⁹⁸ Thus, among a consumer's total purchases, only orders under \$25 are relevant for assessing the true cost of Prime membership, again if the member's sole goal in signing up for Prime is to

⁹² Incorrect results have long been the subject of speculation among Amazon customers. *See, e.g., Why Is Amazon's Search so Crappy and Gives a Lot of Unrelated Products?*, QUORA, <https://www.quora.com/Why-is-Amazons-search-so-crappy-and-gives-a-lot-of-unrelated-products> [<https://perma.cc/EB7Z-MNJ9>].

⁹³ *See* Ellison & Ellison, *supra* note 22, at 427.

⁹⁴ *See id.* (describing add-on pricing as a “profit-enhancing obfuscation strategy”).

⁹⁵ *See supra* Section I.A (summarizing the behavioral economics literature). Oren Bar-Gill has most thoroughly developed the theory and empirics of how sellers strategically use complexity to charge higher prices. *See* BAR-GILL, *supra* note 12, at 124.

⁹⁶ *See* Angwin & Mattu, *supra*, note 22

⁹⁷ *Supra* Part B.1.

⁹⁸ *See* Alberto Cavallo, *More Amazon Effects: Online Competition and Pricing Behaviors* 16 (Nat'l Bureau of Econ. Rsch., Working Paper No. 25138, 2018).

save money on shipping. On that basis, the most accurate way to calculate the cost of membership would be to spread the \$180 (before tax) annual Prime membership fee only across the subsequent purchases for which the consumer would have paid more for shipping.⁹⁹ If part of the appeal of Prime is faster shipping, then the member should also count those orders for which Prime brings faster shipping *and* the member would have been willing to pay for the day or two of time saved.

By way of illustration, consider how Prime members spend an average of \$1,400 annually.¹⁰⁰ If Prime makes a difference to shipping for only half of a customer's \$1,400 Amazon expenditures—that is, the customer would pay extra for faster shipping or the purchase is under \$25—then the Prime surcharge would amount to 26% of the price of those items, again only for those purchasing Prime solely for shipping.¹⁰¹ Presumably, the average budget-conscious Prime consumer is not undertaking such calculations, and consequently is not realizing how much they are actually paying for their Prime membership's "FREE Two-Day Shipping."¹⁰²

Beyond shipping, insufficient empirical attention has been paid to the role of comparing unit prices in search results, which were factored into our study.¹⁰³ Comparing unit prices is made more cumbersome for consumers because unit prices are not always listed, they are sometimes listed incorrectly, and most importantly, Amazon does not allow consumers to filter by unit price. We did not estimate the magnitude of all of these challenges. Our study found that unit prices were relevant to 62% of the searches, based on the headline four items. That is, 62% of the searches included at least one item sold in multiple units or containers with different volumes, and thus the consumer needed to know the unit price in order to comparison shop. Yet, 47% of these searches were missing unit prices for at least one item for which they were relevant.¹⁰⁴ This data suggests that, in a large number of searches in which unit prices are necessary to locate the best deal, they are not uniformly listed.

Amazon also offers subscriptions as another pricing option for many regularly consumed items, from coffee to paper towels. These subscription prices are listed in search results and product pages, labeled often as a "5% / 15%" discount.¹⁰⁵ This "Subscribe & Save"¹⁰⁶ option

⁹⁹ More broadly, for calculation purposes, benefits include whatever perks the customer would have paid for, such as "free" videos.

¹⁰⁰ Daniela Coppola, *Average Monthly Spending of Prime Members on Amazon in the U.S. 2021, by Range*, STATISTA (Nov. 5, 2021), <https://www.statista.com/statistics/1274279/monthly-spending-on-prime-amazon-users-united-states/> [<https://perma.cc/GUF6-ZM4Z>].

¹⁰¹ Calculated as \$180 Prime membership divided by one-half of the \$1,400 average expenditures, $180 / (1,400 / 2) = 0.257$. Under this assumption, the amount could be lower as the amount of shipping paid on the other three-quarters of purchases must be subtracted from the Prime membership fee first. To determine whether Prime is worth that surcharge, it would then be necessary to calculate how much the customer would have otherwise paid for accelerated or normal shipping on such items.

¹⁰² *About Amazon Prime*, AMAZON, <https://www.amazon.com/gp/help/customer/display.html?nodeId=201910360> [<https://perma.cc/EZ8U-Y7HZ>] (last visited Oct. 23, 2023) (detailing Prime membership benefits).

¹⁰³ See Appendix (describing our methodology).

¹⁰⁴ $n = 29$, of 62 searches for which unit pricing was relevant. In total, for searches needing unit prices to adequately compare, 40% of the items produced by those searches did not list the unit price ($n = 69$, of 171 items matching the search term for which the unit price is relevant).

¹⁰⁵ Screenshot on file with authors.

¹⁰⁶ Screenshot on file with authors.

is surely a useful service for many consumers, but determining whether to sign up requires the consumer to make a difficult and speculative prediction about whether the advertised savings will continue to provide the best deal in the future, how much of the product the consumer will use, and whether the consumer trusts herself to stay vigilant about checking those subscription prices, which may continually change. For purposes of search result comparison, it also adds another layer of decision-making complexity to internal Amazon price comparisons. Moreover, upon clicking on an item, the purchase defaults to the subscription option, meaning that the consumer must proactively opt out of subscribing. That default leverages behavioral economics insights showing that default settings heavily influence consumer behavior.¹⁰⁷

Finally, Amazon has many different categories of items and labels to sort through. These include “Limited time deal,” “Amazon’s Choice,” “Best Seller,” and “Climate Pledge Friendly.”¹⁰⁸ Amazon also subcategorizes results under headings such as “Highly Rated,” “Highly Rated With a Low Unit Price,” “Top Rated From Our Brands,” and “Editorial Picks.”¹⁰⁹ While some of these labels and categories are accurate, and may guide the consumer toward better deals, at least sometimes they do not.¹¹⁰ Rather, these labels could augment misperception by consumers. For instance, the “Best Seller” label may imply that many consumers have closely scrutinized alternative options before purchasing that item, when the high volume of sales could instead be due to Amazon promoting its own products. For example, Amazon could offer more competitive prices on an item for a brief period to earn the top sales spot, and then raise the price of the item above the competitive level. The “Best Seller” label can thereby offer unwarranted price legitimacy. Amazon’s labels thereby add to product complexity, which collectively swamps the consumer with so much information that they are more likely to misperceive price and make a suboptimal purchase.¹¹¹ At a minimum, these labels risk contributing to the type of cognitive overload that pushes consumers to rely on mental shortcuts and make irrational decisions, as extensively documented by behavioral economics.¹¹²

Advertisements contribute further complexity. In recent years, Amazon has shifted increasingly toward integrating ads into search results, not only at the top but intermittently throughout the search results.¹¹³ This includes ads for third-party brands as well as Amazon’s private-label brands.¹¹⁴ Note that the labels mentioned above, which Amazon wants the customer to see—such as “Amazon’s Choice”—appear prominently in the search results, in bold colors at the top of each product box. In contrast, the “sponsored,” “featured from our

¹⁰⁷ Lauren Willis, *When Nudges Fail: Slippery Defaults*, 80 U. CHI. L. REV. 1155, 1171 (2013) (“Given the power of defaults to attract business, controlling the default can be extremely valuable.”).

¹⁰⁸ Screenshots on file with authors.

¹⁰⁹ For a discussion of the Amazon’s Choice label, see, e.g., Louise Matsakis, *What Does It Mean When a Product Is ‘Amazon’s Choice’?*, WIRED (June 4, 2019, 11:39 AM), <https://www.wired.com/story/what-does-amazons-choice-mean> [<https://perma.cc/GEV6-HKZV>].

¹¹⁰ *See id.*

¹¹¹ OMRI BEN-SHAHAR & CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE 9–11 (2014) (describing how one website’s disclosures overloaded readers with so much information that nobody noticed a hidden offer for \$100 to anyone who noticed it).

¹¹² *See supra* Section I.A.

¹¹³ *See* Jeffries & Yin, *supra* note 22.

¹¹⁴ *See infra* Section I.B.5.

brands,” and “Amazon brand” labels appear in the middle of the product box and in a much less conspicuous, faint gray label. These easily overlooked labels are nevertheless an improvement over Amazon’s prior practices, which were the subject of an FTC enforcement action, of not always disclosing which items were sponsored.¹¹⁵

More research is needed to determine whether the additional information in Amazon’s search results is desirable or hinders consumer decision-making due to strategically exaggerated complexity. Our main argument is that these and other complexifying factors that add to the information glut may make it considerably harder or more time-consuming for consumers to compare search results. These effects compound our study’s findings that Amazon buries the best deals, on average, at the seventeenth slot in the search results.

4. Anchoring

Burying and complexifying combine with another misperception strategy: anchoring. Anchoring refers to how context heavily influences the human mind. Various studies have shown that the initial information provided—known as the anchor or reference point—alters consumers’ subsequent judgments and can cause many consumers to think that they are getting a low price when they are not.¹¹⁶ A common price anchoring technique used by retailers—in both brick-and-mortar and online shops — is to display a crossed out “MSRP” or “list price” next to the current, cheaper price.¹¹⁷

Amazon search results often deploy anchoring. Above the actual price, Amazon often puts a crossed-out list price, allegedly from which the item was substantially discounted, such as a \$108 Cuisinart bread maker whose “original” list price was \$185.¹¹⁸ In recent months, Amazon has started to indicate the percentage “discount,” in bold red lettering in the search results, such as to show that the price is a 21% discount compared to the original price, thereby emphasizing potential anchoring effects.¹¹⁹

Our study revealed that 65% of search results contained at least one item with a crossed-out list price in the first four headline items. Among the relevant headline items that contained such crossed-out list prices, the reference price represented on average a 23% markdown on the crossed-out list price.¹²⁰ That is, a consumer viewing any of these items is likely to believe that they are saving 23% by buying it. If anchoring due to crossed-out list

¹¹⁵ *Complaint to the Federal Trade Commission Against Amazon for Unlawful Deception Under Section 5 of the Federal Trade Commission Act*, STRATEGIC ORG. CTR. (Dec. 8, 2021), https://thesoc.org/wp-content/uploads/2021/12/SOC-FTC-AMZ-Advertising-Complaint_2021_12_08.pdf [<https://perma.cc/4HJN-8BNL>] (alleging Amazon violates Section 5 of the FTC Act for failing to “disclose which of its search engine results are paid advertisements rather than ‘organic’ search results”).

¹¹⁶ Tversky & Kahneman, *supra* note 10, at 1128; DANIEL KAHNEMAN, THINKING, FAST AND SLOW 123–24 (2013); Fritz Strack & Thomas Mussweiler, *Explaining the Enigmatic Anchoring Effect: Mechanisms of Selective Accessibility*, 73 J. PERSONALITY & SOC. PSYCH. 3, 437 (1997).

¹¹⁷ See DAN ARIELY & JEFF KREISLER, DOLLARS AND SENSE: HOW WE MISTHINK MONEY AND HOW TO SPEND SMARTER 100–01 (2018).

¹¹⁸ See AMAZON, <http://www.amazon.com> [hereinafter *Amazon Search*] (searching for “Cuisinart Bread Maker, Up To 2lb Loaf, New Compact Automatic”) (last visited Oct. 23, 2023) (screenshot on file with the authors).

¹¹⁹ Screenshots on file with the authors.

¹²⁰ Thirty-six percent of relevant items (n = 108 of 299) contained crossed-out list prices.

prices induces the consumer to pick the item with the largest apparent “discount” in the headline, they would have paid on average 31% more than the best deal.¹²¹ In other words, a hypothetical naïve consumer always buying the most “discounted” item in the headline would think they were saving on average 23% but would actually be paying 31% more than the best deal.

Although it is difficult to verify the veracity of Amazon’s (crossed-out) list prices, and thus their suggested discounts, Amazon paid two million dollars for anchoring consumers with inflated list prices in a recent attorney general enforcement action.¹²²

5. Personalized Pricing and Self-Preferencing

Another potential misperception strategy is self-preferencing of Amazon’s own brand items. Prior research has shown that Amazon favors its own brands by systematically putting them at the top of search results.¹²³ Antitrust scholars have criticized Amazon’s self-preferencing as anticompetitive,¹²⁴ and bipartisan bills have been proposed in Congress to address this problem.¹²⁵ However, our study found that only 5% of relevant items at the top of the search results in our dataset were Amazon brands. This suggests that Amazon may have scaled back this particular, highly visible form of self-preferencing, perhaps in response to criticism.

One final lever strengthens Amazon’s ability to use its internal search engine to charge more, while limiting the risk of customer flight. Amazon has collected troves of data from customers’ direct use of its online marketplace. As a result, it knows a great deal about its customers’ preferences and behaviors—including a given customer’s susceptibility to anchoring or burying—and can thereby personalize the results it provides, and prices it offers, to maximize profits. For instance, when consumers search or visit a product page, Amazon collects extensive data on their behavior—including where a consumer’s mouse hovers.¹²⁶ It also knows when consumers are returning to an item’s product page over time,

¹²¹ Calculated on a unit price basis. P-value = 0.010.

¹²² See Final Judgment Pursuant to Stipulation at 4–5, *People v. Amazon.com, Inc.*, No. 37-2021-00011984 (Super. Ct. Cal. Mar. 24, 2021), <https://www.courthousenews.com/wp-content/uploads/2021/03/Amazon-Judgment.pdf> [perma.cc/4WZW-PH58].

¹²³ See Jeffries & Yin, *supra* note 22. This refers to products explicitly identified as an Amazon brand, e.g., “Amazon Basics” or “Amazon Brand – Solimo.” Amazon has several private label brands. These were originally listed without signalling that they were Amazon brands. However, after criticism, Amazon seems to have moved toward labelling some of such brands (screenshots on file with the authors). Cf. Reiley Pankratz, *Duty to Disclose: Amazon’s E-Commerce Platform, Private-Label, and the Need for Disclosure*, 30 KAN. J.L. & PUB. POL’Y 162, 162–63 (2020) (criticizing the lack of disclosures for brands like Solimo).

¹²⁴ See Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 985–96 (2019) (summarizing the literature).

¹²⁵ MAJORITY STAFF OF SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. OF THE COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 7–8 (2020).

¹²⁶ See Nick Bravo, *Amazon Private Labels Threaten Manufacturers*, TRENDSOURCE (July 5, 2016, 8:00 AM), <http://trustedinsight.trendsource.com/trusted-insight-trends/amazon-private-labels-threaten-manufacturers> [perma.cc/HSB9-RPUU] (describing how Amazon is “capitalizing on their enormous troves of data concerning consumer purchasing habits”); *Privacy Notice*, AMAZON.COM (Aug. 11, 2023), <https://www.amazon.com/gp/help/customer/display.html?nodeId=GX7NJQ4ZB8MHFRNJ> (stating that Amazon.com collects and analyzes page interaction information such as mouse-overs).

which suggests a greater likelihood of purchasing the item.¹²⁷ Indeed, Amazon has sufficiently rich internal data on each customer to predict when customers may be searching on its website and then purchasing elsewhere.¹²⁸ Our methodology did not allow for studying the personalization of search results. However, our study does illustrate the potential for search result manipulation to serve as yet another mechanism for personalized pricing.

* * *

Notwithstanding limitations, there is cause for concern that Amazon's search results are anticompetitive in the sense that they move purchases away from the conditions for full competition, in which consumers are assumed to make informed and rational decisions. Whether orchestrated by Amazon or the manufacturer, the obfuscation and complexity of the product pages add another barrier to rational and informed decision-making. Consumers need to make multiple calculations to uncover the true unit price, determine how much of their Prime membership is applied to a given purchase, and estimate the lifetime costs of a product with add-on purchases. To locate the best deal, consumers must often further compare multiple prices for each product, such as "Subscribe & Save" and crossed-out list prices, along with the prices of approximately fifty other items in the search results.

In addition to our empirical research based on Amazon search results, there is a large body of influential economic theory and evidence suggesting that the profit-maximizing move for Amazon would be to engage in search result manipulation, including through anchoring and burying.¹²⁹ For example, a machine learning algorithm told to list Amazon products based on the goal of maximizing profits would be expected to come to the conclusion that such practices were optimal.¹³⁰ Amazon's search result rankings are driven by an experimental process designed to test how consumers respond to various configurations.¹³¹ The algorithms regularly adjust prices and rankings based on various factors, including competitors' offerings and prior consumer behavior.¹³² By one account, Amazon adjusts prices millions of times per day.¹³³ Not only do these changes help to identify opportunities to manipulate consumers and maximize Amazon's profits, but they also mean that the consumer cannot assume that the (potentially time-intensive) price comparison

¹²⁷ See *Privacy Notice*, AMAZON.COM (describing how Amazon.com collects data on URL clickstreams; content searches; length of visits on webpages; and other page interaction information).

¹²⁸ Retailers generally have considerable access to information that can be used to tailor prices. See generally Bar-Gill, *supra* note 38, at 2019 (describing the extensive data available to firms for price discrimination).

¹²⁹ Business scholars and consultants have repeatedly concluded that behavioral pricing practices can increase profits, and that practices that raise prices are an inevitable, logical part of doing business. See, e.g., Gabaix & Laibson, *supra* note 10, at 531 (explaining why firms would place themselves at a disadvantage if they did not shroud prices and how firms receive lower profits when they interact with informed consumers); Ryan Hamilton & Alexander Chernev, *Low Prices Are Just the Beginning: Price Image in Retail Management*, 77 J. MKTG. 1, 4, 8–9 (2013) (reviewing business and economic literature on behavioral pricing); *supra* Section I.A.

¹³⁰ Cf. Van Loo, *supra* note 12, at 1336–47 (summarizing the algorithmic pricing practices of retailers).

¹³¹ See Brian Wallheimer, *Are You Ready for Personalized Pricing?*, CHI. BOOTH REV. (Feb. 26, 2018) <https://www.chicagobooth.edu/review/are-you-ready-personalized-pricing> [https://perma.cc/EFJ7-XQYN].

¹³² See Bravo, *supra* note 126 and accompanying text.

¹³³ See Haley Peterson, *Amazon Changed The Price of an Item 8 Times in a Single Day*, BUS. INSIDER (Aug. 1, 2014) <https://www.businessinsider.com/amazon-price-tracking-2014-8>.

undertaken for a given purchase will still be valid the next time.

Thus, the time, complexity, and psychological pressure required to make effective decisions within Amazon is greater than commonly assumed. Amazon benefits by adding more search obfuscation to existing product-level obfuscation. Given these barriers to finding the best deal, it is understandable that many consumers simply go with the top result—or decide quickly after scanning a few options.¹³⁴ In light of the theory and evidence available, these complications would be expected to lead to decisions that, viewed through the lens of behavioral economics, cause consumers on average to pay higher prices at Amazon.¹³⁵ We thus believe that there is a sufficient “reason to believe” that Amazon has material information relevant to unfair or deceptive acts in its search results for the FTC and attorneys general to be able to collect nonpublic data about actual Amazon purchases, in order to assess the issue in a more rigorously.¹³⁶

C. Comparison Outside of Amazon

In theory, the first step in shopping is to decide which retailer to use. That would mean comparing Amazon to Walmart, Target, and many other online and brick-and-mortar retailers. The previous sections posited one explanation, beyond convenience, for why many consumers do not look outside Amazon: it is already so time-consuming and challenging to find the best deal within Amazon. Consequently, consumers have less time to look elsewhere—or must decide how much of their limited time and energy to spend finding the best deal within Amazon rather than outside. If consumers were able to quickly find the best deals on Amazon, cross-store comparisons would be more feasible.¹³⁷

Amazon has another factor in its favor that lessens the chances that consumers comparison shop outside of Amazon: its image as a retailer offering competitive prices.¹³⁸ That low-price image is important because one of the fundamental principles in retail pricing is that the overall image that a consumer has of a store heavily influences whether they see individual items as low-priced.¹³⁹ For example, consumers are less likely to check prices when they have confidence that a store overall offers good deals.¹⁴⁰ Consequently, retailers work

¹³⁴ See FEEDVISOR, *supra* note 25, at 16.

¹³⁵ See *supra* note 12 (providing examples of research concluding that consumers pay higher prices).

¹³⁶ See, e.g., 15 U.S.C. § 57(b)(1)(c) (establishing “reason to believe” a company is engaging in unfair practices as the standard for beginning a civil investigation).

¹³⁷ In reality, other sellers also engage in similar obfuscation, which speaks to the need for intervention to change the behavior not just of Amazon, but of all large e-commerce sites. On the widespread nature of such practices, see, e.g., Hamilton & Chernev, *supra* note 129, at 4 (summarizing the literature on pricing).

¹³⁸ This is true not only among legal scholars and the media, as described above, but also consumers. See Dennis Green, *One Figure Shows Why Prime Membership Is So Powerful for Amazon*, BUS. INSIDER (July 16, 2018, 1:31 PM), <https://www.businessinsider.com/amazon-prime-members-dont-price-compare-survey-says-2018-7> [<https://perma.cc/B3AG-UUCH>].

¹³⁹ See *id.* (discussing the notion that consumer decisions are influenced by a retailer’s actual prices and a retailer’s image as a vendor with low prices).

¹⁴⁰ See *id.*; see, e.g., PHIL BARDEN, DECODED: THE SCIENCE BEHIND WHY WE BUY 50–51 (2013) (exploring psychological biases, including how consumers are more likely to purchase items ending in the digit “9”); see also Michael S. Barr, Sendhil Mullainathan & Eldar Shafir, *The Case for Behaviorally Informed Regulation*, in NEW PERSPECTIVES ON REGULATION 25, 33 (David Moss & John Cisternino eds., 2009) (“The amount of information people attend to is limited . . .”).

hard to establish a low-price image in consumers' minds. Yet consumers are unreliable in forming such a price image, relying on as few as three to five familiar items to decide on the overall pricing, and inferring from a store's large size that it is more likely to offer volume discounts.¹⁴¹ As a result, consumers often think they are making an informed retail decision and getting a good deal by relying on flawed mental shortcuts about the overall prices offered.¹⁴²

There is reason to think that Amazon's low-price image thus lessens the likelihood that consumers make effective decisions about whether to purchase from Amazon or a competitor. As should be clear by now, Amazon shopping involves sufficient complexity that it is difficult and time-consuming to undertake a thorough comparison within Amazon and across other retailers for all items.¹⁴³ Many consumers must thus rely to some extent on their general sense of Amazon's prices in deciding how much of their limited shopping time and energy to devote to Amazon. Almost half of all Amazon customers do not feel the need to comparison shop outside of Amazon because they believe it offers the lowest prices available.¹⁴⁴ Many others still perceive Amazon as offering low prices even if they may sometimes look elsewhere.¹⁴⁵

Amazon's low-price image is unsurprising because first impressions are strong, and Amazon benefited early on from two key narratives. The first is its original focus on books. When it started up in 1994, the company sold books at lower prices than brick-and-mortar bookstores, such as Barnes & Noble and Borders.¹⁴⁶ The second narrative is Amazon's many years of operating without a profit, which became a source of fascination in the media.¹⁴⁷ The overall impression created by these narratives was that Amazon both offers low prices and operates at a razor-thin margin.

However, it is questionable whether these enduring impressions were accurate. The antitrust literature on Amazon has offered one way to reconcile Amazon's early low prices with higher modern prices. In an influential student note, now-FTC Commissioner Lina Khan argued that the way to understand Amazon's low prices was to view them as an attempt to gain market share by selling below cost.¹⁴⁸ After wiping out the competition, the lost profits from the early time period would be regained later, after Amazon gained monopoly power.¹⁴⁹

Whether that thesis is true is subject to debate.¹⁵⁰ There is some evidence that Amazon's

¹⁴¹ Hamilton & Chernev, *supra* note 129, at 4, 6.

¹⁴² *See id.* (providing examples of heuristics such as relying on subtle cues or a small number of items to determine price).

¹⁴³ *See supra* Section I.B.

¹⁴⁴ *See* Green, *supra* note 138.

¹⁴⁵ *Cf. id.* (describing the general low-price image).

¹⁴⁶ *See id.*

¹⁴⁷ *See* Myers, *supra* note 4, at 406.

¹⁴⁸ Khan, *supra* note 1, at 747–53 (focusing on the possibility that Amazon can offer low prices during an early period of market gains and then raise them later).

¹⁴⁹ *See id.* at 786 (“The most effective way [to compete in markets] is to chase market share and drive out one’s rivals—even if doing so comes at the expense of short-term profits, since the best guarantee of long-term profits is immediate growth.”).

¹⁵⁰ *Compare* Khan, *supra* note 1, at 753 (arguing that Amazon's low prices are a violation of antitrust law's

prices started low and trended upward, at least in some narrow product categories, such as e-books and diapers, the latter in an effort to intimidate Diapers.com into selling itself to Amazon.¹⁵¹ However, the evidence suggests that the period during which Amazon may have sold below cost in diapers was limited to about a year.¹⁵² Moreover, because they could not access internal Amazon data, Khan and others were forced to rely largely on evidence from blogs and news sources—evidence that was strongest for only a few specific product categories, such as e-books and diapers, or during earlier time periods, mostly before 2014.¹⁵³ Without more reliable evidence on Amazon's pricing, it is difficult to know the historical reality. It is quite possible that Khan and others were correct in their specific observations about price in certain categories and at certain times.

We do not take a position on which side of this debate is correct. But we do see reason to believe that perceptions of Amazon's low prices could have long been incorrect or at least exaggerated. Our study shows that the mere availability of low-priced item listing on Amazon does not mean that consumers are overall purchasing those low-priced items. To answer that crucial question, one would need internal sales data about what prices consumers were paying at the time, or as a second-best option a sense of how Amazon might have been steering consumers away from those low-priced items in its search results.

Moreover, even assuming Amazon customers were consistently purchasing low-priced items in a given category when it was low priced, such as for diapers during that year, that does not mean that those customers saved money overall that year by trusting Amazon's prices, if they bought other higher-priced products alongside diapers. Retailers regularly offer low prices in one category and make up for it by charging higher prices in other categories.¹⁵⁴ Either way, the limited periods during which Amazon may have undercut competitors—whether to establish a low-price reputation or to intimidate a competitor—would not justify the sustained impression that Amazon overall long offered low prices.

Likewise, Amazon's many years of operating without a profit are misleading. The company does not report its profits in a way that allows for outsiders to determine exactly how profitable its retail business model is. Its years of annual losses simply mean that the company overall spent more than it earned—aggressively reinvesting existing profits and borrowing to accelerate growth—which even a monopoly can do.¹⁵⁵ It is well known that,

prohibition on predatory pricing), with John B. Kirkwood, *Collusion to Control a Powerful Customer: Amazon, E-Books, and Antitrust Policy*, 69 U. MIAMI L. REV. 1, 42 (2014) (concluding that Amazon's low-price strategy is legal because "Amazon was engaged in loss leading, not predatory pricing").

¹⁵¹ *Online Platforms and Market Power: Examining the Dominance of Amazon, Apple, Facebook, and Google*, Hearing Before the Subcomm. on Antitrust, Com., and Admin. L. of the H. Comm. on the Judiciary, 116th Cong. 488 (2020) (providing an email thread between Amazon employees regarding Diapers.com showing low-price strategy).

¹⁵² See *id.* at 109–10.

¹⁵³ See Khan, *supra* note 1, at 715, 751, 753, 757.

¹⁵⁴ See Kirkwood, *supra* note 150, at 9 (discussing how Amazon engaged in loss leading—not predatory pricing—in the e-books industry by selling some books for a profit and others below cost in order to make an overall profit).

¹⁵⁵ Public companies only need to report their overall financial statements, not broken down by business unit, and thus do not have to tell which business units are and are not profitable. *Exchange Act Reporting and Registration*, SEC, <https://www.sec.gov/smallbusiness/goingpublic/exchangeactreporting> [<https://perma.cc/H45Z-MGFN>]; *How to Read a 10-K/10-Q*, SEC (Jan. 25, 2021), <https://www.sec.gov/fast-answers/answersreada10khtml.html> [<https://perma.cc/7S75-QKJB>].

during its many years of company-level unprofitability, Amazon invested heavily in building warehouses across the country and a rapid distribution infrastructure.¹⁵⁶ It is thus altogether possible, if not likely, that Amazon has long directed profits from its retail sales to investing in growth. Thus, to the extent that the publicity about Amazon's unprofitability caused scholars and consumers to assume it was selling at rock-bottom prices, that inference may have rested on incorrect reasoning.

Additionally, there is some limited evidence of how Amazon's prices compare to those of competitors, such as Target, Walmart, or independent sellers. The price that consumers pay for Amazon's convenience is difficult to determine since the company sells more than twelve million products and for some products changes its prices over a hundred times per day.¹⁵⁷ Also, as our research indicates, the mere listing of an item at a low price does not mean consumers are finding that low price.¹⁵⁸ Nonetheless, recent informal studies comparing Amazon to Walmart.com have found that Walmart offers lower prices than Amazon.¹⁵⁹ Consumers who simply assume Amazon has the lowest prices may therefore be paying considerably more due to that assumption.¹⁶⁰

Another relevant factor in forming a general conclusion about a store's deals is that prices vary greatly between Amazon and other retailers. This helps explain how one could, for instance, save eighteen percent by buying sponges from Walmart instead of Amazon, but save eleven percent by buying diapers from Amazon instead of Walmart.¹⁶¹ As a result, regardless of how much consumers would save overall by buying exclusively from Walmart rather than exclusively from Amazon, considerably more savings are possible by buying from both retailers.¹⁶²

Nor are these savings only available at Walmart. Even in Amazon's original budget category, books, a 2006 academic study estimated that it does not offer the lowest price ninety-six percent of the time.¹⁶³ Even in books, Amazon is more accurately seen as adopting

¹⁵⁶ Khan noted this intense investment in growth. See Khan, *supra* note 1, at 749, 753.

¹⁵⁷ See *id.* at 763; Ramsi A. Woodcock, *The Efficient Queue and the Case Against Dynamic Pricing*, 105 Iowa L. Rev. 1759, 1761 (2020).

¹⁵⁸ See *supra* Section I.B.

¹⁵⁹ The most recent and comprehensive of these studies looked at one hundred items and found that Walmart prices were lower in most categories—including cleaning products and medicines. See, e.g., *Amazon vs. Walmart: Who's Really Cheaper During COVID-19?*, THE KRAZY COUPON LADY (May 6, 2023), <https://thekrazycouponlady.com/tips/couponing/amazon-vs-walmart> [<https://perma.cc/37SK-9B73>] (looking at over one hundred items in eight categories); Kyle James, *Which Store Is Cheaper: Walmart or Amazon.com?*, RATHER-BE-SHOPPING (Oct. 19, 2022), <https://www.rather-be-shopping.com/blog/price-smackdown-walmart-vs-amazon> [<https://perma.cc/585Q-NY8P>] (taking twenty-one random products and concluding that shoppers would save more at Walmart).

¹⁶⁰ The fact that Walmart offers lower prices than Amazon does not mean that it offers the lowest prices. For example, the national supermarket Aldi has for years offered eighteen to twenty-four percent savings over Walmart's in-store prices. See Nathaniel Meyersohn, *How a Cheap, Brutally Efficient Grocery Chain Is Upending America's Supermarkets*, CNN: BUS. (May 17, 2019), <https://www.cnn.com/interactive/2019/05/business/aldi-walmart-low-food-prices/index.html> [<https://perma.cc/DJP7-9HNF>] (summarizing research into price differences on a basket of forty common goods).

¹⁶¹ See THE KRAZY COUPON LADY, *supra* note 159.

¹⁶² See *id.*

¹⁶³ Luo et al., *supra* note 19, at 805 ("In our data sample . . . Amazon.com and Barnes & Noble.com fail to offer the cheapest product . . . 96 percent of the time in the 2006 sample.").

a mid-tier pricing strategy, not as the low-price leader.¹⁶⁴

Thus, although there has yet to be a systematic study of how Amazon's prices compare to those of other online retailers, the larger point is that behavioral strategies such as complexity, burying, and anchoring may have enabled Amazon's low-price image to persist even when it was no longer accurate. Faced with the prospect of weighing the various shipping costs, prices for different features, and so on, many consumers will simply continue to assume that the best deal likely exists at Amazon. Such assumptions can produce costly misperceptions.

II. IMPLICATIONS

Part I provided preliminary evidence that Amazon is harming consumers and reducing efficiency through manipulative pricing practices. They also have the potential to regressively redistribute, to the extent that Amazon's customers and small businesses are less well off than Amazon's shareholders and executives.¹⁶⁵ Thus, whether one prioritizes efficiency or distribution there are strong normative grounds for regulation of consumer market manipulation.

This Part begins by showing the importance of combining antitrust, behavioral economics, and consumer law to fully understand Amazon's pricing paradox. It then examines lighter information disclosure interventions before examining stronger interventions rooted in ongoing administrative agency monitoring and enforcement. It bears emphasis that these reforms are relevant to other large online retailers as well, such as eBay, Target, and Walmart, to the extent that they engage in similar pricing practices.¹⁶⁶ The ideas discussed below should not be seen as a proposal for pursuing many legal mechanisms simultaneously. Instead, they offer a menu of options from which policymakers can choose, should the evidence continue to indicate the existence of widespread consumer manipulation by Amazon. Each is aimed at making online consumer markets more competitive, for the benefit of consumers and society.

A. Integrating Antitrust and Consumer Protection

The case of Amazon illuminates a shortcoming in the U.S. legal paradigm for competition. In many other countries, such as the U.K., Canada, and Australia, the regulatory framework closely integrates competition law and consumer protection.¹⁶⁷ By contrast, the

¹⁶⁴ See *id.* at 805–07 (concluding based on a large data set that Amazon utilizes mid-tier pricing).

¹⁶⁵ For a summary of the link between retail anticompetitive pricing and inequality, see Van Loo, *Helping Buyers Beware*, *supra* note 12, at 1359. For a review of the literature on the distributional implications of antitrust overcharge, see, for example, Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267, 1267 (2016) (discussing the many economists who conclude that overcharge worsens economic inequality and drawing a similar conclusion); *but see* Daniel A. Crane, *Antitrust and Wealth Inequality*, 101 CORNELL L. REV. 1171 (2016) (challenging the core assumptions underlying the relationship between economic inequality and antitrust).

¹⁶⁶ As mentioned above, scholars have documented the pervasiveness of behavioral pricing in retail markets. See *supra* notes 11–15 and accompanying text.

¹⁶⁷ See, e.g., WILLIAM E. KOVACIC, THE FEDERAL TRADE COMMISSION AT 100: INTO OUR 2ND CENTURY 37–38 (2009), <http://www.ftc.gov/os/2009/01/ftc100rpt.pdf> [<https://perma.cc/759X-JUCL>] (observing

U.S. intellectual conception of “competition law” is oriented around antitrust in a way that is more disconnected from consumer protection.¹⁶⁸ The institutional design of the regulatory framework reflects this disconnect. The FTC largely enforces antitrust through its Bureau of Competition, which is separate from the FTC’s Bureau of Consumer Protection.¹⁶⁹

Some U.S. scholars, mostly those specializing in antitrust, have emphasized the importance of integrating antitrust and consumer protection, or as it is often framed, integrating “competition and consumer protection.”¹⁷⁰ And these two fields are widely viewed as complementary, in the sense that both ultimately seek to advance consumer welfare and can sometimes be substitutes for one another.¹⁷¹ However, these conversations fail to address, and perhaps unintentionally reinforce, a central conceptual problem illustrated by the case of Amazon. As the framing of “competition and consumer protection” implies, the intellectual framework still sees consumer protection as unnecessary for understanding competition. This disconnect has potentially weakened antitrust law and academics’ broader study of market prices.

Scholars have observed that Amazon’s apparently low prices have made it harder to build the antitrust case against the company.¹⁷² At a surface level, this raises concerns about how an intuitive perception of price informs the decision of whether to investigate a company for abuse of monopoly power.¹⁷³ This Article’s findings indicate that the existence of behavioral pricing practices, particularly in search results, may confound that initial assessment and thereby discourage antitrust authorities from examining prices more closely.

However, scholars focusing on consumer manipulation have repeatedly shown that behavioral overcharge can occur even without any monopoly power.¹⁷⁴ That research means

that many countries organizationally integrate consumer protection and competition into the same agency to a greater extent than in the United States).

¹⁶⁸ See, e.g., Louis Kaplow, *On the Relevance of Market Power*, 130 HARV. L. REV. 1303, 1304 (2017) (using “competition law” to refer to antitrust law).

¹⁶⁹ See Kovacic, *supra* note 167, at iv. The FTC does have a Bureau of Economics that serves both sides and is intended, at least in part, to integrate consumer protection and competition. However, in practice, this group is divided into two competition divisions and one consumer protection division. See *id.* at 29 (explaining also that there is a division that focuses on research and outreach).

¹⁷⁰ See, e.g., *id.* at 35–38 (making the general observation that there are benefits to integrating competition and consumer protection); Van Loo, *supra* note 38, 95 NOTRE DAME L. REV. 211, 231, 254–55 (2019) (arguing that consumer law should integrate competition and consumer protection so that the magnitude of the harm of overcharge can be better understood); Wright, *supra* note 33, at 2224 (observing that behavioral economics will create challenges for integrating consumer protection and antitrust due to the differing conceptions of consumer preferences).

¹⁷¹ Timothy J. Muris, Chairman, Fed. Trade Comm’n, *The Interface of Competition and Consumer Protection*, Prepared Remarks at The Fordham Corporate Law Institute’s Twenty-Ninth Annual Conference on International Antitrust Law and Policy 3 (Oct. 31, 2002), https://www.ftc.gov/sites/default/files/documents/public_statements/interface-competition-and-consumer-protection/021031fordham.pdf [<https://perma.cc/3N94-BXSV>]; Mark Armstrong, *Interactions Between Competition and Consumer Policy*, 4 COMPETITION POLY INT’L 97, 100–12 (2008).

¹⁷² See, e.g., Khan, *supra* note 2, at 716 (noting that Amazon “has evaded government scrutiny in part through fervently devoting its business strategy and rhetoric to reducing prices for consumers”).

¹⁷³ Cf. John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149, 198–99 (2015) (explaining some of the antitrust shortcomings in assessing price).

¹⁷⁴ See, e.g., Ellison & Ellison, *supra* note 22, at 432, 450 (finding evidence of behavioral overcharge in a

that even if antitrust observers were wrong about Amazon's overall low prices,¹⁷⁵ the decision not to look more closely could still be correct, from an antitrust perspective, if the high prices were solely due to consumer psychological manipulation. The deeper question for antitrust is thus whether the failure to consider consumer manipulation can obscure the identification of monopoly power. In theory, monopolies may have the ability to extract even more behavioral overcharge than is possible for firms in more competitive markets.¹⁷⁶ One reason why this might be the case is that firms in such a market may face less competitive pressure and thus be less fearful that they will lose customers by making the decision context more complex.¹⁷⁷

If that is true, excess behavioral overcharge can in some settings provide evidence of monopoly power.¹⁷⁸ This point is important for antitrust because the concept of price is central to the antitrust analysis.¹⁷⁹ For that reason, companies that offer consumers free services—like Google's search engine—or at apparently low and competitive prices—like Amazon—have confounded antitrust analysis, given antitrust's adherence to high prices as a proxy for consumer harm.¹⁸⁰

Yet without a behavioral economics lens to see how consumers make market decisions, it would be difficult to recognize higher behavioral overcharge enhanced by monopoly power. The antitrust observer might see that Amazon is offering some competitive prices

highly fragmented market with a large number of smaller competitors); Bar-Gill, *supra* note 128, at 232–34 (modeling manipulation under conditions of perfect competition). Outside of behavioral economics, scholars have made related observations about consumer protection providing independent means of addressing issues similar to antitrust. *See, e.g.*, Natasha Sarin, *What's in Your Wallet (and What Should the Law Do About It?)*, 87 U. CHI. L. REV. 553, 594 (2020) (arguing that due to the Supreme Court's rulings limiting the reach of antitrust, consumer protection can address credit card companies' anti-steering rules).

¹⁷⁵ Again, there is some basis for concluding that those, such as Lina Khan, who made pricing observations about specific historical periods in specific product categories, such as diapers, may have been correct in those narrow contexts. *See supra* Section I.C.

¹⁷⁶ Maurice Stucke's work provides, at a minimum, indirect support for this assertion, although he has focused more on how behavioral practices can increase monopoly power rather than how monopoly power can increase behavioral pricing. *See* Maurice E. Stucke, *Behavioral Antitrust and Monopolization*, 8 J. COMPETITION L. & ECON. 545, 567 (2012) (arguing that behavioral economics can help firms to maintain their monopoly power through, for instance, lock-in strategies that make it harder for customers to leave).

¹⁷⁷ Without mentioning price effects, because they were examining the context of free searches in engines like Google, Maurice Stucke and Ariel Ezrachi provide some indirect support for this point by noting that scale and network effects may allow the largest search engine to degrade quality to push users toward sponsored results, and provide the incentives to do so. *See* Maurice E. Stucke & Ariel Ezrachi, *When Competition Fails to Optimize Quality: A Look at Search Engines*, 18 YALE J.L. & TECH. 70, 88 (2016).

¹⁷⁸ The literature has several observations that are distinct from this point but potentially offer indirect support. Our analysis does not depend on the existence of personalized search results, but Oren Bar-Gill has argued that pricing misperception is a mechanism for sellers to engage in personalized pricing that can have the same distributional effects as monopoly power. Bar-Gill, *supra* note 128, at 232–34. Ramsi Woodcock observes that personalized pricing is evidence of monopoly power, but without considering behavioral economics and the potential that misperception can be used as a tool for personalized pricing. Ramsi A. Woodcock, *Personalized Pricing as Monopolization*, 51 CONN. L. REV. 311, 343 (2019). In a sense, this Article's observation that behavioral pricing can be a sign of monopoly power follows logically from these two observations if they are true.

¹⁷⁹ *See* Newman, *supra* note 173, at 197 (“The antitrust enterprise remains firmly grounded in price theory.”).

¹⁸⁰ *See id.*

among the hundreds of search results, without understanding that many consumers who would prefer those items may not choose them. This is because those items are being buried in search results, and because Amazon's decision ecosystem pushes customers to click on other, less competitively priced, offerings.¹⁸¹ The antitrust literature on Amazon does not consider that possibility.

If antitrust authorities are unable to gain detailed visibility into Amazon's prices, the FTC has the authority to take action without requiring new legislation. In 1975, the agency implemented a reporting program to collect cost and sales data from 450 of the largest manufacturing firms.¹⁸² A court upheld the FTC's authority to require the reporting of such data.¹⁸³ Thus, the FTC could regularly collect data from Amazon about behavioral overcharge even without suspicion of wrongdoing.¹⁸⁴

The broader point here is that more antitrust attention is needed to the possibility that firms, like Amazon, are able to offer competitive prices and monopoly prices simultaneously, particularly by exploiting the behavioral biases of poorly informed consumers who are less likely to shop around. This behavioral law and economics lens on Amazon thus builds on and contributes to the work of antitrust scholars who have been calling for an update to analyses of online platforms in other contexts, such as when the consumer is not directly paying money for the product (like a Facebook account or Google search).¹⁸⁵ They have also begun to consider how and whether to integrate behavioral economics into the consumer welfare analysis, especially the challenging question of how antitrust should determine consumers' preferences in light of the insights of behavioral economics.¹⁸⁶ However, that work is still nascent and the antitrust framework has yet to fully integrate the insights related to consumer manipulation in online commerce. More study is needed of the possibility that inattention to consumer manipulation weakens the antitrust analysis of monopoly power, and more broadly limits the legal framework's ability to address anticompetitive pricing.

¹⁸¹ See *supra* Part I.

¹⁸² Appeal of FTC Line of Bus. Report Litig., 595 F.2d 685, 690 (D.C. Cir. 1978) (per curiam).

¹⁸³ *Id.* at 693–96.

¹⁸⁴ See *id.*

¹⁸⁵ See, e.g., John M. Newman, *Antitrust in Digital Markets*, 72 VAND. L. REV. 1497, 1536 (2019) (exploring antitrust in the context of Zillow's pricing power); Newman, *supra* note 173, at 155, 161 (describing how Google was accused of antitrust violations "by bundling its mobile applications with its zero-price Android mobile operating system" and how a plaintiff alleged "Google anticompetitively manipulated search results" but failed to cite "authority indicating that antitrust law concerns itself with competition in the provision of *free services*.").

¹⁸⁶ Scholars have also made other insightful distinct observations about the importance of behavioral economics to monopoly power, and space constraints do not allow for summarizing all of them here. See Wright, *supra* note 33 (summarizing the tension for consumer welfare analyses raised by the implication of behavioral economics that market choices may not be a reliable indicator of consumer preferences); Amanda P. Reeves & Maurice E. Stucke, *Behavioral Antitrust*, 86 IND. L.J. 1527, 1583 (2011) (calling for the FTC to marry consumer protection issues of deception and antitrust more closely); Nathan Newman, *Search, Antitrust, and the Economics of the Control of User Data*, 31 YALE J. ON REG. 401, 446 (2014) (proposing a remedy to address Google's monopoly: "coordinated government action to determine exactly how data mining and behavioral profiling by Google strengthen its dominance and harm consumer welfare."); Avishalom Tor, *Understanding Behavioral Antitrust*, 92 TEX. L. REV. 573, 573 (2014) (arguing that "proponents and opponents of behavioral antitrust frequently and fundamentally misconstrue its methodology").

B. A Legal Architecture for Open Retail

The literature would also benefit from sustained attention to how the law might address Amazon's price manipulation. This Section draws on existing scholarly proposals aimed at broader categories of firms—mostly technology companies and retailers—and applies them to Amazon. Authorities have options under existing laws for prosecuting Amazon overcharge. Although those laws provide a path forward in the absence of new legislation, legal reforms at the intersection of both consumer law and antitrust would offer a more promising solution.

1. Existing Laws

As early as 2014, internal Amazon documents called for the company's employees to “[t]est the [b]oundaries of what is allowed by law.”¹⁸⁷ However, regulators have been slow to apply key consumer laws to the practices that Amazon uses to increase overcharge.¹⁸⁸ In other words, Amazon has been willing to test the law, but the FTC and attorneys general have not. Many different consumer laws might be brought to bear on Amazon's price manipulation. For instance, David Friedman has shown that laws prohibiting retailers from falsely claiming a discounted price are underenforced.¹⁸⁹ But the prohibition of unfair and deceptive acts (“UDAP”) is the core of consumer protection law. UDAP statutes in all fifty states, modeled after federal legislation, allow the FTC, attorneys general, and, in some cases, private individuals, to sue companies.¹⁹⁰

Although the application of UDAP specifically to Amazon price manipulation has not been established, UDAP's statutory text, case law, and history speak to the possibility of applying existing authority to Amazon's pricing practices.¹⁹¹ By way of illustration, we demonstrate in the following discussion how the FTC's UDAP authority could be applied to Amazon's pricing practices, with a focus on its search result manipulation. And a similar analysis would apply to attorneys general bringing cases against Amazon for violations of

¹⁸⁷ Aditya Kalra, *Amazon Documents Reveal Company's Secret Strategy To Dodge India's Regulators*, REUTERS (Feb. 17, 2021), https://www.reuters.com/investigates/special-report/amazon-india-operation/?utm_source=twitter&utm_medium=Social [https://perma.cc/MJ6A-6JRZ] (examining Amazon's response to Indian regulation).

¹⁸⁸ See Van Loo, *supra* note 12, at 1314.

¹⁸⁹ See David Adam Friedman, *Reconsidering Fictitious Pricing*, 100 MINN. L. REV. 921, 924–25 (2016). As an example, some of Amazon's practices may constitute violations of more specific consumer regulations, such as the prohibition of fictitious pricing. See *id.* at 922.

¹⁹⁰ See Matthew A. Edwards, *The Law, Marketing, and Behavioral Economics of Consumer Rebates*, 12 STAN. J.L. BUS. & FIN. 362, 397, 403 (2007).

¹⁹¹ See Van Loo, *supra* note 12, at 1370–73 (concluding that the FTC's unfairness authority could and should be used to act on behavioral pricing practices, including those driven by artificial intelligence, deployed by online and brick-and-mortar retailers). Lauren Willis later made an argument similar to Van Loo's that deceptive algorithmic practices meet the black-letter UDAP law for unfairness with. See Lauren E. Willis, *Deception by Design*, 34 HARV. J.L. & TECH. 115, 176–80 (2020) For a more recent and broader treatment of unfairness, see Luke Herrine, *The Folklore of Unfairness*, 96 N.Y.U. L. REV. 431, 525 (2021) (showing how the FTC's unfairness authority is potent and has laid dormant due to deregulatory pressures). (showing how the FTC's unfairness authority is potent and has laid dormant due to deregulatory pressures).

UDAP statutes, as well as other practices deployed by Amazon.¹⁹²

Enforcement targeting unfairness may have a greater chance than deception, which requires a false statement or omission of material fact.¹⁹³ Congress has defined the FTC's unfairness authority as preventing practices "likely to cause [1] substantial injury to consumers which is [2] not reasonably avoidable by consumers themselves and [3] not outweighed by countervailing benefits to consumers or to competition."¹⁹⁴ The first prong, substantial injury, can result from a "small harm to a large number of people."¹⁹⁵ Assuming that Amazon's burying and anchoring makes consumers pay more, as supported by economic theory and evidence,¹⁹⁶ those practices satisfy the first prong.

With regard to the second prong, to avoid paying higher prices, consumers would need to first spend considerable time searching through pages of results and then utilize, at a minimum, spreadsheet algebraic capabilities to determine the product's full price. They would also need to somehow de-bias themselves from the psychological effects of anchoring, and labels such as "limited time deal" and "Best Seller," as well as many other subtle psychological influences. A court may or may not find it reasonable to expect consumers to take those steps.¹⁹⁷ However, that is at least a colorable legal issue because economics generally dominates the FTC's policy interpretation of UDAP laws—with particular emphasis on efficiency.¹⁹⁸ From this perspective, it would be desirable to avoid the waste from requiring millions of consumers to spend unnecessary time shopping around. Thus, absent a countervailing economic justification (covered in the third prong), the second prong would weigh in favor of finding that the harm due to Amazon's pricing strategies is "not reasonably avoidable by consumers themselves."¹⁹⁹

At a high level, the most difficult prong is the third: Is there a procompetitive reason for Amazon's obfuscation that would outweigh the other prongs? A procompetitive reason loosely means that the practice overall contributes to making markets work better—such as by responding to consumers' interests, improving innovation, or decreasing costs.²⁰⁰ As this Article has emphasized, many of Amazon's practices could also be perceived as pro-competition and pro-consumer. Amazon is providing consumers with more choice through

¹⁹² Indeed, some states' broader application of UDAP illustrates the potential usefulness of UDAP to attorneys general with respect to Amazon. *See, e.g., Vermont v. CSA-Credit Solutions of Am., LLC*, No. 484-7-10 Wncv, Dec. and Order: Mot. for Summ. J., at 7 (Vt. Super. Ct. March 5, 2012) (interpreting state UDAP laws in a more permissive manner).

¹⁹³ *See* FTC, FTC Policy Statement on Deception (Oct. 14, 1983), available at <https://www.ftc.gov/legal-library/browse/ftc-policy-statement-deception> [<https://perma.cc/M834-M4D6>]. On the other hand, the deception prong of UDAP prohibits "a representation, omission or practice that is likely to mislead the consumer." *Id.* It provides another possibility, if that doctrine were to evolve. A case could be made, for instance, that the omission of shipping rates in the "Price: Low to High" sorting feature, and perhaps also the burying and anchoring of search results, amount to deception.

¹⁹⁴ 15 U.S.C. § 45(n) (2012).

¹⁹⁵ FTC, FTC Policy Statement on Unfairness (Dec. 17, 1980), <https://www.ftc.gov/public-statements/1980/12/ftc-policy-statement-unfairness> [<https://perma.cc/LK6T-QK3G>].

¹⁹⁶ *See supra* Section I.B.1.

¹⁹⁷ *See, e.g., Int'l Harvester Co.*, 104 F.T.C. 949 app. at 1070, 1073–74 (1984) (defining reasonably avoidable).

¹⁹⁸ *See* Herrine, *supra* note 35, at 436–38, 511–13 (criticizing the heavy emphasis on economics).

¹⁹⁹ 15 U.S.C. § 45(n) (2012).

²⁰⁰ John M. Newman, *Procompetitive Justifications in Antitrust Law*, 94 Ind. L.J. 501, 516 (2019).

a large array of sizes, colors, financing options, subscription capabilities, and other features for each product; information about best-selling items; and the convenience of subscription. This might suggest an uncertain cost-benefit analysis, on the third prong, of whether the competition harms of Amazon's practices outweigh their benefits.

This Article has shown, however, that these practices do not necessarily lead consumers to make optimal choices and find the best deals, particularly due to product complexity and cognitive overload. It would be especially difficult to justify the burying and anchoring of search results on pro-competitive grounds. And there are other practices that more explicitly undermine the ability of consumers to find the most competitive price, such as the exclusion of shipping costs from the "Price: Low to High" sorting feature.

Caselaw provides some support for seeing pricing obfuscation as a UDAP violation under the unfairness test. In a private California suit, plaintiffs accused a large oil company of purchasing fuel at sixty degrees Fahrenheit and selling it at seventy degrees, so the consumer would receive less fuel.²⁰¹ The plaintiffs argued that such practices meant "consumers are unable to determine the actual price of motor fuel or to compare prices between retailers."²⁰² The court allowed the claim to proceed under a state UDAP statute that uses a similar test and definition of "unfairness" as the federal statute.²⁰³

Further support comes from consumer finance. In the early 2000s, financial institutions commonly steered borrowers away from low-interest loans toward higher-interest loans.²⁰⁴ The motive for that steering—like Amazon's motive to bury and frame search results—was that higher-interest loans earn greater profits.²⁰⁵ Beginning around 2010, individuals began to sue banks and other entities for that practice, using UDAP authority.²⁰⁶ Judges have made it clear that such profit-oriented steering is a valid target for UDAP authority.²⁰⁷

Thus, to address Amazon's overcharge, the FTC or attorneys general could try to more aggressively bring UDAP enforcement actions. As a historical matter, Congress intended unfairness authority to adapt with markets on an "incremental, evolutionary basis."²⁰⁸ Moreover, when the FTC has had the political will to assert the statute's full authority—most notably, in the 1960s and 1970s—UDAP has offered a powerful tool to fill gaps in existing laws when businesses harmed consumers.²⁰⁹ Thus, there is some potential for the FTC or

²⁰¹ Klein v. Chevron U.S.A., Inc., 202 Cal. App. 4th 1342, 1348 (2012).

²⁰² *Id.*

²⁰³ *Id.* at 1353, 1389; see Cal. Bus. & Prof. Code § 17200 (2023-24); 15 U.S.C. §45(a) (2012).

²⁰⁴ See Kathleen C. Engel & Patricia A. McCoy, *A Tale of Three Markets: The Law and Economics of Predatory Lending*, 80 TEX. L. REV. 1255, 1371–72 (2002) (describing how brokers directed home-buyers to take out loans with very high interest).

²⁰⁵ See *id.* at 1287 (explaining motivations to push consumers toward higher commission loans).

²⁰⁶ See, e.g., Barriga v. JP Morgan Chase Bank, N.A., No. C 09-00885, 2010 U.S. Dist. LEXIS 36679, at *9 (N.D. Cal. 2010).

²⁰⁷ See *id.* at *9–10; see also Nat'l Ass'n of Mortg. Brokers v. Bd. of Governors of Fed. Rsv. Sys., 773 F. Supp. 2d 151, 156, 172 (D.D.C. 2011) (finding that the Federal Reserve has authority under UDAP to prohibit banks from steering borrowers to higher-priced loans); 12 C.F.R. § 226.36 (2022) ("[A] loan originator shall not direct or 'steer' a consumer to consummate a transaction based on the fact that the originator will receive greater compensation . . .").

²⁰⁸ Am. Fin. Servs. Ass'n v. FTC, 767 F.2d 957, 982 (D.C. Cir. 1985).

²⁰⁹ See Rory Van Loo, *The Public Stakes of Consumer Law: The Environment, the Economy, Health, Disinformation, and Beyond*, 107 Minn. L. Rev. 2039, 2041 (2023) (using the examples of a "\$5 billion fine against Facebook for

attorneys general to reach at least some of Amazon's behavioral pricing practices.

At the same time, there are fundamental limits to the potential for the FTC, under UDAP particularly, to address practices that influence overcharge. UDAP laws applied to such practices are unproven, and even if successful, the statute is more oriented toward prohibiting acts. Consequently, UDAP cannot be used to compel Amazon to take affirmative actions—such as providing search result sorting by unit price—except perhaps by settlement order. Moreover, the FTC faces well-known resource and authority limitations.²¹⁰ Finally, many of the practices described in Part I may not be practical to individually litigate because the problem is more about the collective effect of hundreds of practices. In light of the limitations discussed in this section, a more comprehensive approach to remedying the potential harms of Amazon's pricing practices involves legal reform.

2. Legal Reforms

Among the many possible new laws that would improve oversight of Amazon, it is worth considering both reforms to regulatory structure as well as substantive legal reforms. On the regulatory structure side, more meaningful regulatory monitoring and oversight of Amazon could help. In most industries, ranging from oil to banking, regulators have routine access to nonpublic information in order to determine whether or not a legal violation has occurred.²¹¹ Indeed, Amazon is already subject to inspections on the labor side by the Occupational Safety and Health Administration (“OSHA”).²¹² And as Jean Braucher and Angela Littwin have shown, this agency oversight is now seen as an important tool of consumer protection.²¹³ In a similar way, drawing on the work of various tech scholars, Amazon's search algorithms and related strategies could be subject to occasional inspections.²¹⁴ An obligation, established in law, for Amazon to routinely provide information for inspection by a regulatory agency would be beneficial in part because Amazon has shown itself willing to invest its considerable resources in erecting barriers to block authorities from obtaining

privacy violations and a \$3 billion enforcement action against Wells Fargo for creating millions of fake customer accounts” to show that UDAP has “provided the authority for some of the largest legal actions against companies in U.S. history.”)

²¹⁰ *Id.* at 2081–2083 (summarizing how Congress has placed limits on exercise of FTC authority and allowed its resources to stagnate even as the industries the agency regulates have expanded substantially).

²¹¹ Rory Van Loo, *Regulatory Monitors: Policing Firms in the Compliance Era*, 119 COLUM. L. REV. 369, 371–72 (2019).

²¹² See, e.g., *Inspection Detail*, OSHA, https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1206314.015 [<https://perma.cc/EU2U-CMP7>].

²¹³ Jean Braucher & Angela Littwin, *Examination as a Method of Consumer Protection*, 58 ARIZ. L. REV. 33, 36–41 (2016).

²¹⁴ This idea would merge elements of existing proposals for overseeing technology platforms with those for overseeing large retailers. See Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information, and Power*, 117 COLUM. L. REV. 1623, 1682–85 (2017) (exploring the possibility of agencies detecting harms in the sharing economy); Julie E. Cohen, *The Regulatory State in the Information Age*, 17 THEORETICAL INQUIRIES L. 369, 372–73 (2016) (“[P]olicymakers must devise ways of enabling regulators to evaluate algorithmically-embedded controls”); Frank Pasquale, *Beyond Innovation and Competition: The Need for Qualified Transparency in Internet Intermediaries*, 104 NW. U. L. REV. 105, 169–71 (2010) (observing the need for monitoring search engines); Van Loo, *supra* note 12, at 1382 (proposing that the FTC monitor big retailers such as Walmart).

information, specifically in the context of antitrust investigations.²¹⁵ It thus may be more efficient to establish a baseline regulatory authority to collect information from Amazon, and other large online marketplaces, rather than requiring resource-strapped regulators to fight to even know what is happening.²¹⁶ The information collected would be used to determine that which is impossible to know now with any great certainty: the extent and impact of Amazon's behavioral pricing. Note that such information could be useful for both antitrust and consumer protection authorities.²¹⁷ Although the FTC could do significantly more than it currently does to collect information about Amazon's behavioral pricing practices, more robust monitoring authority that would reach the consumer protection side would require new laws.²¹⁸

Such information could help inform legal changes that might address consumer manipulation either indirectly or directly. Laws could indirectly reduce Amazon's overcharge by mandating better information disclosure to consumers or third-party digital helpers, which would then provide advice to overcome consumers' behavioral biases and cognitive limitations in finding the best deals. More directly, laws can prohibit certain pricing practices that are most liable to manipulate consumers into making suboptimal decisions. These proposals should be seen as complements rather than substitutes. We examine them in turn.

(i) Mandatory Data-sharing and Pro-consumer Digital Tools

If policymakers want to intervene, one of the most attractive options is forcing information sharing, or disclosures, that target Amazon's behavioral pricing. In theory, disclosures would correct the informational asymmetry that contributes to behavioral manipulation of less-savvy consumers, while still leaving companies with considerable freedom to do what they want with respect to their pricing strategies. Information disclosure laws may be targeted at two main groups: consumers and third-party helpers. An example of a consumer-focused information law is one mandating that Amazon and other large online retailers allow consumers to sort results by unit price.²¹⁹ Since research suggests that mandated unit price labels have saved consumers money in the grocery store, such a law is warranted for online retailers as well.²²⁰

²¹⁵ Dana Mattioli, *Amazon Flagged to Justice Department for Possible Criminal Obstruction of Congress*, WALL ST. J. (Mar. 9, 2022), <https://www.wsj.com/articles/amazon-flagged-to-justice-department-for-possible-criminal-obstruction-of-congress-11646827200> [https://perma.cc/C9UN-5KBP].

²¹⁶ This idea loosely relates to a proposal in the literature for supervising all large retailers. Van Loo, *supra* note 12, at 1383–86 (“[T]he FTC might consider developing a supervision program loosely modeled after that in consumer finance protection.”).

²¹⁷ This follows from the possibility that behavioral pricing is used as a vehicle for charging monopoly prices. *See supra* Section II.A.

²¹⁸ *See generally* Rory Van Loo, *The Missing Regulatory State: Monitoring Businesses in an Age of Surveillance*, 72 *Vand. L. Rev.* 1563, 1617–1623 (2019) (arguing that the FTC has more statutory authority than it exercises to collect information on problematic algorithmic practices but that more authority could facilitate such collection).

²¹⁹ Retailers would also need to ensure that those unit prices are accurate, consistent, and complete.

²²⁰ *See* José Luis Méndez García de Paredes, Ronald Sebastián Angola Cárdenas & Dayana Lisseth Sánchez Garcés, *Unit Price Information on the Reference Price Formation*, 22 *J. PROD. & BRAND MGMT.* 413, 424 (2013) (sharing research on the effect of unit prices); Van Loo, *supra* note 12, at 1389 (making a similar proposal for large online retailers).

However, information disclosure interventions targeted at consumers face considerable challenges. There are limits to how much the informational complexity in retail goods marketplaces can be summarized or simplified by any law. Even well-designed disclosures for online shopping would depend on consumers somehow overcoming their cognitive limitations to process considerable information about various product and price permutations, “Best Seller” labels, Prime membership, subscriptions, and so on.²²¹ Amazon has also shown great nimbleness in adjusting practices to new laws, which risks leaving regulators a step behind.²²²

Consequently, disclosures aimed at third-party digital companies offer greater promise. Although related proposals for such digital intermediaries exist in the literature,²²³ they have not been tailored to the specific problems created by Amazon. Nor have prior treatments recognized that this is a policy intervention whose normative foundations and design benefit from drawing on principles of both consumer law disclosures and antitrust interoperability.²²⁴

To illustrate the potential of such a tool by way of analogy, map programs on smartphones help us to reach our desired destinations. Yet we still do not have powerful apps to help consumers navigate the retail landscape and choose the best deals. One could imagine apps that would know our preferences well.²²⁵ They would collect all available information on prices and products, and tell us which online and offline stores offer the best deals—including the time spent, gas used, and shipping paid for each option. The app might even execute the transaction for us, after we select our preference out of several options identified by the app. It could also analyze our “Subscribe & Save” account to let us know when the price has increased too much, such that we should unsubscribe. Such a tool would

²²¹ This follows from the complexity outlined above for shopping at Amazon, and also what is known about the limits of disclosures. *See supra* Part I; Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 159 U. PA. L. REV. 647, 746–47 (2011) (concluding that disclosures aimed at individual consumers have limits compared to those targeted at third-party experts); Bubb & Pildes, *supra* note 10, at 1596–97 (arguing that choice-preserving regulations are problematic precisely because they preserve choice).

²²² *See* Kalra, *supra* note 187 (examining response to regulation in India).

²²³ *Cf.* Ben-Shahar & Schneider, *supra* note 221, at 746–48 (concluding that disclosures targeted at third-party experts, such as online websites, hold far more promise than those targeted at people); Bar-Gill & Stone, *supra* note 53, at 109 (mentioning the possibility of digital disclosures); Van Loo, *supra* note 12, at 1351–53 (proposing digital helpers that would have access to brick-and-mortar stores’ pricing and product information). However, there is a countervailing concern that digital-consumer-helping solutions could generate deadweight efficiency losses by spurring a technological arms race between Amazon and its consumers. *See, e.g.*, Nikita Aggarwal, *The Norms of Algorithmic Credit Scoring*, 80 CAMBRIDGE L.J. 42, 64 (2021); Michal S. Gal & Niva Elkin-Koren, *Algorithmic Consumers*, 30 HARV. J.L. & TECH. 309, 329 (2016); Wagner & Eidenmüller, *supra* note x, at 588–89.

²²⁴ *See, e.g.*, Bar-Gill & Stone, *supra* note 53, at 99–103 (focusing on the consumer and behavioral economics dimensions of disclosures targeting third parties); Herbert Hovenkamp, *Antitrust Interoperability Remedies*, 123 COLUM. L. REV. F. 1, 29–31 (2023), *available at* <https://ssrn.com/abstract=4035879> [<https://perma.cc/PFN3-NFDC>] (discussing interoperability remedies for online platforms, including Amazon, without reference to behavioral economics or consumer law). These differences influence the design of the proposal. For instance, Hovenkamp’s antitrust discussion of Amazon interoperability is different from this Article’s in that Hovenkamp is not envisioning third-party tools that help consumers to choose, and is instead focused on interoperability that helps third-party sellers access the Amazon marketplace. *See id.*

²²⁵ This would require consumers to provide access to their transactional history. *See* Gal & Elkin-Koren, *supra* note 223.

let Amazon do what it wants—from Prime membership to burying results in the seventeenth slot²²⁶—while giving consumers a better chance to locate the best deals for them even in the face of manipulation and complexity.

A number of entities have taken steps toward that goal but have ultimately come up short.²²⁷ One of the most widely used consumer tools, Honey, operates as a plug-in for consumers' web browsers.²²⁸ Honey has recently taken steps toward alerting consumers to better deals outside of Amazon, although its functionality remains limited.²²⁹ For example, it does not calculate and compare the unit prices of items in Amazon search results.²³⁰ More importantly, it faces difficulties in comparing offerings across marketplaces.²³¹

Why has the market consistently failed to provide consumers with a powerful price and product comparison tool? The short answer is difficulties in accessing data. As explained above, a marketplace of fully informed and rational consumers is considerably more competitive, and thus less profitable.²³² Consequently, Amazon has fought to keep independent price comparison tools from accessing even the basic information that it publishes openly on the Internet. Amazon can quickly detect bots that try to collect information and use technological means to block them.²³³ It has also blocked access by leveraging the law, such as by arguing that collecting data from its marketplace is a violation of its terms and conditions.²³⁴ Judges also allowed large companies like Amazon to misapply statutes to argue that collecting price information amounts to hacking, although such legal strategies are becoming less reliable.²³⁵ Finally, even if Amazon did not actively block third-party tools, an emerging consensus is that for cost-effective interoperability, third parties require direct access to the data feeds of companies like Amazon, rather than relying on

²²⁶ See *supra* Section I.B.2.

²²⁷ For an example of a tool attempting to address this problem, see Ian Yeoman, *Playing with Price*, 13 J. REVENUE & PRICING MGMT. 508, 508–09 (2014) (describing Hukkster).

²²⁸ Jeremy Laukkonen, *What Is the Honey App, and Can It Really Save You Money?*, LIFEWIRE (Aug. 12, 2020), <https://www.lifewire.com/honey-app-4171926> [<https://perma.cc/9KAR-9M26>] (describing how Honey works).

²²⁹ *Amazon Price Comparison*, Honey.com (March 31, 2023), <https://help.joinhoney.com/article/46-can-i-use-honey-on-amazon#:~:text=In%20the%20US%2C%20Honey%20compares,size%2C%20color%2C%20and%20feature> s.

²³⁰ *Id.*

²³¹ *Id.*

²³² Gabaix & Laibson, *supra* note 10, at 531.

²³³ See Bhagyeshwari Chauhan, *5 Major Challenges That Make Amazon Data Scraping Painful*, DATAHUT, <https://blog.datahut.co/challenges-that-make-amazon-data-scraping-so-painful> [<https://perma.cc/YUV9-HKAE>] (explaining how Amazon can detect and block scraping bots).

²³⁴ See Bradley Williams, *Preventing Unintended Internet Discrimination: An Analysis of the Computer Fraud and Abuse Act for Algorithmic Racial Steering*, 2018 U. ILL. L. REV. 847, 869 (stating that Amazon “explicitly bans data mining in its terms of use”).

²³⁵ One avenue for potentially blocking such data is through the Computer Fraud and Abuse Act (CFAA). 18 U.S.C. § 1030(a)(2)(C) (2012) (banning unauthorized access to “information from any protected computer”); Jamie L. Williams, *Automation is Not “Hacking”: Why Courts Must Reject Attempts to Use the CFAA as an Anti-Competitive Sword*, 24 B.U.J. SCI. & TECH. L. 416, 419–21 (2018) (summarizing CFAA use against scraping); Van Buren v. United States, 141 S. Ct. 1648, 1652 (2021) (narrowing the scope of “unauthorized access” under the CFAA).

collecting data by visiting hundreds of thousands of product pages.²³⁶

To avoid fighting Amazon, either technically or legally, third-party price comparison tools have sought to strike deals with Amazon to obtain real-time access to Amazon's price and product data. However, such arrangements come with major limitations. One startup, PriceZombie, sought to do just that by allowing consumers to compare prices for free across all major retailers, including Amazon.²³⁷ It struck a deal with Amazon for access, but after quickly growing its user base to over 60,000 active users, it suddenly found its information access privileges revoked. Amazon said that the company had violated its terms of agreement by reporting Amazon price histories that were over twenty-four hours old—in other words, they were giving consumers too much information. PriceZombie was soon forced to close.²³⁸ This example suggests that third-party apps that depend on Amazon's cooperation have less freedom to alert consumers to better deals elsewhere, as doing so is likely to cause Amazon to withhold data access.²³⁹

Thus, without legal reform, Amazon price comparison tools are only likely to succeed if they can afford to collect such data and fight Amazon in court, if necessary. Accordingly, large companies have begun to show some progress with their price comparison engines, such as Capital One Shopping and Google Shopping.²⁴⁰

Laws can help that process along. The least intrusive option would simply be to pass legislation allowing companies to use web scraping bots to freely collect price and product information that is already available on the Internet—without fear that Amazon will retaliate. Two additional layers would require Amazon and other online retailers to take affirmative steps, each of which has been mandated in other contexts, such as open banking.²⁴¹

The first would mandate online retailers to provide third-party price comparison tools access to information feeds, known as application programming interfaces (APIs).²⁴² When Amazon or its merchants post new products or update prices, that information goes into Amazon's private computer system, which then produces the outputs consumers see on the product pages. By requiring Amazon and other retailers to share those internal updates with third parties, directly and automatically, comparison tools could more easily and cost-effectively access price and product data. API access would prove significantly more efficient than continually visiting and scanning millions of web pages to locate the various product features, ratings, and price information.²⁴³

A second, more extensive information-forcing rule would also mandate third-party

²³⁶ Cf. Dan Awrey & Joshua Macey, *The Promise and Perils of Open Finance*, 40 YALE J. REG. 1, 7-12 (2023) (exploring interoperability in the context of open banking); Thomas E. Kadri, *Digital Gatekeepers*, 99 TEX. L. REV. 951, 993 (2021) (broadly calling for interoperability mandates).

²³⁷ @PriceZombie, TWITTER, (Oct. 17, 2016), <https://twitter.com/PriceZombie> (tweeting news of its shutdown following the company's ban from Amazon).

²³⁸ *Id.*

²³⁹ On the challenges of third-party apps when they must cooperate with powerful sellers, see Rory Van Loo, *Digital Market Perfection*, 117 MICH. L. REV. 815, 837 (2019).

²⁴⁰ See, e.g., GOOGLE SHOPPING, <https://shopping.google.com/> [<https://perma.cc/52AK-WPHY>]; C. Scott Hemphill, *Disruptive Incumbents: Platform Competition in an Age of Machine Learning*, 119 COLUM. L. REV. 1973, 1993 (2019) (“Google has challenged Amazon in shopping starts.”).

²⁴¹ See Awrey & Macey, *supra* note 236, at 3.

²⁴² See *id.* at 27–29.

²⁴³ See *id.*

access to a user's account data whenever that user requests it. Most importantly, that data would include a consumer's shopping history, which helps the third-party tool to better understand the consumer's tastes and preferences.

Some might be understandably concerned about the privacy implications of such a rule.²⁴⁴ However, this rule is pro-privacy in the sense of giving consumers better control over their personal data,²⁴⁵ and potentially reducing harm to consumers through manipulation, which is increasingly important to the rationale of privacy protection.²⁴⁶ Lawmakers should not allow Amazon to use such information to make consumers pay more, while allowing privacy concerns to block other companies from using that same information to help consumers pay less.²⁴⁷

Moreover, these or similar information-forcing laws are already in place elsewhere. The European General Data Protection Regulation's "data portability" rules mandate companies to share personal data with consumers when requested.²⁴⁸ The U.K. similarly requires rewards programs to give consumers digitally accessible spending data.²⁴⁹ Many consumers have reportedly used these tools to access account information for a variety of third-party digital tools that help with everything from dietary advice to household budgeting.²⁵⁰

One example of the potential for such laws comes from Israel. In 2015, the legislature passed a law requiring brick-and-mortar retailers to make their price and product information available in digital form.²⁵¹ Price-comparison websites used the data to inform consumers,

²⁴⁴ See Bar-Gill, *supra* note 128 (discussing widespread data use for price discrimination); Ariana Aboulafia, Greg Fritzius, Tessa Mears & Macy Nix, *The Price of Prime—Consumer Privacy in the Age of Amazon*, 42 MITCHELL HAMLINE L.J. PUB. POL'Y & PRAC. 138, 139–40 (2020) (outlining threats to privacy created by Amazon). The consumer typically consents by agreeing to the terms in the fine print, but without necessarily understanding what will happen with the data. See *id.* at 139–40, 157–58.

²⁴⁵ See, e.g., Charles Fried, *Privacy*, 77 YALE L.J. 475, 482 (1968) (defining privacy as "the control we have over information about ourselves").

²⁴⁶ See, e.g., Woodrow Hartzog, *What Is Privacy? That's the Wrong Question*, 88 U. CHI. L. REV. 1677, 1681, 1683 (2021) (cautioning against creating rigid definitions of "privacy" and instead focusing on problem-solving, such as how few privacy rules target "protecting individuals from harassment and manipulation"). There are ways to ensure this happens under existing laws or by including in the legislation an information fiduciary concept, which has yet to be applied to behavioral pricing practices. See Jack Balkin, *Information Fiduciaries and the First Amendment*, 49 U.C. DAVIS L. REV. 1183, 1209 (2016) ("An information fiduciary is a person or business who, because of their relationship with another, has taken on special duties with respect to the information they obtain in the course of the relationship."). But see Lina Khan & David Pozen, *A Skeptical View of Information Fiduciaries*, 133 HARV. L. REV. 497, 498, 538–40 (2019) (explaining alternatives under existing laws and explaining the limits of the information fiduciary concept).

²⁴⁷ These issues are beyond the scope of this project, and have already been extensively explored in the literature, albeit mostly outside of goods. See, e.g., Van Loo, *Rise of the Digital Regulator*, *supra* note 15 (explaining the promise and challenges of digital intermediaries that help consumers analyze products).

²⁴⁸ Regulation (EU) 2016/679, of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation), 2016 O.J. (L119) Art. 20, ¶ 1.

²⁴⁹ Richard H. Thaler & Will Tucker, *Smarter Information, Smarter Consumers*, HARV. BUS. REV. (Jan.–Feb. 2013), <https://hbr.org/2013/01/smarter-information-smarter-consumers> [<https://perma.cc/ES3L-E7E8>].

²⁵⁰ *Id.*

²⁵¹ Itai Ater & Oren Rigbi, *The Effects of Mandatory Disclosure of Supermarket Prices* 3 (Oct. 2, 2017) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3046703 [<https://perma.cc/2FQ2-HURN>].

and average prices dropped an estimated four to five percent within two years.²⁵²

Note that these savings are average market-wide declines, which underscores how the benefits of price comparison tools would extend beyond Amazon purchases. To illustrate the implications, at the five-percent level of savings, information-forcing laws would save a low-income family at the poverty line hundreds of dollars annually.²⁵³ And for struggling middle-class families, that level of savings would be in the thousands of dollars annually.²⁵⁴ Across the retail goods economy, five percent savings would amount to over a hundred billion dollars annually.²⁵⁵

It is always possible that a price comparison tool will attain success on its own. However, the track record is not promising, and consumer welfare suffers in the meantime. Markets depend extensively on consumer laws—such as bans on false advertising—to function well. Lawmakers have an important role to play in leveling the commercial playing field by empowering consumer tools with access to price and product comparison data.

(ii) Prohibiting Manipulative Pricing Practices

A second option is to prohibit the practices that bring overcharge. One approach would be to forbid specific practices that produce overcharge and enshrine these in statute. For example, rules might prohibit listing prices without factoring in shipping, burying the lowest-priced items beyond the first few results, and anchoring search results with higher-price reference points.

Models can be found in other fields in which similar pricing practices are specifically restricted by law. Price manipulation (“market manipulation”) is generally prohibited in pharmaceuticals and financial trading—so firms cannot, for instance, purchase a large volume of stocks with the intent of forcing the price up and then selling.²⁵⁶ Under its UDAP authority, the Federal Reserve prohibits such practices for mortgages.²⁵⁷ Its rationale for that prohibition is instructive for its parallels to Amazon. After conducting consumer surveys, the Federal Reserve concluded that “large numbers of consumers are simply not aware” that

²⁵² *Id.*

²⁵³ Calculated as 5% of estimated spending for the lowest 20% of households by income, with the poverty line being about \$25,000 for a family of four and \$30,000 for a family of five. See U.S. BUREAU OF LAB. STATS., CONSUMER EXPENDITURES IN 2018 (2019); *National Data: National Income and Product Accounts Tables*, U.S. DEPT. COM. BUREAU ECON. ANALYSIS, <https://apps.bea.gov/iTable/?reqid=19&step=2&isuri=1&categories=underlying> (chose the “NIPA Tables” menu; select “Personal Consumption Expenditures”; then open Table 2.4.5U).

²⁵⁴ *Id.* at 40 tbl.3.

²⁵⁵ Retail spending is almost four trillion dollars annually. *National Data: National Income and Product Accounts Tables*, U.S. DEPARTMENT COM. BUREAU ECON. ANALYSIS, <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1>.

²⁵⁶ See, e.g., Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Pub. L. No. 108-173, §§ 1111-1118, 117 Stat. 2066, 2461-64 (codified as amended at 21 U.S.C. § 355 (2012)) (prohibiting price manipulation for prescription drugs); Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *Stock Market Manipulation and Its Regulation*, 35 YALE J. ON REG. 67, 74–76 (2018) (discussing price manipulation in stock markets).

²⁵⁷ 12 C.F.R. § 226.5 (2020).

brokers have “an incentive to provide consumers loans with higher interest rates.”²⁵⁸

Of course, the case for regulating Amazon does not rest on what happens in other sectors, such as finance.²⁵⁹ Laws already protect similar economic harms by regulating retailers, such as unit pricing requirements in stores and prohibitions on fictitious pricing.²⁶⁰ Nonetheless, as the “culture of derivatives, hedges and swaps moves from Wall Street” to online commerce,²⁶¹ the laws protecting individuals in those other areas can guide laws that may help regulate Amazon and its competitors.

However, there are limitations to the specific prohibitions approach. These are well analyzed in the literature on legal rules versus principles, or standards.²⁶² Additional challenges arise in the context of online retail and personalized pricing because, as already mentioned, Amazon continually evolves its pricing practices and adapts quickly to changes in the law.²⁶³ To have any chance of keeping up with Amazon, the law cannot rely on Congress alone for updates.

In light of these challenges, an alternative legislative approach becomes more appealing: passing a general anti-overcharge statute. The statute could emphasize price transparency,²⁶⁴ and give the FTC the ability to write transparency rules pursuant to that authority. For instance, the FTC could use that authority to require Amazon and other large online retailers to furnish consumers with a fuller lifetime price for a product, including the estimated add-on costs from, say, ink, batteries, or replacement toothbrush heads. The FTC might also write the kind of information-forcing rules discussed above, requiring data-sharing with third parties or the ability to sort search results by unit price.

To return to where this Article began, consumer law interventions can serve as either a complement or alternative to existing proposals for regulating Amazon, particularly antitrust proposals. A particularly high-profile proposal involves breaking up Amazon by splitting its marketplace from its role as a merchant selling its own goods.²⁶⁵ Another would treat Amazon as a utility, with heavy oversight similar to that for railroad, electricity, milk, telecommunications, and water companies.²⁶⁶ Yet even if either of these approaches were to

²⁵⁸ 75 Fed. Reg. 58509, 58511 (Sept. 24, 2010). The Federal Reserve went on to observe that as a result of that faith in brokers, “consumers may be less likely to take steps to protect their interests when dealing with brokers.” Ultimately, the Federal Reserve reasoned that these dynamics undermined competition. *Id.*

²⁵⁹ Note that while the stakes of loans may be higher for a particular household, the aggregate harms across the retail sector are greater, since retail goods comprise a considerably larger industry. See U.S. DEP’T COM., *supra* note 253.

²⁶⁰ See Friedman, *supra* 207 at 922.

²⁶¹ Yeoman, *supra* note 227 **Error! Bookmark not defined.**, at 508.

²⁶² See generally, e.g., Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685 (1976) (discussing the benefits and drawbacks of legal rules and principles); Kathleen M. Sullivan, *The Justices of Rules and Standards*, 106 HARV. L. REV. 22, 57 (1992) (summarizing “the rules and standards debate in a nutshell”).

²⁶³ See Kalra, *supra* note 187.

²⁶⁴ Cf. Saul Levmore & Frank Fagain, *The End of Bargaining in the Digital Age*, 103 CORNELL L. REV. 1469, 1471 (2018) (“[L]aw might require disclosures about the prices of completed sales in order to save the resources buyers would expend to discover information already known to the seller.”).

²⁶⁵ See Khan, *supra* note 125, at 1091.

²⁶⁶ See K. Sabeel Rahman, *The New Utilities: Private Power, Social Infrastructure, and the Revival of the Public Utility Concept*, 39 CARDOZO L. REV. 1621, 1675 (2018) (“This infrastructural power [of Amazon] can be restrained by applying . . . public utility strategies . . .”).

be adopted, consumer law would still have an important complementary role to play in regulating Amazon's overcharge.

CONCLUSION

By synthesizing new and existing empirics, this Article has shown that Amazon's prices are not as competitive as long assumed. By burying the best deals, framing high-priced options as bargains, and adding considerable complexity to retail shopping, Amazon promotes widespread consumer misperception. Extracting more money per purchase hurts consumers. Making it harder to find the best deals means that small businesses will have a harder time competing on the merits even if they offer a better price or product.

State attorneys general and the FTC might have success applying existing laws to hold Amazon accountable for some of its behavioral pricing practices, such as steering consumers toward more expensive products and fabricating "discounts" off list prices. A new anti-overcharge statute would further help to clarify the FTC's authority, and more importantly allow for rulemaking that could greatly increase price transparency. But in the digital era, some of the most important legal solutions rely not on protecting consumers in the courthouse but promoting third parties in the marketplace. At the very least, the law can arm consumers' tech allies with algorithmic sophistication comparable to big tech platforms, like Amazon.

Although those specific reforms have potential value, the case of Amazon reveals something larger. Scholarship focusing on Amazon's pricing has sought to reform antitrust to reconcile the tension between Amazon's suspected exercise of monopoly power and low prices. But monopoly power is not the only mechanism for Amazon to charge higher prices. Amazon can manipulate consumer behavior to charge higher prices and extract higher rents from consumers, even without maintaining and exercising monopoly power. Yet consumer manipulation is often overlooked, like the area of law—consumer law—within which it resides. More attention is needed to whether that omission weakens antitrust by causing it to miss important dimensions of price.

Laws improving consumer perception lack the narrative appeal of breaking up big tech. But a dollar saved from avoiding monopoly is the same as a dollar saved from avoiding manipulation. Whether there are few or many online gatekeepers, they would ideally offer not just convenience but a new era of open retail responsive to the best interests of the consumers they serve.

APPENDIX – DATA AND METHODOLOGY

In this study, we use a dataset consisting of 100 first-page search results, and approximately 4800 items in total, from Amazon.com. To create this dataset, we constructed a list of search terms from the list of Amazon Basics New Arrivals, which includes a wide range of product categories sold on Amazon.com.²⁶⁷ We sorted these items randomly. In order to optimize for both specificity and comparability of search results, we edited and curated these terms for length, so that all terms were a minimum of three and a maximum of four words long, and to remove fillers (prepositions, articles, etc.). To illustrate, the list of Amazon Basics products includes an item with the following headline description: “Amazon Basics 2 ply paper towel – Flex Sheets – 12 value rolls (previously solimo).” Since this description exceeds our condition on word length, we amended it to “2 ply paper towel.”

Using a method often applied by legal scholars in other contexts,²⁶⁸ data collection was carried out by four research assistants (“coders”) using the Amazon.com desktop interface in 2022. Data collection proceeded in two phases. In the first phase, the authors and coders reviewed a pilot sample of twenty search results to develop a codebook for content analysis, using the first twenty search terms from the randomized search term list. The pilot data was open coded to establish a set of initial codes. We first reviewed the pilot data independently and then collectively met to discuss, combine, and reconcile codes.²⁶⁹ In the second phase, we collected a larger sample of search results using the same method.

We focused on features that were most relevant for studying four practices of interest: anchoring, burying, complexifying, and self-preferencing. The data was coded for multiple features, including: (1) price (unit, reference, and list prices); (2) advertising (both third-party “sponsored” ads and Amazon’s own “featured brands”); (3) ratings and number of reviews.

To reduce potential algorithmic bias and to control to the extent possible for variables such as location, browsing history, and browser type, which are known to influence Amazon search results,²⁷⁰ we set up new non-Prime Amazon accounts with delivery addresses in the same area (Boston, MA), used the same Virtual Private Network for all coders, and collected

²⁶⁷ See AMAZON BASICS, <https://amzn.to/3q9rAhj> [<https://perma.cc/5PPV-E2XR>].

²⁶⁸ See, e.g., Re, *supra* note 73.

²⁶⁹ Nora McDonald, Sarita Schoenebeck & Andrea Forte, *Reliability and Inter-rater Reliability in Qualitative Research: Norms and Guidelines for CSCW and HCI Practice*, PROC. ACM ON HUM.-COMPUT. INTERACTION, vol. 3, art. 72, Nov. 2019, at 1, 3.

²⁷⁰ See e.g., Martin Feuz, Matthew Fuller & Felix Stalder, *Personal Web Searching in the Age of Semantic Capitalism: Diagnosing the Mechanisms of Personalisation*, FIRST MONDAY (2011), <https://firstmonday.org/article/view/3344/2766> [<https://perma.cc/XZ83-XSQQ>] (studying personalization of Google search results and interpreting empirical results to show that “Google does not only rely on a user’s personal semantic history, but that it extrapolates from what it knows about a person to his or her association with statistical group profiles that Google has built up over time”); Amit Singhal, *Some Thoughts on Personalization*, GOOGLE INSIDE SEARCH (Nov. 23, 2011), <https://search.googleblog.com/2011/11/some-thoughts-on-personalization.html> [<https://perma.cc/AZ3C-QMEK>] (describing how Google accounts for language, location, search history, and social network connections in personalizing results); Aniko Hannak, Gary Soeller, David Lazer, Alan Mislove & Christo Wilson, *Measuring Price Discrimination and Steering on E-commerce Web Sites*, PROC. 2014 CONF. ON INTERNET MEASUREMENT CONF., at 317 (2014) (discovering “cases of sites altering results based on the user’s OS/browser, account on the site, and history of clicked/purchased products”).

the data in a short time span of one week.²⁷¹ To limit scope, we reviewed only the first page of search results.

We excluded search results where the listed items were largely irrelevant to the search term or highly incomparable, rendering product comparison meaningless (this was the case for twenty-one search results). These inclusion criteria were developed through the initial pilot coding. For example, a search for “aa 3-volt lithium batteries” yielded a mixture of batteries of different sizes, voltage, and type (lithium and alkaline). This search was excluded for reasons of both relevance and comparability. Where a particular item in the search results was irrelevant, but the search results overall were mostly relevant, we compared relevant products only. For example, a search for “kid’s dinosaur decorative pillow” yielded mostly dinosaur pillows, but also included a few results for stuffed dinosaur toys, which are irrelevant to the search term and therefore not included in the comparison.

For each search result, we ascertained, with an eye toward budget-conscious consumers, (1) the best deal on the first page of search results; (2) whether the best deal was in the first four headline items; (3) whether the best deal was an ad or non-ad item; and (4) whether a better deal could be found by scrolling past the headline items. In order to minimize the level of qualitative judgment required, we defined the “best deal” specifically and narrowly, as set out below. To test intercoder reliability, the authors met with the coders to test the definition on a random subsample of ten search results.²⁷² This exercise was conducted using screenshots of selected search results.²⁷³

For the purposes of this study, the “best deal” was identified according to the following formula:

1. The item that has the lowest unit price AND ≥ 4.5 stars rating AND ≥ 100 reviews.
2. If no item satisfies (1), the item with the lowest unit price AND ≥ 4 stars rating AND ≥ 100 reviews.
3. If no item satisfies (1) or (2), the item with the lowest unit price.

Applying this formula:

(a) The *best headline deal* is the item in the first line of results (i.e., the first 4 items) that satisfies the formula above.

(b) The *best overall deal* is the item on the first page of search results that matches the search term, has the lowest unit price with the same rating or higher than the best headline deal, and ≥ 100 reviews.

(c) The best *non-ad headline deal* is the item in the first 4 non-ad items (if different from (a)) that satisfies the formula above.

²⁷¹ See also Angwin & Mattu, *supra* note 22 (describing their methodology for scraping data from Amazon.com).

²⁷² KLAUS KRIPPENDORFF, CONTENT ANALYSIS: AN INTRODUCTION TO ITS METHODOLOGY 131-32 (4th ed. 2019).





²⁷³ Note, search result personalization on Amazon.com means that this test cannot be carried out using search result URLs.

(d) The *best overall deal compared to the best non-ad headline deal* is the item on the first page of search results that matches the search term, has the lowest unit price with the same rating or higher than the best non-ad headline deal, and ≥ 100 reviews.

This definition is modeled around a simplified budget-conscious, time-poor consumer. Although this hypothetical consumer is principally concerned with finding the result with the cheapest unit price, they are also concerned with finding a relevant result, and would prefer to have high ratings along with the low price, or at least 4 stars and 100 reviews.

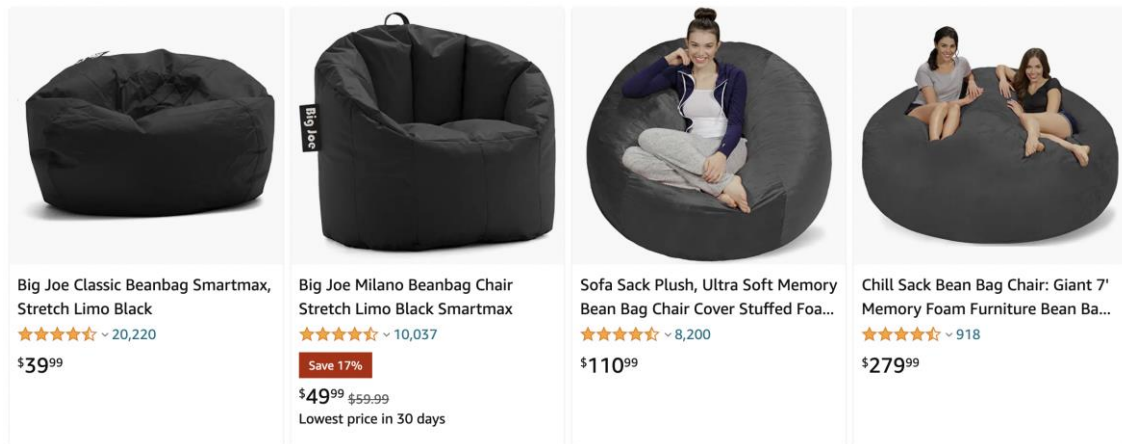
To illustrate, consider the following example search for a “bean bag chair” from our pilot study. Typing this search term into the search window yields the following headline results:

RESULTS
Price and other details may vary based on product size and color.

			
<p>Featured from our brands</p> <p>Amazon Basics Memory Foam Filled Bean Bag Chair with...</p> <p>★★★★☆ ~ 4,006</p> <p>\$140³⁷</p> <p>Get it as soon as Tue, Mar 29</p> <p>FREE Shipping by Amazon</p>	<p>Sponsored ⓘ</p> <p>Sofa Sack - Plush, Ultra Soft Bean Bag Chair - Memory Foam Bean...</p> <p>★★★★☆ ~ 13,095</p> <p>\$79⁹⁹</p> <p>Get it as soon as Mon, Mar 28</p> <p>FREE Shipping by Amazon</p>	<p>Sponsored ⓘ</p> <p>Chill Sack Bean Bag Chair: Giant 5' Memory Foam Furniture Bean Ba...</p> <p>★★★★☆ ~ 14,670</p> <p>\$164⁹⁹</p> <p>Get it as soon as Mon, Mar 28</p> <p>FREE Shipping by Amazon</p>	<p>Sponsored ⓘ</p> <p>Chill Sack Bean Bag Chair: Giant 7' Memory Foam Furniture Bean Ba...</p> <p>★★★★☆ ~ 918</p> <p>\$279⁹⁹</p> <p>Get it as soon as Thu, Apr 7</p> <p>FREE Shipping by Amazon</p>

Various features are coded from this first line of results, including the reference and unit prices, advertising, use of crossed-out listed prices, star rating, and number of reviews for each item. Note that the coder must hover over the star image to ascertain the star rating (which, along with the need to eliminate irrelevant items, makes automatic data collection less feasible, and manual coding more attractive, for this study). Applying the “best deal” formula, as set out above, the coder establishes that the best headline deal is the second item, for \$79.99 (with 4.3 stars). This is because, although all items are relevant to the search, none of the items have a star rating of 4.5 stars or more. This analysis corresponds with the first step in the formula. However, all items have a star rating of 4 stars or more, and ≥ 100 reviews. Therefore, on the second step of the formula, the best headline deal for the budget-conscious consumer is the item with the lowest price, namely the second item.

To assess whether this is the best overall deal on the first page, the coder must ascertain whether there is another item that is cheaper than \$79.99, has at least as high a star rating as the best headline deal, and has 100 reviews or more. They find that the best deal on the first page is at item twenty-one, at \$39.99 and 4.4 stars:



To facilitate data verification and replicability, the coders took screenshots of each search result page and the best deals (including the shopping basket showing shipping costs and delivery time).²⁷⁴

²⁷⁴ Jason M. Chin & Kathryn Zeiler, *Replicability in Empirical Legal Research*, 17 ANN. REV. L. & SOC. SCI. 239, 240 (2021) (explaining the need for all inputs to be available for future researchers to replicate results).