U.S. Antitrust Law and Algorithmic Pricing

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We review cases where plaintiffs have alleged anticompetitive harms from the use of algorithmic pricing.

WHAT IS ALGORITHMIC PRICING? 01

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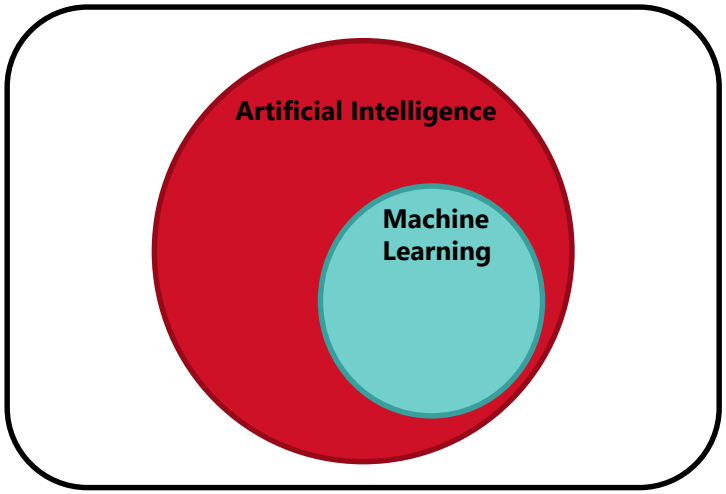
Intro to machine learning algorithms



There are three types of machine learning where algorithms perform different tasks:

1. **If/then** or **supervised learning algorithms** respond to training data linking inputs and outputs to create outputs based on prior learned relationships.
2. **Unsupervised learning** algorithms draw patterns or learn structure from input data to create output data.
3. **Reinforcement learning algorithms** use a trial-and-error method to manipulate inputs, observe results, and maximize reward.

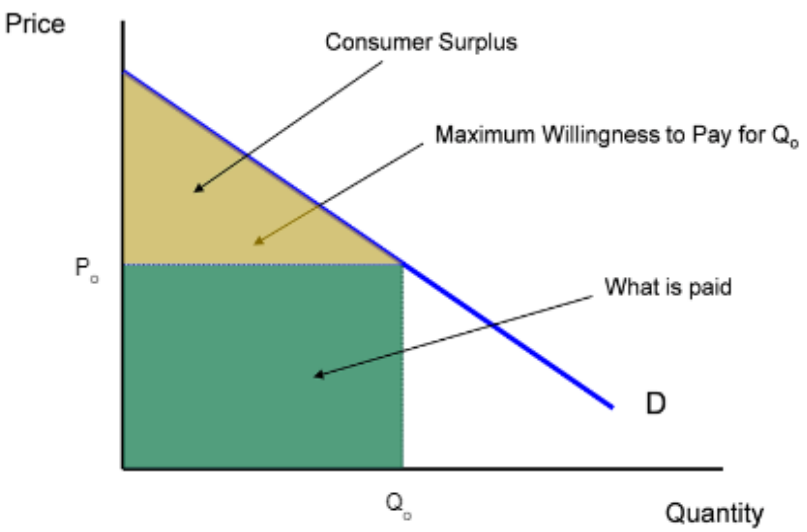
What is algorithmic pricing?

- Algorithmic pricing is a tool for businesses to predict a profit-maximizing price, which can update (often in real-time) in response to changes in the input data that the tool is built around.
- "Dynamic pricing" makes recommendations at the market-wide level, while "personalized pricing" makes recommendations based on groups of consumers or individual consumers.
  - Dynamic pricing produces a uniform price change for all users at the same time. It is based on factors like weather events, changes in consumer taste, deadlines approaching.
    - Examples include surge pricing on ride-sharing apps or airline/concert ticket price fluctuations.
  - Personalized pricing is based on individual willingness to pay and can produce differing prices for different individuals or groups of individuals simultaneously based on their identifiable characteristics.
    - Examples include e-commerce product price fluctuations based on products placed in a consumer's cart, targeting groups of individuals who haven't visited a website in awhile, or charging different prices to iPhone versus Android users.

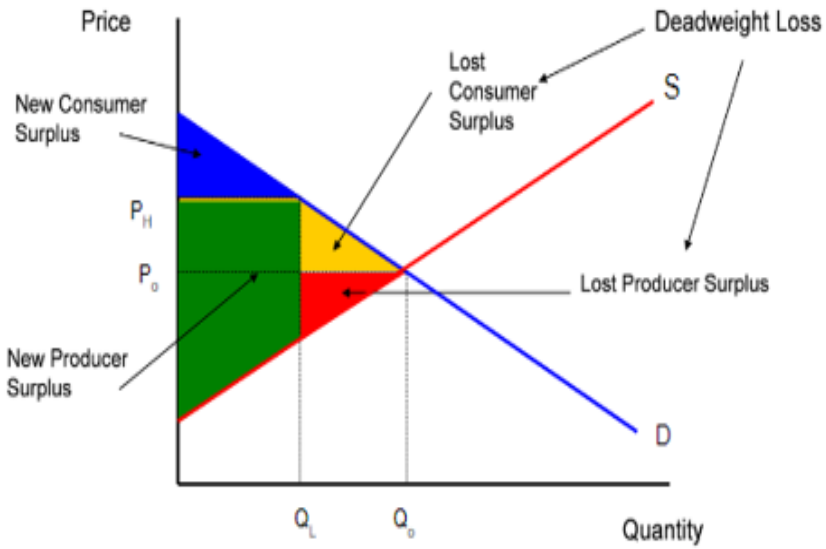
Econ of algorithms v. Econ of antitrust

- A primary goal of competition is to maintain "independent centers of decision-making" – because consumers win when each vies to outperform the other (including by lowering prices).
- Another goal of antitrust law is to avoid companies being able to charge monopoly prices when the monopoly is not earned "as a consequence of a superior product, business acumen, or historic accident."

Market Price



Artificial Price Floor



Evolving agency views

DOJ and FTC have given indication they will scrutinize algorithmic pricing

- Previous FTC and DOJ leaders believed traditional antitrust law could be used to address potentially anticompetitive activity caused by algorithms:
  - In a 2017 joint submission to the Organization for Economic Cooperation and Development ("OECD"), the FTC and DOJ concluded that, "[w]ithout **proof of collusion** or evidence that the **knowing parallel adoption** of pricing formulas narrowed the range of prices over time, parallel pricing conduct may be outside the reach of the antitrust laws."
- In short:
  - Where an algorithm is used to implement a human agreement, traditional antitrust law principles apply. Most case law involves such agreements.
  - Where the algorithm facilitates tacit collusion or the algorithm evolves to reach the equivalent of collusive results on its own, the law is less clear.

Evolving agency views

DOJ and FTC have given indication they will scrutinize algorithmic pricing

- Current DOJ leadership seems concerned that algorithmic pricing might accomplish the results that analog information-sharing only facilitated:
  - AAG Kanter (May 2022):
    - "Whether you use a smoke-filled room in a basement or you're using AI and an API, it's still the same thing. It's still collusion."
    - "We are not far off, if at all, from a world in which **AI can learn to price fix**" and it may soon become "necessary to start training your AI like you train your employees" not to engage in anticompetitive conduct.
  - PDAAG Mekki (Feb. 2023):
    - "We are experiencing an inflection point in the use of algorithms, data at scale, and cloud computing. . . . That is why it is important to revisit outdated guidance before it strays even further from market realities."
    - "Where competitors **adopt the same pricing algorithms**, our concern is only heightened. Several studies have shown that these algorithms can lead to tacit or express collusion in the marketplace, potentially resulting in higher prices, or at a minimum, a softening of competition."

Evolving agency views

DOJ and FTC have given indication they will scrutinize algorithmic pricing

- The FTC recently indicated that "existing rules" could be used to address concerns that A.I. facilitate anticompetitive outcomes:
  - FTC Chair Khan (May 2023):
    - "[T]he A.I. tools that firms use to set prices for everything from laundry detergent to bowling lane reservations can **facilitate collusive behavior** that unfairly inflates prices — as well as forms of **precisely targeted price discrimination."**
    - **"**The F.T.C. is well equipped with legal jurisdiction to handle the issues brought to the fore by the rapidly developing A.I. sector, including collusion, monopolization, mergers, price discrimination and **unfair methods of competition**."

U.S. ANTITRUST LAWS AND ALGORITHMIC PRICING

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Price Fixing and Information Sharing

- The Sherman Act prohibits every contract, combination, or conspiracy in restraint of trade or commerce. 15 U.S. § 1.

- Agreements among competitors to **set price or output** are ***per se* illegal**.
  - Unless they are ancillary to an agreement that is procompetitive.

- Other types of agreements, which can increase output and consumer welfare, are judged under the **rule of reason**.

- Agreements to exchange information relating to pricing or employment terms can be problematic in one of two ways:
  - As **circumstantial evidence** of a *per se* illegal agreement to fix prices, or
  - Because the **agreement to share information** makes tacit collusion easier, and is unreasonable overall. See *Cement Institute*.

Price Fixing and Information Sharing

- Example: *United States v. Cargill Meat Solutions*
  - DOJ complaint and consent decree, pursued as a civil Section 1 case rather than a criminal case.
  - Poultry processors used information exchanges and data processors to collaboratively share information about worker wages and benefits
  - Goal was to artificially suppress wages, stifling competition and harming plant workers
  - The shared information was disaggregated, identifiable, and included both current and future wage pricing information

Hub-and-Spoke Conspiracy Theory

- In a hub-and-spoke conspiracy, a horizontal agreement is established through a series of vertical agreements between competitors and a central distributor or hub.
- Requires some evidence that an agreement exists between the competitor "spokes," forming a "rim."
- The hub often communicates what other competitors are thinking and planning to do – a form of information sharing intended to result in an agreement.

Hub-and-Spoke Conspiracy Theory

- Example: *United States v. Apple (e-books)*
  - Section 1 rule of reason case where Apple's efforts to get publishers on the same pricing scheme were unreasonable for resulting in higher e-book prices.
  - Apple entered into vertical agreements with its publisher co-conspirators to change their pricing model for e-books, allowing the publishers to set prices for e-books sold both via Apple and other retailers without the possibility of a discount. Apple received a 30% commission in exchange.
  - Apple encouraged publishers to agree on the basis that the others were also agreeing. Apple could assure the "rim" that they were all in agreement: it threatened not to enter the e-book market at all unless multiple publishers agreed.

No More Safe Harbor: Information Sharing

DOJ withdrew its support for certain safe harbors in February 2023

- The DOJ and FTC previously supported guidance recognizing the benefits of collaboration in the healthcare industry as a means to reduce costs and improve patient care. Enforcers and courts applied this guidance to information sharing outside of the healthcare industry.

- To stay within the information-sharing safe harbor, companies could submit competitively-sensitive pricing information to industry surveys if the following conditions were met:
  - A third party must operate the survey;
  - The information must be at least 3 months old;
  - The information must be aggregated to anonymize it; and
  - The information must be from numerous sources to further protect source identity.

- ***The DOJ has withdrawn support for this guidance***, but the FTC has not.

Pricing Discrimination

The Robinson Patman Act prohibits pricing discrimination

- Robinson Patman Act Section 2(a) prohibits:
  - Difference in price (cost justification defense available)
  - in contemporaneous sales to two buyers from one seller
  - involving commodities (physical, not services)
  - of like grade and quality (physical differences, not just brand)
  - that may injure competition downstream (*Brooke Group*; *Morton Salt* presumption)
- RPA Sections 2(d)/(e) prohibit:
  - Paying for or furnishing, respectively, promotional services to one reselling customer (meeting competition defense available)
  - unless you provide any competing buyer with "proportionally equal terms"
  - No need to prove injury to competition but private (not FTC) plaintiff must show injury to it to recover damages

Possible FTC Action Under Section 5

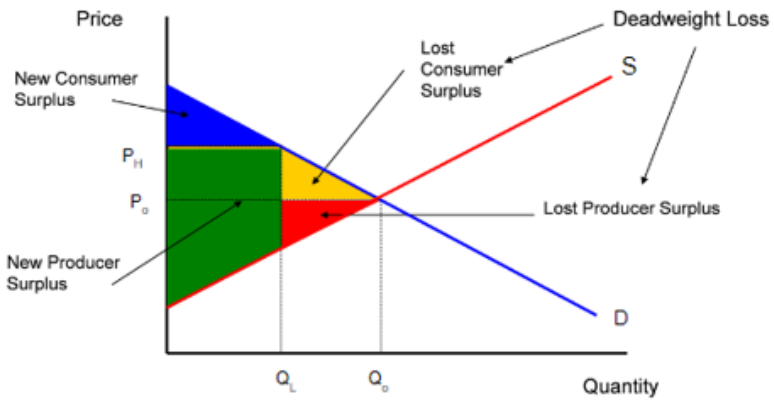
The FTC could attempt to use Sec. 5 to reach behavior not covered by the Sherman & Clayton Acts or RPA

- The FTC announced in November 2022 that it plans to expand enforcement under Section 5 of the FTC Act to pursue "unfair methods of competition."
  - "Both the House and Senate expressed a common understanding that unfair methods of competition encompassed conduct that tended to undermine 'competitive conditions' in the marketplace."
  - Targets "[c]onduct that violates the spirit of the antitrust laws" including "practices that facilitate tacit coordination" and "price discrimination claims [harming] buyers not covered by the Clayton Act"
  - Looking for (1) exploitation/use of superior bargaining position, and (2) harm to the competitive process.
- Section 5 of the FTC Act also covers "unfair or deceptive acts or practices," which the FTC has indicated applies to uses of AI that "do more harm than good."
  - Tools that "target customers" based on "race, color, religion, and sex" may fail the "fairness" test if they result in "digital redlining."
  - "The FTC has [] warned market participants that it may violate the FTC Act to use automated tools that have discriminatory impacts."

Section 5 Pricing Discrimination?

- FTC Act Section 5 could cover a broader set of circumstances than Robinson Patman, as long as "competition" is implicated
    - Services, not just "commodities"?
    - No defense for differences in cost?
    - If competitors working together, maybe that's enough to implicate competition?
- Commissioner Bedoya speech eschews "efficiency" in favor of "a return to fairness"
- Could the harm/exploitation element be satisfied by the loss in consumer surplus?

Artificial Price Floor



Possible New Regulations

Legislation and potential rulemaking

- FTC's "Commercial Surveillance" Advanced Notice of Proposed Rulemaking expresses concern about the competitive effects of data collection by companies with market power.
- "Tech" bills being debated in the Senate would limit uses of data
  - AICOA
  - Open App Markets Act
- Algorithmic Accountability Act
  - Requires companies to do impact assessments of their algorithms
  - Authorizes the FTC with rulemaking authority to determine how companies should assess, and information gathering authority to create a repository of data on how algorithms are being used
- Oversee Emerging Technology Act
  - Proposes creating a new federal agency, Federal Digital Platform Commission, to ensure that the "algorithmic processes of digital platforms are fair, transparent, and safe."

U.S. CASES INVOLVING ALGORITHMIC PRICING 03

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Section 1 Violation Involving Algorithms

A clear violation: human collusion facilitated through an algorithm

- *United States v. Topkins*, No. 15-cr-00201 (N.D. Cal. 2015):
  - The Complaint alleged that competitor sellers of wall posters agreed on rules to implement in a pricing algorithm.
    - The poster sellers used commercially available algorithm-based pricing software to set the prices of posters sold on Amazon Marketplace. The software collected information about the prices of rival products on Amazon Marketplace and gave the seller options for pricing rules to use in response.
    - Topkins and competitors discussed the prices of certain posters and agreed on the pricing rules they would select for those posters, with the purpose of increasing and maintaining prices. Topkins wrote original computer code for his company to follow these agreed-upon pricing rules.
    - Topkins and competitors further discussed the resulting prices to monitor the effectiveness of the agreed-upon pricing rules in raising and maintaining price.
  - Result: Topkins pleaded guilty to violating Section 1 of the Sherman Act and agreed to pay a $20,000 criminal fine.

Section 1 Allegation Involving a Third Party

A pricing tool that "unnecessarily facilitates" coordinated interaction may violate Section 1

- *U.S. v. Airline Tariff Publ'g Co.*, 836 F. Supp. 9 (D.D.C. 1993).
  - The Complaint alleged that eight major airlines along with their joint venture, the Airline Tariff Publishing Company ("ATP"), shared anticipated prices through software meant to collect and disseminate airfare for booking agents (including computer reservation systems owned by the airline defendants).
    - The fares were published with codes indicating the "first ticket date" and/or "last ticket date," setting when booking agents could sell the ticket at the associated price.
    - The airlines frequently changed or withdrew fares prior to the first or last ticket date, leading to what the DOJ called a type of offer-and-acceptance system whereby the airlines would agree to raise the price of a specific fare, or end discounts, in exchange for cooperation by a competitor on that route or another route indicated in the code published with the fare.
    - The complaint alleged (1) hardcore price fixing agreement, and (2) an illegal fare dissemination system "formulated and operated in a manner that unnecessarily facilitates coordinated interaction" by enabling communication, monitoring, and reduced uncertainty around pricing intentions.
  - Result: a civil consent decree ended the publishing of codes to indicate linked routes or planned price changes, unless the price change was simultaneously advertised widely to the public.

Plaintiffs Testing Section 1 Theories

- **Uber**: In 2015, private litigants sued Uber alleging that Uber's app design supported a hub-and-spoke conspiracy.
  - In 2020, an arbitrator found that plaintiffs had not met the burden to establish a hub-and-spoke conspiracy, because there were "no spokes in the traditional sense but merely numerous vertical and individual contractual relationships between Uber and its drivers." Uber communicated pricing to drivers, but the driver "spokes" did not communicate.
  - A new class action filed against Uber & Lyft in 2022 alleges "vertical price-fixing" because the companies use algorithms to determine a common price and then require drivers to charge that price.

- **Amazon**: A January 2022 suit by the Washington AG alleged that Amazon made pricing decisions for its competitors, using an algorithm.
  - The AG alleged that Amazon invited select third-party sellers, which Amazon previously competed against, to its Sold by Amazon program.
  - The AG alleged that once sellers enrolled, their prices were set automatically to match price increases of rivals, and sellers could not discount to entice buyers. The program allegedly "stabilized" prices at "artificially high levels."
  - At the time of suit, Amazon had already shut down the small program. Amazon maintained the program was legal, but entered a consent decree not to restart it.

Plaintiffs Testing Section 1 Theories

- **RealPage:** A 2022 complaint against RealPage and its landlord-customers alleges that a rental property management software tool facilitates collusion on price.
  - Plaintiffs allege that the software collected non-public information, such as the price that rental units actually rented for, and the number of vacant units.
  - Plaintiffs allege that use of the software raised prices and reduced occupancy rates.

- **MGM/Cesar's and Atlantic City Hotels**: Multiple suits in 2023 have alleged that hotels in Las Vegas and Atlantic City used a pricing algorithm to facilitate collusion in the market for hotel rooms.
  - Plaintiffs allege that the Rainmaker algorithm gives hotel and casino properties room pricing and occupancy information.
  - Plaintiffs allege that the algorithm discourages properties from lowering rates by suggesting an optimal price.

Questions?

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