AN ECONOMIC ANALYSIS OF THE SELF-PREFERENCING DEBATE

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Over the last few years, some regulators and lawmakers have expressed concerns that certain intermediaries have engaged in strategies to favor their own downstream products or services over those of third parties, practices commonly referred to as "self-preferencing." Despite the prevalence of intermediaries offering their own competing products in downstream markets in many sectors of the economy, for instance with private labels in retail, self-preferencing concerns are overwhelmingly discussed in the context of digital platforms.

Economists have referred to a platform that runs a digital marketplace and sells physical or digital products on it as operating "in dual mode."[2] When platforms operate in dual mode, they have the potential to treat themselves differently from the way they treat third-party sellers on their marketplaces. In recent years, regulators and lawmakers across the globe have expressed concerns that such "self-preferencing" behaviors could be anticompetitive, under the theory that digital platforms would be exploiting their position as intermediaries in the digital sectors to favor their own products and services at the expense of third-party sellers. For example, one commonly expressed concern is that digital platforms operating in dual mode have an informational advantage over sellers and can use data obtained from the transactions with third-party sellers to favor their own products or introduce new ones, drive third-party sellers out, and thereby suppress competition.[3] A different concern is that, since digital platforms control the algorithm that displays the products to consumers on its marketplace, they in principle could abuse that control to favor their own products over those of third-party sellers by displaying them more prominently than would be warranted based on natural consumer preferences or product quality.

In this paper, we start by providing a brief overview of prominent types of behaviors often classified as self-preferencing in the digital economy and the current debate around these practices, including related proposed ex ante regulation and ex post investigations on both short-run and long-run total and consumer welfare. We then explore varied economic perspectives regarding why concerns regarding self-preferencing have been heightened in the digital economy when such practices are not new and are widespread, and regarding perceived unfairness and potential considerations for "evening the playing field" among competitors. We conclude by reviewing recent economic research studying the effect of self-preferencing practices (both positive and negative) and proposed regulatory responses on

consumer welfare to shed some light on the possible effect of regulating these practices.

I. SELF-PREFERENCING: EXAMPLES AND NOTED REGULATORY CONCERNS

A. TYPOLOGY OF SELF-PREFERENCING BEHAVIORS

In the context of digital platforms, allegations of self-preferencing take multiple forms. This paper focuses on three allegations levied against digital platforms operating in dual mode: self-preferencing from the use of data, self-preferencing from ranking and display on the marketplace, and self-preferencing through platform fee discrimination.

Self-preferencing data use. One common set of self-preferencing allegations is that digital platforms introduce new products that compete with third-party sellers, identified and/or designed based on marketplace data surrounding competitor products. Such allegations have been levied against Amazon in the U.S. and Europe, accusing the company of relying on data originating from interactions between buyers and third-party sellers to make decisions about which products to introduce under its private label, as well as its marketing and pricing decisions.[4] For instance, the European Commission stated, "Amazon appears to use competitively sensitive information—about marketplace sellers, their products and transactions on the marketplace."[5] The competitive concern would be that those marketplaces leverage proprietary data about competitors (for which a reasonable substitute is not available to other competitors) to set prices or product features, potentially disincentivizing product innovation by competitors.

Self-preferencing ranking and display. Another common self-preferencing allegation involves digital platforms ranking or displaying their own products more prominently than those of third-party sellers, for instance, in search results. For example, in Europe, the European Commission fined Google in 2017 for favoring its own products over those of competitors in the search results with Google Shopping.[6] Similarly, Amazon is under regulatory scrutiny regarding the criteria used to choose which products are more prominently featured in the platform.[7] And Apple had been accused of "skirting" its rules on App Store rankings by the Wall Street Journal.[8] The competitive concern would be that those rankings and displays falsely suggest to consumers that the platform's own products are superior in performance or pricing relative to competitor products, weakening their sales, potentially disincentivizing investments by competitors, or resulting in longer-run monopolization.

Self-preferencing platform fees. A third type of self-preferencing allegation relates to practices that involve charging different platform fees on third-party products compared to those of the platform. These allegations have arisen in the context of commissions charged by digital platforms that operate a marketplace for digital goods, such as apps or software. For instance, Spotify complained to the European Commission in 2019 about the App Store commission that Apple charges to third-party developers, but not to apps developed by Apple itself.[9]

These three categories of self-preferencing allegations are not the only ones. Other actions, outside the scope of this paper, include self-preferencing concerns involving digital platforms tying the usage of two of their products. For example, in 2018, the European Commission found that Google's practice of pre-installing certain apps on Android devices was a way of self-preferencing its own applications compared to rival ones.[10] The competitive concern would be that platforms raise rivals' costs in a way that will enable longer-run monopolization.

B. BACKGROUND ON SELF-PREFERENCING REGULATORY CONCERNS, INVESTIGATIONS, AND PROPOSED REMEDIES

Regulators in many regions, including the European Union, the UK, and the U.S., have launched investigations into so-called self-preferencing

practices by digital platforms, over concerns that they "exploited their power in order to become even more dominant."[11]

For instance, U.S. lawmakers, as part of the 2020 "Investigation of Competition in Digital Markets," accused large digital platforms of engaging in various forms of self-preferencing that resulted in the platforms either favoring their own products or services, or "giving preferential treatment to one business partner over others," ultimately "picking winners and losers in the marketplace."[12] This investigation resulted in a request to Congress to establish "nondiscrimination rules to ensure fair competition and to promote innovation online," which "would require dominant platforms to offer equal terms for equal service and would apply to price as well as to terms of access" to all participants in the platform.[13]

In the UK, the Competition and Markets Authority (CMA) published a research white paper in January 2021 entitled "Algorithms: How they can reduce competition and harm consumers." The white paper studied, among other things, potential harm that could arise from digital platforms' control of marketplace algorithms resulting in their favoring their own products, particularly when such ranking is not based on the merits of the products. One stated concern was that "a platform may manipulate rankings of results to favour certain options, because it derives benefit from a commercial relationship, such as higher commission payments or revenue shares. (It may also favour options that it owns, which are competing against other options on the platform[. . . .])."[14]

In this context, regulators have proposed, and at times implemented, remedies aimed at curtailing self-preferencing practices. The earliest of them were implemented in 2019, when India introduced a law to prevent Amazon and its local competitor Flipkart from selling products of companies in which they have an equity stake, effectively preventing them from operating in dual mode.[15] This type of regulatory remedy, in which digital platforms would be prevented from selling on the marketplace they operate, was also proposed in the U.S. by Senator Elizabeth Warren in 2020, who tweeted that "You can be the umpire, or you can be a player, but you can't be both at the same time. We need to #BreakUpBigTech so we can level the playing field."[16]

In the U.S., a bipartisan bill has been proposed, the American Innovation and Choice Online Act (AICOA), which would aim to, among other provisions, prevent large digital platforms from unfairly preferencing their own products or services, or using non-public data obtained, generated, or collected through the platform to compete with third parties.[17]

In the European Union, the Digital Markets Act (DMA) received final approval by the EU Council. If approved, this legislation would regulate large digital platforms (effectively, Apple, Google, Facebook, and Amazon) and prevent, among other behaviors, self-preferencing in search results of the platform's own products compared to third parties, the exclusive use of platform-generated data, or requirements to pre-install certain software.[18]

In the UK, the CMA recently published a discussion paper highlighting potential future enforcement actions it may implement against large digital platforms ("Online Choice Architects") to regulate self-preferencing practices by dominant platforms.[19] Regulators have also recently stated their intention to investigate whether Amazon is giving its own retailers priority above third-party vendors, and whether this practice is considered anticompetitive.[20] The Australian Competition & Consumer Commission identified anticompetitive self-preferencing as key anticompetitive conduct, arguing that additional measures are necessary to prevent harm to consumers.[21]

Regarding data access, different regulators have envisioned reducing the asymmetrical access to data between digital platforms and third parties in different ways, with two different approaches emerging. The first approach would ban the platform from using certain data altogether. This was the requirement by the European Commission in the

Google/Fitbit acquisition in 2020, where the merger was approved on the condition that Google would "silo" Fitbit data and not rely on it to target search ads.[22] Both the DMA and the AICOA include similar provisions that would prevent a platform from using non-public data or data generated in the platform about third-party sellers to compete with those businesses.[23,24]

The second approach would instead require digital platforms to share their data with third-party sellers: the DMA contains a clause that, if approved, would require digital platforms to share, for free, customer data collected through their platforms with third-party sellers, subject to privacy requirements.[25] This requirement could mean that, for example, a developer could request data collected by Apple or Google regarding who downloaded their apps in a way that would preserve user privacy. There is an ongoing debate about the extent of these clauses and how exactly they should be implemented.[26]

It is still unclear how these proposed legislations and regulations would affect economic outcomes like prices, competition, innovation, or consumer welfare, and whether they would distort these markets. Section III.B of this paper aims to shed some light upon this open question based on recent advances in economic research.

II. ANTITRUST CONCERNS REGARDING SELF-PREFERENCING: AN ECONOMIC PERSPECTIVE

A. THE FOCUS ON DIGITAL PLATFORMS

A noteworthy aspect of the debate around the antitrust concerns surrounding self-preferencing is that such behaviors are neither new nor specific to digital platforms, and had not raised anticompetitive concerns of such magnitude before.

1. THE PREVALENCE OF PRIVATE LABELS IN RETAIL BUSINESSES

Several non-digital companies and intermediaries have long operated in dual mode, selling their own products alongside those of third parties, deciding on their pricing and placement, and often favoring their own products over those of competitors.

Many large supermarket chains sell their own products under "private labels." Examples abound, including Costco with Kirkland, Kroger with Simple Truth, and Walmart with Great Value in the U.S. European supermarket chains like Carrefour, Auchan, Monoprix, and Sainsbury's also offer their own private labels. Overall, private labels are usually successful with consumers: in 2020, they accounted for around 18% of product sales in U.S. supermarkets.[27] Large retailers, including Walmart and Target, have expanded private label options recently, offering a wide range of goods. For example, Kroger's Simple Truth product line, primarily focused on edible products and household consumables, accounts for 30% of the company's overall sales volume.[28] Private labels are also becoming increasingly popular in other product areas, including cosmetics and household products. For instance, store brands in hair care, baby furniture, and first aid products and accessories experienced double-digit growth in 2021 in the U.S.[29] Finally, private label sales are important to clothing and department stores, accounting for over a third of 2019 sales revenue for Kohls and JCPenney, for example.[30]

Private labels typically offer trusted and cheaper alternatives to their competitors, providing value and options, in particular for more price-sensitive customers: 2020 surveys found that nearly 20% of grocery shoppers increased their purchases of private labels due to their lower prices,[31] and that more than 85% of shoppers perceive private labels to be of equal or better quality than national brands.[32] Similarly, Carrefour France's global director of private label attributed part of Carrefour's private label growth to the coronavirus pandemic, which led customers to search for low-cost products. She credited Carrefour France's private label appeal to its cost, explaining that "the Carrefour Bio brand aims to make organic products accessible to everyone, every day, thanks to its low prices."[33] More recently, as inflation has been soaring

worldwide, private labels sales have increased as "cost-conscious consumers" are switching to private labels.[34] More generally, private labels have created value by providing alternative options to consumers and increasing price competition, both of which have likely increased total consumer welfare. The adoption and success of private labels by retailers, which may rely on practices that can be described as self-preferencing, can be welfare-enhancing, increasing choice, reducing prices, and enhancing competitive pressures on leading brands and firms.

These private label products can be, and have been, designed and introduced based on data collected from other sales, as well as preferentially placed and priced.[35] For instance, in the U.S., Costco has promoted its own private label, Kirkland, favoring it over third parties, including by replacing national brands across several product lines.[36] Other large retailers, such as Walmart and Kroger, have also replaced certain national brands and decided to feature their own products and labels instead.[37] Additionally, supermarkets can decide on the pricing of all the products they carry, and they charge manufacturers various types of fees, such as placement fees, which were reported to amount to $200 billion in the U.S. in 2015.[38]

Despite the prevalence of private labels in the traditional retail sector, and despite retailers routinely using data from third-party sales, controlling prices and placement, there is limited evidence that competition by private labels has significantly curtailed innovation in this sector, otherwise harmed consumer choice, or lead to higher prices, while economists and antitrust practitioners have found that private label products can provide competitive constraints on branded products.[39]

2. SELF-PREFERENCING BEHAVIORS IN OTHER NON-DIGITAL BUSINESSES

Dual mode is not limited to retailers. For example, cable TV networks operate in dual mode when they sell advertising, as they need to decide to which third-party local or national advertisers to sell their air space, while also advertising their own programming.[40] Networks strategically place their ads to influence viewers, reserving the best advertising times for their own programs, effectively self-preferencing these slots to their own products over those of third-party advertisers.[41] For example, the network airing the Super Bowl might choose to reserve certain ads for its upcoming premiere show. Additionally, cable TV networks may also operate in dual mode when they produce and distribute their own content alongside independent content. In this context, the Federal Communications Commission order approving the Comcast-NBCU merger included a non-discrimination condition, which barred Comcast from discriminating against video programming vendors on the basis of affiliation or lack thereof in the selection, price, terms, or conditions of carriage.[42]

In healthcare, it has become more common for health insurers in the U.S. to vertically integrate with healthcare providers. While this vertical integration helps solve the information asymmetry between insurers and providers, and can result in better care for patients, some of the outcomes of this vertical integration could be labelled as "self-preferencing," such as offering plans that try to direct members to their own doctors.[43] One example is Optum (a subsidiary of UnitedHealth Group) purchasing the DaVita Medical Group.[44] At the end of the FTC's review, Commissioners Phillips and Wilson noted that "vertical mergers often generate procompetitive benefits that must also factor into the antitrust analysis. A major source of these benefits is the elimination of double-marginalization, which places downward pressure on prices in the output market."[45] Another is the merger between CVS and Aetna, which resulted in new health plans that aimed to direct members to CVS clinics and pharmacies, including free at-home prescription delivery and lower prices on health-related items at CVS locations.[46]

3. POTENTIAL DIFFERENCES BETWEEN TRADITIONAL BUSINESSES AND DIGITAL PLATFORMS

Given that intermediaries have long operated in dual mode, across many sectors, often preferring their own products or using their data to do so, why has self-preferencing raised increased regulatory concerns when it involves digital platforms? This section explores possible economic factors that would differentiate digital platforms from other traditional intermediaries as well as their limitations.

Data access. Traditional businesses, such as supermarkets introducing their own private labels, have long been able to collect data on third-party sales, and use it for their own business decisions (design, price, and entry) in very similar fashion to what digital platforms are currently accused of doing. In that context, some antitrust practitioners have argued that their heightened concerns in the digital world come from the greater extent and scale of data that can be gathered by digital platforms compared to traditional intermediaries. The argument is that such scale would allow digital platforms to use data differently than brick-and-mortar stores, causing similar self-preferencing behaviors to become anticompetitive. For instance, current FTC Chair Lina Khan argued in *Amazon's Antitrust Paradox* that "the type of behavior that online firms can track is far more detailed and nuanced" compared to what brick-and-mortar stores have access to, discussing how Amazon had "amassed significant troves of data on users. This data enables it both to extend its tug over customers through highly tailored personal shopping experiences, and, potentially, to institute forms of price discrimination." Khan referenced press reporting about how "Amazon uses sales data from outside merchants to make purchasing decisions in order to undercut them on price," and wrote that "this dual role also enables a platform to exploit information collected on companies using its services to undermine them as competitors."[47]

However, it is worth discussing both this premise, the value and role of data, and the potential costs of sharing data. First, traditional retailers have had increased access to many tracking technologies. For instance, as early as 2013, the consumer organization Consumer Reports reported on many ways traditional retailers track highly detailed customer actions.[48] Those included video analytics, captured from high-resolution cameras used in and outside the store that monitor all customers' actions (including "gaze trackers" that track which brands consumers look at and for how long). Retailers can also use data from their online operations or acquired from data brokers.[49]

Second, economists specializing in the digital economy have noted that the value of data can be exaggerated. Lambrecht & Tucker (2017), for instance, find that the data collected by digital platforms is not particularly valuable in and of itself. Rather, value arises from the ability of platforms to analyze such data, through algorithms and data analytics.[50] Therefore, it is worth considering whether, if proposed remedies that would force data to be shared with third parties were used, these third-party sellers would have necessary processes in place. Data must also be rare to have some value. In that context, it is worth considering whether other sources of data that could be used as substitutes are available.

Third, any potential benefits of forcing platforms to provide data should be compared to the potential costs of doing so, in particular if third parties are not expecting many benefits out of the data. Costs would include administrative costs and the potential for data leaks and privacy issues.

Placement and rankings. On digital marketplaces, algorithms often play a key role in determining which products are shown to consumers and in what order, and, in some cases, prices shown to consumers. Algorithms often rely on machine learning and knowledge of consumers' preferences or past behaviors. Ranking and prices can potentially be individualized. Since algorithms can be opaque to users, regulators in the European Union, the UK, and India have alleged that platforms can leverage such opacity to favor their own products and services.[51] As a result, regulators in the European

Union and India have passed legislation to improve transparency in how these algorithms work.[52]

However, a potential problem with the allegations regarding unfair and self-preferential ranking is that they can be hard to identify. There are several legitimate reasons that may cause algorithms to rank the platform's products higher than those of competitors: they can be cheaper, have features that consumers value such as priority shipping, or simply be preferred by consumers.[53] Businesses want to appear first in search engine results regardless of their products quality, but platform operators want their services to be profitable and reflect the needs of consumers, meaning the platform must maintain its value to users by showing them the best products.

Lower barriers to entry and the "long tail" of digital marketplaces. Some economists, such as Madsen and Vellodi, have argued that third-party sellers on digital platforms may be more vulnerable to anticompetitive practices from marketplace owners than in traditional retail channels. Specifically, these economists argue that the barriers of entry for third-party sellers in digital platforms can be significantly lower than those to sell in more traditional settings, such as grocery stores.[54] As a result, the argument follows that third-party sellers on digital platforms are often small companies that, they argue, could potentially be more vulnerable to competition from the platform itself (via private labels or other self-preferencing behaviors).

On the other hand, economics would also predict that low barriers to entry and the resulting smaller competitors are often beneficial to consumers, as they promote competition, including with a platform's own offering. In this way, low barriers to entry have also enabled the wide array of products and services available on digital platforms. Thanks to their nearly unlimited shelf space, online marketplaces can provide consumers access to a much larger variety of products and services than can typically be found on brick-and-mortar stores. For instance, Brynjolfsson et al. (2006) study the "long tail" of digital stores, finding that 30–40% of Amazon book sales come from books not normally found in physical stores, leading to an additional one billion dollars annually in consumer surplus.[55] These authors argue that digital platforms crucially contribute to the diversity of available products for users.

B. THE CONCERN WITH UNFAIRNESS: AN ECONOMIC PERSPECTIVE

While the effect of self-preferencing on competition, prices, and consumer welfare can be ambiguous, as there is evidence these actions can benefit consumers, antitrust practitioners and regulators argue that these actions are simply unfair to competitors. The concept of "fairness," particularly when it relates to competitive actions that improve prices or enhance competition, is not a well-defined term in economics. It can therefore be difficult for economists to analyze the debate around self-preferencing, particularly when regulatory concerns about self-preferencing are often rooted in beliefs that a "level playing field" is necessary for all competitors.[56]

Some critics of self-preferencing argue that self-preferencing is inherently "unfair," stating, for example, that "self-preferencing occurs when a firm *unfairly* modifies its operations to privilege its own, another firm's, or a set of firms' products or services."[57] However, even those same critics admit there are "benign" cases of self-preferencing where firms engage in allegedly unfair practices but there is no harm to consumers.[58]

Some antitrust practitioners have questioned whether fairness itself should be the relevant criterion to evaluate self-preferencing,[59] and economists have usually recognized the difficulty of creating a fairness standard to enforce on multi-sided platforms. In an article advocating for increased regulation of self-preferencing, Inge Graef acknowledged as much, noting that "it seems impossible to require a platform to act in one particular way that can be considered 'fair,'" largely because the interests of platforms, third-party businesses, and users can conflict.[60] Others

go further, arguing that enforcing a prescribed standard of fairness on digital platforms would result in potentially "unfair" disadvantages in other areas since the platform's online and offline rivals would not be subject to the same regulations.[61]

The link between unfairness and anticompetitive conduct is sometimes weak, given that unfairness is not necessarily inherently anticompetitive and that antitrust laws, especially in the U.S., are designed to protect consumers and competition itself rather than competitors.[62] In particular, the absence of a fairness mandate in U.S. competition law has been corroborated in some jurisprudence,[63] as the harm to individual competitors, which could be characterized as unfair, does not violate U.S. antitrust law. In *Brooke Group*, the Supreme Court further explained, "Even an act of pure malice by one business competitor against another does not, without more, state a claim under the federal antitrust laws," rejecting similar efforts to use antitrust law to enforce principles of "fairness."[64] It may therefore be useful to reframe the question from whether self-preferencing is "unfair" and harms certain competitors to whether it leads to worse outcomes for consumers. Do self-preferencing behaviors lead to reduced output, higher prices, reduced innovation, or lowered product quality?

Critics of proposed remedies of self-preferencing for digital platforms argue that allegedly self-preferencing behaviors need to be evaluated on a case-by-case basis to see whether unfair practices are being used in an anticompetitive manner to eliminate threats to the platform itself, monopolize a downstream market, or exclude named competitors from a downstream market, all of which could be rightfully deemed unlawful and anticompetitive.[65] Some have argued that blanket regulations requiring uniform treatment for all sellers on a platform, such as Mandated Neutrality Standards, would not promote any inherent standards of fairness or efficiency, and could lead to economically intrusive outcomes and damage to consumers,[66] and generally ignore that there is nothing automatically economically efficient about uniformity.[67] As such, they argue that economic harm arises only when unfair practices are used to support anticompetitive conduct, and that there is no economic harm from unfair practices in and of themselves.

III. WHAT ECONOMICS TEACHES US ABOUT SELF-PREFERENCING

Older economic tools and more recent research provide relevant tools for the analysis of self-preferencing behaviors by digital platforms. We start with the most classical framework of analysis, that of vertical integration, with the related concepts of the "elimination of double marginalization" and "raising rivals' costs," which provide a helpful model to understand the incentives of digital platforms. Compared to traditional firms, a strategy of raising rivals' costs goes directly against a platform's business model and can endanger its profitability. We then look into more recent economic research, still in its early days, which has focused on the positive and negative welfare implications of self-preferencing by digital platforms and, in particular, the potential impact of proposed regulations that would affect platforms' ability to operate in dual mode. This research offers mixed findings, suggesting the need for a careful and case-by-case approach.

A. DIGITAL PLATFORMS AS VERTICALLY INTEGRATED FIRMS: ELIMINATING DOUBLE MARGINALIZATION OR RAISING RIVALS' COSTS?

Traditional economic theory of vertical mergers and vertical integration can provide a useful framework to study firms that operate in dual mode. This is because digital platforms can be viewed as vertically integrated firms when they decide to operate in dual mode. For instance, Nintendo operates the Nintendo eShop, a digital platform where Nintendo publishes its own games for users to purchase. As such, Nintendo produces and sells games (the "downstream market"), but also operates the distribution network where these games are sold (the "upstream market").

Economists and regulators have long understood that, in certain conditions, vertical integration can have procompetitive effects by incentivizing firms to lower final prices consumers, through the "elimination of double marginalization." This is because, absent integration, if firms have market power, they will price goods above marginal cost in both the upstream and downstream market, and final consumers pay a price that includes both markups. However, when firms are vertically integrated, the firm has access to inputs at marginal cost, leading to lower prices, and the elimination of one of the two markups.[68] The implication here is that digital platforms may be able to eliminate double marginalization and benefit consumers through lower prices when they introduce their own products.

On the other hand, because digital platforms operate in the upstream market, as intermediaries, they can potentially influence the costs faced by third-party sellers to distribute, or even produce, goods and services in the downstream market. Following the example above, as third-party developers can publish their games and content on Nintendo eShop, Nintendo decides how much it costs to publish games in its platform and it can make coding on its platform more or less easy.

Economists have studied these situations under the model of "raising rivals' costs," when a vertically integrated entity, in this case a digital platform, has the ability and an incentive to raise the costs of third-party sellers in order to benefit their own products and services downstream. Under this theory, the digital platform would lose profits in the upstream market, but it could make its own products more attractive in the downstream market by forcing competitors to increase downstream price, or even leave the market entirely. For example, Nintendo could decide to increase the cost of publishing third-party games on Nintendo eShop, which would make the platform less attractive to third-party sellers, and lower profits of Nintendo eShop, in order to drive more users towards Nintendo games.

However, compared to traditional one-sided businesses, digital platforms might have lower incentives to raise rivals' costs. This is because raising rivals' costs would be profitable only if the increase in profits in the downstream market were larger than the losses suffered by making the platform less attractive, and digital platforms create most of their value by facilitating interactions between buyers and sellers in the platform. With digital platforms, not only would third-party developers be less likely to publish games for Nintendo, but the Nintendo platform would become less attractive to consumers as well, making the platform even less valuable for third-party developers. Such a downward spiral is the result of a defining characteristic of digital platforms—indirect network effects—which implies that the more sellers the platform is able to attract, the more attractive the platform becomes to buyers. Similarly, the more buyers there are using the platform, the more attractive it becomes to sellers.

More generally, actions and behaviors that decrease the attractiveness of the platform for third-party sellers (*e.g.*, raising costs) would reduce the value of the digital platform to buyers, and conversely actions and behaviors that decrease the attractiveness of the platform for buyers (*e.g.*, showing them inferior products, deterring innovation or entry) would reduce the value of the platform to third-party sellers, potentially creating a destructive loop that would lead to a platform less valuable for both sides. Those dynamics therefore limit the incentives to raise rivals' costs, compared to a traditional framework.

B. NEW INSIGHTS

Over the last couple of years, economists have started studying the competitive effects of so-called self-preferencing behaviors. They have analyzed how such behaviors would affect consumer surplus and welfare in a variety of contexts and modelled the effects of proposed remedies and regulations. While this research is still nascent, its results are so far mixed and ambiguous overall. Such ambiguity reflects that the effects of self-preferencing on

competition are not obvious and may vary on a case-by-case basis. They also suggest that blanket regulations could have unintended consequences, as the risk of benefiting competitors but not consumers is substantial.

Considering different types of self-preferencing, Gilbert (2021) models the effect of a structural or functional separation of a marketplace from its downstream activities. He finds that, from a theoretical perspective, such remedies have "complicated welfare effects."[69]

From an empirical perspective, most of this new strand of literature has focused on the competitive effects of platforms operating in dual mode. For instance, in a 2021 working paper, Lee and Musolff find that while Amazon displays its own products above those of third-party sellers in its marketplace, doing so results in greater consumer welfare because consumers do prefer those products.[70] As a result, Amazon's higher ranking of its own products reduces search costs and increases price competition. The authors also caution that in the long run, such increased price competition could reduce entry in the market. Another working paper, Lam (2022), creates a model in which a platform operating in dual mode ranks its products randomly on its marketplace.[71] Using Amazon data, Lam similarly finds that a random ranking of Amazon's products would decrease consumer welfare, reflecting that the current ranking is beneficial to consumers. Lam further finds that preventing Amazon from operating in dual mode would increase third-party seller profits but decrease consumer welfare due to reduced price competition.

Others are more cautious or offer ambiguous results. For instance, De Corniere and Taylor (2019) find that whether self-preferencing on search results benefits or harms consumers depends on how the incentives of the consumers and the platform align.[72] A recent working paper by Devesh Raval, Deputy Director at the FTC, documents Amazon's self-preferencing behavior in its choice of default merchant for the Amazon Buy Box, favoring products fulfilled and shipped by Amazon over third-party sellers, and discusses how different remedies could affect consumer surplus.[73] Raval argues for a separation of Amazon's platform, its retail service, and its fulfilment service, over a ban on self-preferencing, which is hard to identify, but warns that the former policy "would remove any efficiencies generated from vertical integration, which could lead to higher prices or worse quality for consumers." Last, Hagiu et al. (2021) show that while a ban on dual mode would benefit third-party sellers, it would often harm consumer and reduce total welfare.[74]

Researchers have also studied the effect of remedies preventing platforms from relying on data from third-party sales to introduce their own private label products. Madsen and Vellodi (2022), based on a theoretical model, find that a ban on this type of self-preferencing behavior would have mixed effects: It would stimulate innovation in product categories where there is "significant upside demand potential," but it would reduce innovation otherwise.[75] They instead argue for "data patents," which would limit the platform's ability to use third-party sales data for a limited time instead.

IV. CONCLUSION

Self-preferencing behaviors by digital platforms are, and are expected to continue to be, a topic of focus to both regulators and economists. While these types of behaviors are commonplace across non-digital businesses, the ability of digital platforms to favor their own products has become a focus of legislators and regulators in recent years, and legislation and regulations aimed at curbing such conduct have passed and will continue to be considered in many countries. This expanded focus and these shifting regulatory regimes have sparked new focus by economists trying to understand the potential impact of regulating these platforms. A review of this literature advises caution, as no consensus has been reached on whether limiting platforms' ability to self-preference would benefit consumers, and a careful analysis of both the static and dynamic impact of proposed legislation is advised. This is because, oftentimes,

digital platforms provide goods and services that consumers enjoy, and because these platforms, by nature, are able to bring together buyers and sellers, facilitate interactions, reduce search costs, and reduce prices through intense competition.

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