Online Platform Dominance: The Case for "First Viewer" Advantages

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Abstract

Big digital platforms or "Big Tech" companies are the object of extensive academic research, competition policies, antitrust proceedings, and new regulatory framework proposals. We investigate the hypothesis that large platforms have at least a temporary monopoly on access to a large variety and volume of data. We identify three basic first-viewer advantages that improve next-period forecasting accuracy. A large platform provider can use these informational advantages to shape its platform rules to keep their platform advantages. We offer three specific public policy recommendations to improve social welfare that are in line with those advanced by some policymakers.

Introduction

In recent years, big digital platforms or "Big Tech" companies, such as Amazon, Apple, Google, and Facebook have been the object of extensive academic research, antitrust policy proceedings and new regulatory framework proposals. Among others, two basic questions frame the investigations: 1) Why have they reached and maintained for decades such a large presence in the online economy, without having been targeted by antitrust authorities; and 2) Are they using their market "dominance" to shape intermediated markets in ways that exploit both customers and clients, who also act as competitors in one or more these markets? The basic hypothesis, outlined both in the US and in the EU antitrust agencies,[1-9] is that

these platforms act as "gatekeepers" to critical products and services, applications, and data. These advantages give them the potential to maintain dominance across many intermediated markets, thanks to emerging *tipping* equilibria.[10]

Among *tipping* and other issues surrounding the current policy debate we focus on the following issue:[11,12,13] how is it possible to balance the value of platform incentives to gather and process information with the "insider-trading" advantage that follows from their informational advantage? The intuition behind, this question is that when a platform is large enough, a sort of "insider" or "anticipatory trading" could reduce market competition for customer sales. It can also delay innovation or shape it in a certain direction because the large platform can identify innovation winners before everyone else, set the rules of emerging relevant markets, and purchase them at a discounted price or anticipate/replicate their services to capture and foreclose their potential market. In both cases, in effect the large platform allows startups to bear the risks associated with innovations and captures much of their future return. Hands-off, antitrust clearance of many "killer mergers" between Big Tech and start-ups have been highly criticized precisely because of the possible pre-emption rationale especially through strategic "killer" mergers.[14] However, beside killer mergers, there might be, potentially, several other pre-emptive behaviors by Big Tech, based on the strategic access to insider asymmetric information on future business opportunities such as "private labeling."

This paper focuses on insider or anticipatory trading by large platforms but questions the current line of analysis which focuses on their ability to foreclose markets because of their asymmetric access to immense and growing databases. A key question is whether large databases allow large platforms to monopolize portions of the online economy. The answer is by no means simple. Statistical theory and empirical evidence suggest that there are diminishing returns to more data[15] and that data itself is not an essential facility because it might be reproduced or replicated to some important extent, also through multihoming behavior. Moreover, there is a large aftermarket for data and many external sources for data, including government sources, which are free.[16] Because of incomplete property rights to personal data, many data sources may be underpriced, while the value of these data sources, once collected by a platform seems enhanced by its ability to minimize "leakage externalities" to improve algorithmic learning advantages.[17] Many types of data have short useful lifespans because behavior changes and new products and services change market demands. Lastly, data does not automatically translate into innovative ideas. Google overcame

Yahoo because it used online links to develop an innovative search product, thus framing innovation as a "one click away" competitive process.[18]

Processing data may also not be necessarily a barrier to entry in a data-driven market. Many companies offer cloud-computing services, which include algorithms for processing data. In effect, high startup costs for developing data processing centers might be unnecessary to enter a digital market for data driven products or services. Because of fierce competition by cloud-computing companies, one would expect the rental price of these services to be fixed at long-run marginal cost.

The hypothesis offered in this article is that large platforms enjoy at least temporary monopoly on access to a large variety and volume of data that gives them a permanent and non-replicable dynamic "first viewer" advantage. This advantage allows them to have a temporary asymmetric insider's advantage on valuable information, like those financial traders try to accomplish. As a result, they have a permanent relative advantage in forecasting accuracy and in anticipating business opportunities.

We posit that this advantage occurs because a large platform gathers large amounts of disaggregated data early before their competitors. It allows them to fine-tune their forecasts, including the ability to predict, and then even shape, structural market changes, ranging from identifying temporary to permanent changes in demand patterns for existing services. It also allows a large platform to identify and anticipate market opportunities for new products and services. These advantages continue even if the data they gather are available to the public or become available with a fixed delay.

If this first viewer hypothesis is correct, to countervail this temporary insider-advantage, we propose three specific public policy recommendations:

1. Regulators should require platforms to give potential acquisition targets a history of purchase prices and current valuations of purchases in a transparent and verifiable way.
2. Arguably, the platform should offer enough information for the target company to know if it is doing unusually well compared to similar companies.
3. At the aggregate level, the regulator could collect real time information and make it publicly available, or it could require platforms to sell categories of aggregate data that do not give away the platform's internal operations.

We believe that these recommendations are consistent with emerging recommendations by policymakers based on the idea that data availability will improve social welfare. Recent studies have underlined how allocations

in which data is used extensively show faster long-run rates of economic growth.[19-22]

The paper is organized as follows. Section 1 summarizes the economic literature focusing on the value of data and the imperfections in data markets. We suggest that these contributions do not entirely capture the value of temporary but privately held platform data. Section 2 describes our proposed statistical tests to identify specific but temporarily available value propositions that give large platform a permanent advantage in specific segments of the online economy. Section 3 describes how to develop and implement tests to determine the influence on market power of three separate advantages of having a large privately held database for a specific online market segment. Section 4 analyzes the implications for antitrust policy, which needs to trade off the value of investing in information to improve market efficiency with an "insider's" view of the market that can lead to exploitation. Section 5 concludes by summarizing findings and offers policy recommendations.

Literature Review

Information availability affects market behavior. The economic literature on first mover advantage shows how the success of this strategy largely depends on the imitation race by late comers due to the degree of observability and on other institutional constraints such as Intellectual Property Rights (IPRs) regimes. When imitation by late comers is very likely (in this case by large platforms), early introduction of innovation might be strategically delayed. In turn, this implies that the innovation revealed by first movers is observable or not protected by IPRs.[23] Thus, the nature of observability (i.e., asymmetric information) attached to innovation is an essential feature of first mover advantages. The same, may happen with first mover strategies based on strategic mergers decision, such as the well-known case of "killer mergers" by an established big tech platform. Strategic decision making may induce marginal firms to wait another period to learn how the market is evolving or approach another potential buyer to learn if others in the market had access to relevant information.

When it comes to online platform dominance, the case for dynamic first mover advantages are largely affected not only by the information available in the market but also, and to a larger extent, by the economies of scale and scope that the single dominant firm may develop internally thanks to exclusive access to relevant data. Despite the concerns that large online platforms have information advantages, the literature on their informational advantages has produced an ambiguous view of whether and how to regulate data collection, processing, and access by third parties. This brief summary

is intended to draw out these ambiguities and to offer a new approach to investigating the data advantage effect.

We begin with the case that large online platforms have informational power that should be curbed. The growing concern with large online platforms was energized by recently nominated FTC Chairman Lina Khan's reintroduction of the neo-Brandeisian notion that big companies have market and political power that could undermine competition and democracy.[24] Khan recommends a list of screens for assessing whether a merger would lessen competition. Among them are control over data and gatekeeper bottlenecks. Another recommendation was to evaluate the effects of a merger on the ability of the merged firm to peer into a competitor's operations. She also suggested that features of utility regulation such as non-discrimination could be effective, including a data sharing requirement of a company offering an essential service.

The concern with a few large platforms dominating the online economy spurred proposals for reform in both the United States and Europe that focus on data access regulations to reduce platform informational advantages. In the United States, the Nadler and Cicilline Staff Report[25] warned that platforms have access to competitors' data, which gives them an unfair advantage in the marketplace.[26] They can surveille other businesses to identify potential rivals, buy out, copy, or cut off their competitive threats.[27] The competitive advantage extends to the customer side of the market. According to the report, large platforms "can target advertising with scalpel-like precision, improve services and products through a better understanding of user engagement and preferences, and more quickly identify and exploit new business opportunities."[28] This produces a self-reinforcing effect of drawing in more customers and generating more data. The report claims that large platforms benefit from returns to scale in information because they can update information for hundreds of millions of platform users at the same time while a small website reaches only a small percentage of online users. Data-driven revenue allows platforms to offer free goods, which gives them a further advantage in the marketplace.[29] The power of platforms to influence regulation and antitrust legislation is also apparent to the authors of the report: "by funding academics and advocacy groups, the dominant platforms can expand their sphere of influence, further shaping how they are governed and regulated."[30]

European nations, some of them with their history of government invasions of privacy and national fragmentation, and the European Union are extremely wary of U.S.-based and China-based platforms dominating their online economies. According to the European Commission on data strategy "a small number of Big Tech firms hold a large part of the world's data. This

could reduce the incentives for data-driven businesses to emerge, grow and innovate in the EU."[31] Moreover, the European Commission expressed concern that large platforms have control over massive amounts of data without sufficient safeguards for individuals. The proposal was to find a European way of balancing the flow and wide use of data, while preserving high privacy, security, safety and ethical standards.[32]

The European commission on antitrust has recently launched new antitrust suits against Google[33] and Amazon because in its view, these platforms advantage to benefit their own business operations at the expense of companies that use its platform for trading goods and services.[34,35]

Hal Varian, an emeritus professor from University of California, Berkeley, and current chief economist at Google offers a starkly different view of online data flows and processing. He points out that data processing, once a capital-intensive undertaking, is now available through cloud services offered by Amazon Web Services, Google Cloud Platform, or Microsoft Azure Cloud.[36] In effect, the upfront costs of data storage and processing have gone away, replaced by variable costs associated with accessing cloud services. Moreover, cloud computing services offer a wide variety of machine learning software packages that reduce the need for trained software developers.[37] Intense competition among cloud service providers should lead to competitive prices and innovative services offered to customers.[38]

Varian also questions the importance of data concentration of large platforms. From a statistical perspective, he invokes sampling theory to suggest diminishing returns for collecting additional data.[39] An article in Fast Company[40] listed 121 data brokers and pointed out that "By buying or licensing data or scraping public records, third-party data companies can assemble thousands of attributes each for billions of people." The question is whether the price of information should be very different than the marginal cost of platforms acquiring data directly. The number of data vendors suggests a competitive market. The academic literature suggests that vendors can acquire web-based data at deep discounts. Acemoglu et al. and Bergemann et al., for example, studied privacy and data markets.[41,42] They note that similarities among people lead to selling or giving personal data away because others are selling it anyway. One could also reasonably claim that many datasets have a short economic life, which again limits the value of huge stocks of data.

Nonetheless the availability of large datasets, Jones and Tonetti[43] state that firms may hoard data in socially inefficient ways to prevent the creative destruction process from affecting them.[44] We take a somewhat different view of the problem of data accessibility. We suggest that it is not the stock of data that gives large platforms an advantage. Instead, they have the

temporary advantage of seeing data before other data users.[45] As a result, they have a permanent informational advantage over competitors. This temporary advantage is akin to having insider information. As with controversies surrounding insider trading of securities, the same issue arises: does this insider information increase or decrease market efficiency? The answer is by no means clear as Bainbridge explains.[46] Marciano, Ramello and Nicita support Bainbridge's conclusion by noting that it is hard to reconcile under a unified framework the "efficiency of the market" with the "efficiency of the platform."[47] Competitive markets, through pricing and promotional tools, make information, in effect, a free good. This is the invisible hand at work. By contrast, platforms are market makers with very visible hands that seek to capture rents from information. Our contribution is to focus the discussion of information asymmetries on access to current valuable data.

Building Testable Hypotheses of Market Power Based on First Viewer Advantages

In this section, we identify three sources of gain from having a temporary monopoly on access to market data. Afterwards, we introduce simplifying assumptions that help develop a tractable model that highlights how a large platform achieves its objectives.

The difficulty in testing informational market power is that no clear framework exists for doing it effectively. Petit and Teece summarize the problems.[48] Current tests of market power rest on traditional micro theory, which is a static analysis of a company trying to coopt an existing rent by reducing output and raising prices. Competition in the online economy is for future rents available by capturing new markets. The price variable has lost informational content. Many of the strategies involve offering free services in exchange for information. When prices are charged, they are sometimes levied on one side of the market while the other side receives free service. Therefore, price/cost margins on one side of the market do not provide an accurate picture of monopoly pricing or predatory pricing. Output measures are also difficult to define. Many services such as "search" and content are developed from bits of data that can easily be reshaped. Platforms offer bundles of seemingly unrelated services through operating systems that are continually updated to appeal to evolving customer needs.[49] As a result, the current tools used by regulators to identify market power such as the Herfindahl index for market concentration and the SSNIP test that identifies market power by the ability to raise prices don't work well in the online environment. They assume a fixed product market.

The problem is that information competition in the online economy spans many products. Petit and Teece point out that Game Theory and

Multisided Market theory have failed to capture the complexity of the online markets because they require too much exactitude about firms' strategies.[50] The Schumpeterian and Austrian schools fare little better. Although they focus on future rents as the basis of competition, they do not offer testable hypotheses.

Our contribution is to describe the difficulties for developing testable hypotheses of information market power and suggest ways to formulate them to identify anti-competitive first-viewer advantages. The hypotheses should apply across major platforms such as Amazon, Facebook, Apple, and Google. Yet each major platform has a different core function that produces different data flows. Amazon's core is transactions; Facebook's is social media interactions; Google's is search; Apple's is devices and related apps. All of them overlap in function as they grow. For example, Google's biggest search competitor is Amazon's internal search engine. Apple and Google compete for mobile users and apps. They are all in the cloud computing business. They are all offering video services.

Because platform datasets overlap to some extent, we believe testable hypotheses for first viewer advantages fall into cross platform and within platform categories. Cross platform hypotheses would investigate whether a large platform has a non-reproducible first-viewer data advantage for a particular type of data. The investigation should not be limited to other major platforms. Credit card companies and Internet Service Providers also collect, use, and sell data. The cross-platform inquiry should also investigate whether strategic actions can harm a competing platform such as Apple's decision to ask users to opt-in to allowing Facebook, for example, to track a member's use of a third-party app. This decision was one of the reasons Meta's stock prices tanked in 2022.[51] However, Facebook quickly recovered by using Apple's accelerometer data, or information automatically recorded and sent to an app owner to adjust screen orientation as users move the phone around. This information combined with data from a user that has opted in to being tracked by Facebook allows Facebook to identify any user's location.[52]

The within-category would include first viewer advantages internal to the platform such as Amazon observing new product developments or Google managing advertising auctions. The within category should focus on core sources of a platform's revenue stream. It would also make sense to use a structural screen to limit the scope of investigation. For example, data gathered through cloud computing is unlikely to produce a first viewer advantage because the biggest provider, Amazon, only has a thirty percent market share.

Once the target investigation is set, the next issue is developing a strategy for collecting data. This raises a host of very difficult questions to answer that also have policy implications. The meaning of first viewer advantage is a starting question, and possibly the easiest one to answer as discussed below. A much thornier issue is that data are not a single commodity, and many types of data are related to each other, so the valuation of a particular data series and its cost are difficult to estimate. Ultimately, data are transformed into useful information. One can imagine information as a function of raw data and artificial intelligence (AI) to convert the raw data into information. Information spans several types and datasets, and AI can even impute values for missing data with varying degrees of accuracy. Market power exists when in real time an important dataset that can impair competition is not reproducible. Finally, information can serve as an input to decision making; it can also be pieced together into a final product such as video content sold to the public such as late-breaking news. To make any headway, these issues are discussed in more detail below: defining first viewer advantage, the typology of data to be investigated, defining counterfactuals to evaluate market power, and identifying essential data for competition to exist.

Defining First Viewer Advantage

The first issue is to define "first viewer advantage." We suggest that this measure of time should be connected with generating revenue in a spot market. For example, Google's AdWords auction produces revenue from weekly auctions in exchange for bidding the value of clicks.[53] The actions taken as a result of the auction should be part of the investigation. It would lead to determining whether self-preferencing by a platform is still occurring. It would also highlight the value produced from the first viewer advantage that could inflate access fees or other forms of market manipulation. For example, the Google advertising auction may result in well-timed and well-chosen ad placement that provides information to encourage a customer to access a website. On the seller's side, "first viewer" translates into accurate, quick updates about existing and new product features, availability and price that are critical for purchasing decisions. From a platform's financial perspective, being a "first viewer" allows it to extract fees for services and monitor apps and other products and services that may be profitable to acquire. When the platform shapes data unfairly, "recent" data can lead to suboptimal purchases. When a platform extracts excessive fees, it may harm future incentives to participate in the online economy. Yet, from a market perspective, excessive platform fees and distorted information for platform gain could still be a net benefit to society by reducing transaction costs.

The "first viewer advantage" becomes more difficult to quantify when it applies to purchasing new companies with promising new products. The time span may stretch out, but the key idea is that the time span is long enough for the platform owner to have better information than the new company about its prospects.

Finally, even a small "first viewer advantage" that spans a large number of products will reduce the platform's forecasting error of general market conditions compared to rivals. This nature of this benefit falls into three categories: First, it reduces aggregate forecast errors for a product class. Second, rich cross-sectional data helps identify emerging high-performing products within a product class. Third, a broad range of data drawn from product classes help identify structural breaks in business activities. From a social welfare perspective, requiring a large platform to share data or being required to sell it may improve overall economic performance.

In summary, all things held equal, the platform with the freshest, most extensive data will have a variety of forecasting advantages. At the macro level, extensive and fresh data will improve aggregate turns in the online economy. At the micro level, it will help the platform identify high performing companies or emerging social patterns that can allow the platform to purchase startups at a discount, and potentially have an advantage running internal auctions.

Defining Data Typology

Another important challenge for both within and between platform data competition is to understand the typology of data. It is not a uniform product. Data such as medical records are industry specific. Its value depends on usefulness time horizon. A person's driving location may have value to local gas stations but only for a short time. The level of aggregation is also important if customer specific information is critical to decision making. Aggregated data may require collateral data to uncover specific customer information. The value of a particular dataset is in relation to other datasets, and their availability.[54]

Data of different types can contain overlapping information. Methods of gathering data may be different but yield similar information. For example, volunteered data, observed data, and inferred data may produce similar information. Data can be broken into functional use, but here again, functions overlap. For example, similar data such as personal identifying information are used for payment, search, connecting devices, profiling customers, and defining social groups. Another possible categorization for privacy purposes is whether the data are personal or impersonal. Again, impersonal data such as purchases, travel routines can describe a person's

profile accurately. The suggestion is to identify key data features that support a platform's core businesses. In some cases, the data may be apps, and then to determine if other platforms have similar information.[55]

Defining Counterfactuals

Platforms make their money by managing and selling information either directly to others or using it internally to gain an edge in the market. Sometimes conduct may impair a competitive market even if its conduct crosses over a difficult to define frontier between fair competitive rivalry and breaking rules of fair play. This is also an extraordinary difficult issue with acquisitions or private labeling because it typically involves counterfactual information – what would have happened if the company did not employ a certain information use strategy. A major issue is whether the major platforms are using insider information to buy new products and services below their market value to either short circuit future competition or gain a complementary product that even the owners do not know its true value. It is no surprise that Facebook, for example, acquired Instagram and WhatsApp because they either complemented or represented a threat to Facebook's dominance in social media.

The issue is whether the platform extracted rents unfairly from its acquisitions. That would depend on the cost of reproducing and developing a competitive product. For example, when Facebook purchased Instagram for $1 billion, it had only thirteen employees.[56] An investigation could focus also on whether Instagram would have succeeded on its own or whether it succeeded in part because of Facebook's resources. This would require understanding both the market information available at the time to both companies and the resources they had available to compete against each other. Interviews with Instagram's thirteen employees would be a starting point. The analysis should extend to all successful and failed Facebook acquisitions. The rise of Tik Tok also suggests that an innovative approach to social media can overcome the benefits of having many customer accounts and can succeed without a large platform's resources. An analysis of Tik Tok's path to success could serve as a counterfactual to a platform-centric investigation.

Amazon has private labels and purchases companies.[57] The issue is whether Amazon's private label products accounts for either a growing percentage of its sales on its platform as it acquires high performing products or that the acquired companies grow faster than other companies using Amazon's platform. Either pattern would suggest that a first viewer advantage led platforms to dominate specific types of products and services.

Hazlett presents a chart showing that the percent of Amazon's gross platform sales by non-Amazon sellers is growing.[58]

Historical data shows that in 2020 Amazon offers 12 million of its own products across service categories and 353 million products available on its platform when factoring in Amazon Marketplace. Amazon reported more than 200,000 new third-party sellers that began selling on Amazon's platform in 2020. This was a 45 percent increase from 2019.[59] Zhu and Liu conducted empirical research to explain when Amazon decides to offer its own product to compete with a product already traded on its platform.[60] They found that Amazon enters 3 percent of complementor product spaces over a 10-month period. They are more like to enter spaces with higher product sales and better reviews and that do not use Amazon's fulfillment services. They also find that Amazon is less likely to enter product spaces that require greater seller effort to grow. While their dataset includes more than 163 thousand data points, the pseudo r-squared of the models are only in the 3-5 percent range. At best, their conclusions are suggestive.

The overall picture remains unclear. More investigation is necessary. One should also investigate the relative growth of the acquired products and determine if Amazon is earning unfair rents from acquiring them.

For between platform competition, a good empirical strategy would test whether the competition for new products and services leads to platform dominance or contestable platforms. Empirical evidence on this front also presents a complicated picture. For example, Google's Chrome overcame Microsoft's Internet Explorer, but when Google tried to enter the social media space with Google+, it failed. Arguably, Google had similar data to Facebook's through their advertising auctions. An investigation of the failure could point to limitations in processing data to enter new markets. Despite this failure, an examination of each company's Form 10-K report (in the competitors' section) suggest that each platform is openly telling the financial market that it is trying to enter or to grow in the markets of the others.

Identifying Essential Data

A related issue about unique insider information is when can it be defined as essential for competition to exist. The challenge begins by defining "essential." This is a difficult issue because many investigators have said that one can extract personal data from anonymized datasets. A starting point is to examine multihoming, which leads to overlapping datasets. Google cites Amazon's internal search app as a major competitor. Mobile companies capture location data in real time, the same as Google through Google Maps. Credit card companies capture purchase data as does Amazon. Until recently,

Facebook was able to gather data from third party apps available on Apple smartphones. The point is to understand the availability of data streams.[61]

Empirical Strategies: Summary

The basic empirical strategy we propose is first to identify a platform's core revenue source. Next, match core revenue with key datasets. Then examine how quickly that information is disseminated within and outside the platform. A second stage of the analysis would investigate how the data are processed to determine if privacy or inside information rules are being transgressed. Finally, the investigation should quantify the net gains from each stage in the information chain leading to platform decisions. In the case of acquisitions, the focus should be on the available information to the platform and the acquired company at the time of the acquisition. The objective is to gauge the asymmetric information in favor of the platform. All of these investigations would be suggestive. Just because a platform has an informational advantage, it does not mean that it is an unfair competitor. Competition is a struggle without physical combat or forearms.

Policy Implications

Identifying unfair use of data flows is very difficult because data are not a single commodity. Nonetheless, our analysis identifies four broad possible sources of permanent gains associated with controlling a large platform that could focus market power investigations. First, the gain from forecast variance reduction, which allows a large platform to predict its resource needs more accurately than its competitors can. Second, it can identify structural breaks in the market that lead it to shift resources because of an unexpected market change. Third, it can identify new business prospects faster than its competitors. Fourth, it may shape both technical and business rules to shape emerging markets, so as to leverage its dominant position.

Our proposed methodology can help estimate first viewer advantages by focusing on the forecasting benefits of viewing data first. We hypothesize that first viewer advantages can help to explain why large platforms have remained dominant for long periods even if its unique set of data or substitute data become available with a short lag. It can also explain why other large platforms cannot invade their market segment because of informational disadvantages, further boosted by large network effects. This first-viewer advantage predicts that platforms will compete mainly for former niche markets which have grown in size or wholly new markets such as the ones recently analyzed by the European Commission in recent antitrust suit against Amazon and Google.

A key first step is to gauge a large platform's potential informational advantages by using the empirical strategy we propose. The basic suggestion is that the informational advantage of large platforms is positively correlated with "first viewer" data that gives a platform an informational advantage that lowers its forecasting variance relative to the other parties it transacts with. This advantage should be most pronounced when a platform such as Google manages an internal market – an auction in Google's case – or in Amazon's case has an insider's view of newly emerging markets where innovation is high, and demand is associated with early adopters. If true, large platforms capture so-called *Schumpeterian gains*. The effect of this advantage could be large enough to inhibit innovation by lowering the rents from innovation and by delaying innovations until new entrants have enough funding and experience to negotiate on a more equal footing with large platforms.

Assuming the platform advantage is real and significant, policymakers then need to consider the tradeoff between allowing platforms to maximize the value of their data, which should be correlated with identifying customer and supplier needs more precisely, and their use of it to have as an insider to exploit market participants. Too much dominance could reduce market efficiency by giving one participant a one-step advantage. It could also reduce future competition by allowing the large platform to purchase potential competitors early on at a discount.

If the first viewer advantage is significant, perhaps a step forward for online regulation could be to force a large platform to disclose data at frequent intervals and allow the Department of Justice to review small company acquisitions. This process could allow the small company to learn more about the value of their market opportunity. The downside is that it might make small company acquisitions costly to large platforms. This could prevent large platform benefits being used to grow the promising firm. Nothing is simple and there are always trade-offs.

Looking at the new European regulatory proposal named as "Digital Markets Act," acknowledges elements of online market behavior that appear anticompetitive. For instance, "gatekeepers" will no longer be able to engage in the now widespread practice of cross-referencing their users' personal data with data obtained through other gatekeeper applications or collected from third parties, such as data brokers or commercial partners. They will also be prohibited from systematically signing in end users to other services in order to combine personal data unless the end user has expressly consented to it. Moreover, gatekeepers will be prohibited from giving priority to their own services in their search engine results and may not use data generated through business user activities in order to compete with business users. Finally, data relating to searches performed by users on the gatekeepers'

search engine should be provided, upon request, to other online search engines providers on fair, reasonable and non-discriminatory terms. Advertisers and publishers must be provided, upon their request and free of charge, with access to the performance measuring tools of the gatekeeper and the information they need to carry out their own analysis.[62]

Conclusions

The current discussion of large platforms' control over huge databases is perhaps misplaced. There are many sources of data available and cloud computing competition has made processing data inexpensive. This does not mean that large platforms are benign players in the online market that preclude any effort towards regulation because it may reduce economic efficiency and incentives to innovate, as generally argued by platforms advocates. Market efficiency is always coupled with generating, sooner or later, information as a public good. In the platform economy, it seems the timely and asymmetric access to information by Big Techs may hinder newcomer competition, generating incentives to shape new market structures and innovative processes in a way that increases the centrality of the big platforms. We suggest that their access to time-sensitive data before other market participants yields a permanent advantage in the marketplace and that this kind of information asymmetry is indeed the very source of dynamic "market power." If the return is extraordinary, even if passed on by lowering prices, the platform may produce negative externalities that lower market competition and potentially innovation. This does not entail "de-verticalization" processes, but rather levelling the playing in accessing relevant information. Somehow this is the opposite of Coase[63] who argues that vertical integration is better suited when the cost of knowing market price is very high: here, the benefits of platform conglomerate integration rely on its ability to forecast markets, prices, and market prices before they occur. Instead of relying solely on screens to identify market power, we propose an empirical testing strategy to identify pockets of market power based on temporary informational advantages. Once identified, perhaps a way forward is to recalibrate the terms of time-sensitive data disclosure by large platforms. It will be a delicate balancing act because it is difficult to measure the tradeoff between generating new information and exploiting it.

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Endnotes

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