

ZERO-PRICE PLATFORM SERVICES: THERE IS NO FREE LUNCH IN APPLYING THE “NO FREE LUNCH” PRINCIPLE



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The well-known economic principle that “there is no such thing as a free lunch” (“NFLP”) has enjoyed a recent revival in the assessment of digital markets in antitrust. There is a belief that NFLP implies zero-price platform services must somehow be “paid for” by consumers in some manner—such as the loss of privacy and valuable data. Others have gone further, asserting that consumers are not only made worse off by the data collection and use that attend zero-price platform services, but that this state of affairs necessarily points to a lack of competitive alternatives. Both assertions are invalid, pressing the NFLP beyond the limits of logical inference. Inferences about who pays resource costs, and whether those payments reflect market power, are empirical questions as illuminated by other economic principles. Answers to such critical questions cannot be plucked from an NFLP magic hat. The NFLP is the truism that, at the margin, any benefit must come at some cost; economic resources must be expended, and *someone* will have to cover those expenditures. But the NFLP does not, without more, specify *who* bears the costs. The potential error here is a subtle one, but with profound consequences. It is wrong to conflate the resource costs required to provide a service with the effective price paid by those receiving the service. The NFLP does not imply the two must be equal.

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There is a well-known economic principle that goes by the acronym TINSTAFL, meaning “there is no such thing as a free lunch.”² Hereafter, we simplify the acronym to the NFLP (“no free lunch principle”). The NFLP is the truism that, at the margin, any benefit must come at some cost; economic resources must be expended, and someone will have to cover those expenditures. But the NFLP does not, without more, specify *who* bears the costs.

If a friend treats you to lunch, the lunch is free to you, but your friend must pay. It would be invalid to infer from the NFLP that in fact you are paying for the lunch, perhaps by enduring your companion’s unpleasant company in exchange for food and drink. That might be true but need not be. In the context of friendship, lunch — however procured — typically is win-win. This is an example of the fundamental economic principle that voluntary trade tends to benefit both parties to the exchange. Trade is not a zero-sum game.

What can be reasonably inferred from the lunch, based on the gains-from-trade principle, is that companions voluntarily participate in a lunch because each one benefits on net from the interaction, in non-pecuniary or pecuniary terms. And based on the closely related economic principle of revealed preference, the one paying for the lunch can be reasonably inferred to value the interaction by more than the amount paid.

It appears, however, that the NFLP has been misunderstood and misapplied in the context of zero-price platform services. Some have asserted that the NFLP implies zero-price platform services must be paid for by consumers in some other way, such as the loss through data collection of privacy valued by consumers.³ Others have gone further, asserting that consumers are not only made worse off by the data collection and use that attend zero-price platform services, but that this state of affairs necessarily points to a lack of competitive alternatives.⁴ Both assertions are invalid, pressing the NFLP beyond the limits of logical inference. So broad is the scope of the NFLP that it applies to itself: there is no free lunch in applying the No Free Lunch Principle to zero-price platform services. Inferences about who pays resource costs, and whether those payments reflect market power, are empirical questions as illuminated by other economic principles. Answers to such critical questions cannot be plucked from an NFLP magic hat.

Providing zero-price platform services is of course costly. By the NFLP, the platform itself, or participants on another side of a multisided platform, may bear those costs when consumers pay nothing. But, once again, it would be invalid to infer from the NFLP that *consumers* necessarily pay for a zero-price platform service in non-price ways, such as through data collection with corresponding losses of privacy valued by consumers. As with the case of lunch with an unpleasant companion, that might be true but need not be. What can be inferred (without more) from the observation of a zero-price service, applying the NFLP and with an economic presumption of platform rationality, is that the platform expects to recover the associated resource costs in some other way than charging a price to consumers.⁵

The potential error here is a subtle one, but with profound consequences. It is wrong to conflate the resource costs required to provide a service with the effective price paid by those receiving the service. The NFLP does not imply the two must be equal. On the contrary, by the economics of multisided platforms, the relative prices and marginal costs of platform services may not be equated on any given side of a multisided platform.⁶

In the presence of indirect network effects — that incremental participation on one side of a network yields spillover benefits to another side — those spillovers are optimally considered by a platform when it sets its prices. The higher the spillover benefits generated by participation on a given side, the lower the price charged to participants on that side tends to be, because the platform can monetize the resulting spillovers through prices charged to participants on the other side. If the spillovers are large enough, the price may be zero or even negative for the side that generates those spillovers.

2 See, e.g. The Phrase Finder, *There’s no such thing as a free lunch*, <https://www.phrases.org.uk/meanings/tanstaaf.html> (the phrase “denoted the free food that American saloon keepers used to attract drinkers; for example, this advertisement for a Milwaukee saloon, in *The Commercial Advertiser*, June 1850: At The Crescent...Can be found the choicest of Segars, Wines and Liquors...N. B. - A free lunch every day at 11 o’clock will be served up.”).

3 See, e.g. Jonas Koponen & Annamaria Mangiaracina, *No Free Lunch: Personal Data and Privacy in EU Competition Law*, 9 COMPETITION L. INT’L 183 (2013).

4 See, e.g. MAJORITY STAFF REPORT AND RECOMMENDATIONS, SUBCOMMITTEE ON ANTITRUST, COMMERCIAL AND ADMINISTRATIVE LAW OF THE COMMITTEE ON THE JUDICIARY 18 (“Online platforms rarely charge consumers a monetary price—products appear to be ‘free’ but are monetized through people’s attention or with their data. In the absence of genuine competitive threats, dominant firms offer fewer privacy protections than they otherwise would, and the quality of these services has deteriorated over time. As a result, consumers are forced to either use a service with poor privacy safeguards or forego the service altogether.”).

5 See, e.g. Complaint, *United States et al. v. Google, LLC*, 1:20-CV-03010 (D.D.C. Oct 20, 2020), <https://www.justice.gov/atr/case-document/file/1329131/download> (“Most general search engines do not charge a cash price to consumers. . . . That does not mean, however, that these general search engines are free. When a consumer uses Google, the consumer provides personal information and attention in exchange for search results. Google then monetizes the consumer’s information and attention by selling ads.”). True or not, the Complaint’s allegations are not based on an appeal to the NFLP alone.

6 See, e.g. Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS’N 990, 994-98 (2003) (showing that profit maximization for a multisided platform involves a joint optimization across all sides rather than on any given side).

This principle of balancing prices across sides is largely independent of the issue of platform market power. A platform with substantial market power may charge high prices overall but will nonetheless balance those prices across sides to best internalize spillover externalities and thereby maximize the gains from network participation. Put differently, a platform with market power faces a tradeoff in its price setting between the extraction of rents from network participation and the extent of that participation; higher overall prices reduce overall participation.

There is an analogy here to the classic microeconomic analysis of profit maximization by a firm, which can be treated as a two-stage process wherein “first” the firm chooses the optimal mixes of inputs to minimize the cost of producing any given level output and “then” chooses the output level to maximize profit. Fundamentally, the analysis applies regardless of the degree of market power the firm may wield.⁷ Likewise a platform, whether it has market power or not, can be usefully thought of as “first” choosing an optimal mix of participants on its various sides through relative prices, “then” choosing a magnitude of network participation to maximize profit.

As already noted, some have claimed that a zero-price coupled with data collection in of itself implies that a platform has substantial market power.⁸ This is clearly wrong given the analysis above, despite the seductively counterintuitive allure of this claim. It is precisely because consumers have viable alternatives to which they could turn that a platform, regardless of its market power, is impelled to set a low or zero price to them so as to best harvest the valuable spillover benefits consumers bring to the network.

Nor does a zero price on one side imply that a platform must be exercising market power on another side. A two-sided platform facing vigorous competition on both sides may be impelled by that very competition to price below marginal cost on one side and above marginal cost on the other, yielding the platform only a competitive rate of return. In such a setting of vigorous competition, a platform that fails to balance prices in such a way across the two sides would fail to attract the optimal mix of participants and would thereby offer a less attractive network alternative to that of its rivals.

It likewise would be wrong to infer from pricing below marginal cost that a platform is therefore engaging in predation. The example of printed newspapers is illustrative here. The printing and delivery of a newspaper carry significant marginal costs; the subscription rates charged by newspapers in their heyday may well have fallen short of these costs. But having a large circulation generated substantial revenues from advertising, much of it in back of the news tucked away in a “classified” section. This business model of harvesting spillover benefits to advertising through low subscription rates collapsed as alternative outlets for advertising sprang up — along with a reduction in demand from the reader-side.⁹ But even to this day some weekly papers continue to be available for free. The NFLP implies only that those papers must be recovering their costs in some other way, begging the question of how. It is the economics of multisided platforms that points to spillover benefits to advertisers as a putative answer to the question.

Summing up the argument on market power thus far: In assessing whether (and the degree to which) a platform has market power, applying the NFLP to the observation of a zero-price service can yield no reliable inference without much more.

Returning now to the related question of whether the observation of a zero-price platform service implies that the consumer is paying for the service in some non-price way, meaning that the consumer is sacrificing something *of value to the consumer*, recall that such an inference cannot be drawn from the NFLP alone. Rather, all can be reasonably inferred from a zero-price service together with the NFLP and an economic presumption of platform rationality is that the platform, in bearing the cost of proving the service, must be doing so in expectation of receiving benefits at least as large as those costs.

The NFLP merely points to the existence of such costs; the expected receipt of countervailing benefits by the platform can be inferred from the platform’s rationality as an ongoing concern. The platform’s expectation of the *receipt* of non-price benefits from the provision of a zero-price service is distinct from consumers’ *payment* for the service in non-price ways. This distinction is commonly lost in debates about platform performance. A platform’s receipt of benefits need not equate to a commensurate loss to consumers. As with voluntary trade generally, the transaction of platform services is not a zero-sum game but win-win.

With regard to a platform’s collection and use of consumer data, a relevant question is whether this activity imposes a distasteful burden on consumers or redounds to their benefit.¹⁰ Once again, the NFLP alone cannot resolve this question.

7 If a firm has power in the input or output markets, the prices attained in those markets can change with quantities, but the two-step nature of the analysis still holds.

8 See, e.g. *Hearing on Online Platforms and Market Power, Part 3: The Role of Data and Privacy in Competition*, 119th Cong. 4 (2019) (statement of Rohit Chopra, Comm’r. F.T.C.) (“If the internet were truly competitive, people could vote with their feet and select services that offer privacy and anonymity.”).

9 See, e.g. Seth Sacher, *Antitrust Issues in Defining Markets in the Newspaper Industry*, Dec. 2, 2011, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1967667.

10 See, e.g. Alessandro Acquisti, Curtis Taylor, & Liad Wagman, *The Economics of Privacy*, 54 J. ECON. LITERATURE 442, 445 (2016) (detailing how “individuals can directly benefit from sharing their data. Advantages can be both psychological... and economic: for instance, personalized services and discounts one receives after joining a merchant’s loyalty program; or reduced search costs and increased accuracy of information retrieval one experiences when a search engine tracks them more closely.”).

Some consumer surveys indicate that many users of social media place a low value on privacy,¹¹ which looks to be borne out (revealed preference) by the copious sharing of intimate personal information by many social media users. Such users skew younger, and their preferences with respect to privacy appear to differ from those of their parents and grandparents.¹²

From a paternalistic perspective, it could be argued that platform users should value their privacy more highly, and that therefore government regulation is needed to protect them from themselves. Or, more in line with consumer sovereignty, it might be argued that platform users do value their privacy highly, but are unaware of how much privacy they cede with platform use, or perhaps are deceived into believing the cession is smaller than it is.¹³

This latter perspective might, at best, lend support for a government mandate for fuller disclosure of the privacy policies and effects of platform use, but not restrictions on consumers' rights to choose to cede privacy in exchange for zero-price services.

To repeat, what can be reasonably inferred from zero-price services is that resource expenditures to provide such services are lower than the associated benefits to the platform of widespread adoption by consumers. A principal reason is that the transaction data obtained thereby generates advertising revenue for the platform. Of course, there are different business models as it applies to collecting data. For instance, contrast the approaches that Apple and Facebook take to data collection. Services such as Facebook rely heavily on targeted advertising, and disruptions to the efficacy of that model can lead to significant losses in profit.¹⁴

Apple, on the other hand, seeks to attract users who value privacy and security and implements features designed to cater to those preferences. Even within advertising, Apple has touted the efficacy of its business model in serving ads that are not based on user-data targeting.¹⁵ There is no one-size-fits-all approach to online data collection, however. This idea is perhaps best illustrated by recent regulatory attempts to give consumers more control over their data, which can ultimately lead to unintended consequences that result in an overall loss in welfare.¹⁶

But the fact that advertisers highly value information about potential customers, and that this can generate large advertising revenues for platforms, does not settle the question of whether consumers are burdened or benefited by the collection and use of data. A platform user may be akin to a person who accepts an invitation to a free lunch knowing the unpleasant companionship it will entail. Or, contrary to this analogy, consumers may benefit from the use to which data is put. This is an empirical question.

The impact that advertising has on consumer welfare is a complicated question.¹⁷ This is not surprising if we consider the heterogeneity in ad formats and consumer preferences. Further, consumers' receptivity to ads likely depends on the context and circumstance. Nonetheless, the widespread belief that consumers tend to find advertising unpleasant persists. Thus, there is a natural presumption that consumers exposed to ads are effectively putting up with unpleasant companionship as the cost of a free lunch. Even so, and it is not al-

11 See, e.g. Spyros Kokolakis, *Privacy Attitudes and Privacy Behaviour: A Review of Current Research on the Privacy Paradox Phenomenon*, 64 *COMPUTERS & SECURITY* 122 (2017) (detailing some surveys and experiments indicating that users, often contrary to stated preferences, behave in ways that reveal a low valuation for privacy; although, other experiments find contrary results). See also Acquisti et al., *supra* note 10, at 477-78 (presenting various economic explanations as to why there are conflicting studies regarding the existence of a "privacy paradox").

12 See, e.g. Brooke Auxier et al., *Americans and Privacy: Concerned, Confused and Feeling Lack of Control Over Their Personal Information*, PEW RESEARCH CENTER, NOV. 15, 2019, <https://www.pewresearch.org/internet/2019/11/15/americans-and-privacy-concerned-confused-and-feeling-lack-of-control-over-their-personal-information/> ("[Y]oung adults ages 18 to 29 are more likely than older adults to find acceptable the idea that social media companies monitor users for signs of depression and to allow fitness tracking user data to be shared with medical researchers.").

13 See, e.g. Acquisti et al., *supra* note 10, at 477 ("some individuals may not be aware of the extent to which their personal information is collected and identified online...").

14 For instance, when Apple recently added a "do not track" option to iOS 14.5 (which prevents an app from collecting data once users leave that app), this created a significant, negative impact on Facebook's ad revenues. See, e.g. Michael Simon, *Apple's Simple iPhone Alert is Costing Facebook \$10 Billion a Year*, *MACWORLD*, Feb. 3, 2022.

15 See, e.g. Chance Miller, *Apple: Most iOS 15 Users Opt Out of Personalized Ads; No Impact on App Store Search Ads Conversions*, 9TO5MAC, May 11, 2022, <https://9to5mac.com/2022/05/11/ios-15-users-opt-out-of-personalized-ads/> ("[D]ata from Apple indicates that the average conversion rate between users with personalized ads enabled and personalized ads disabled is nearly identical. For customers who opted in to personalized ads, advertisers see a 62.1 percent conversion rate. Among users with personalized ads disabled, that conversion rate is 62.5 percent.").

16 For example, the EU's General Data Protection Regulation ("GDPR") was passed with great promise. Yet, after two years, evidence is beginning to emerge indicating it has harmed consumers. See, e.g. Rebecca Janßen et al., *GDPR and the Lost Generation of Innovative Apps*, NBER Working Paper No. 30028, May 2022, <http://www.nber.org/papers/w30028> at 2 ("Whatever the benefits of GDPR's privacy protection, it appears to have been accompanied by substantial costs to consumers, from a diminished choice set, and to producers from depressed revenue and increased costs.").

17 See, e.g. Gary S. Becker & Kevin M. Murphy, *A Simple Theory of Advertising as a Good or Bad*, 108 Q.J. ECON. 941 (1993).

ways clear that this is the case,¹⁸ the data collected may deliver better targeted ads and so may not be a net harm to consumers for several reasons.

First, ads targeted to interested consumers are less burdensome, more salient, and more valuable to those consumers. Targeted advertising is a substitute for consumer search, economizing on search costs. Likewise, within an online marketplace, data collected by the platform can ease the time costs consumers face in searching for products matching their preferences and tends to improve the quality of the match. Consequently, data collection and its subsequent use can materially improve the quality of a product for each consumer. Targeted advertising, and the data collection and use that may facilitate it, could be a benefit rather than a burden to consumers. The issue, once again, is ultimately empirical.

In conclusion, let us return to the purported origin of the NFLP phrase: tavern owners offering free lunch to drinkers.¹⁹ While the resources required to provide lunch at taverns are anything but free, there is little basis to believe that tavern patrons who enjoy the free lunch are somehow “paying for it” — in the sense they are giving up something of value for the lunch. The free lunch, in this case, is better thought of as an expense to bring in patrons, have them interact, and stay a while. The end goal is to serve more ale. Similarly, a platform’s end goal in offering zero-price services is, at least in part, to attract consumers to the network and serve more profitable ads. But whether consumers are burdened or benefited by the uses to which data is put, and the degree to which the modern-day platform analogues to the tavern keepers of old have market power—these are fact intensive and economics intensive questions, the resolution of which requires a rolling up of the sleeves. There is no free lunch in antitrust analysis.

18 See, e.g. Navdeep S. Sahni & Charles Zhang, *Are Consumers Averse to Sponsored Messages? The Role of Search Advertising in Information Discovery*, Mar. 2022, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3441786 (“Taken together, patterns in our data are consistent with a constructive role of search advertising where advertising fills significant information gaps by conveying new information, which is difficult for the search engines to gather and therefore missed by their organic algorithms. On average, viewing search ads makes consumers better off at the margin we study.”).

19 See *supra* note 2.



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