HOW TO APPROACH THE CALCULATION OF OVERCHARGE BY MULTISIDED PLATFORMS

BY ROSA M. ABRANTES-METZ & ALBERT D. METZ[1]

1   Albert Metz & Rosa Abrantes-Metz are Principals at The Brattle Group. Abrantes-Metz Co-Chairs Brattle's Global Antitrust and Competition Practice, having previously Co-Chaired its Technology Practice. The authors have worked and testified on carious multisided platform matters in the United States and Europe, on behalf of private defendants and plaintiffs, as well as the U.S. government. The opinions expressed are their own and do not necessarily reflect the opinions or views of The Brattle Group or any of its associates.

CPI ANTITRUST CHRONICLE
JANUARY 2023

Visit **www.competitionpolicyinternational.com** for access to these articles and more!

HOW TO APPROACH THE CALCULATION OF OVERCHARGE BY MULTISIDED PLATFORMS
By Rosa M. Abrantes-Metz & Albert D. Metz

The recent *AMEX* decision has introduced the economics of "multisided platforms," "transaction platforms," "indirect network effects," and "two-sided analysis" into antitrust analysis. As is often the case, sometimes such descriptive words precede any precise, scientific definition. In this brief note, we will explore some generally accepted concepts, how they relate to measures of market power, and how they support the calculation of at least one source of antitrust damages, the price overcharge. We focus on the economics of platforms with a particular emphasis on the different funding models available to two-sided platforms. We have argued that economic profit margins can serve as not only meaningful indicators of market power, but also provide a practically useful quantitative benchmark of the but-for world. That benchmark can be translated into a but-for net (two-sided) price, leading directly to a calculation of overcharge by the platform. While the net price overcharge is uniquely determined for a given profit benchmark, the precise allocation of the overcharge between the two sides can depend on market frictions and the relative strength of indirect network effects and demand elasticities.

Scan to Stay Connected!
Scan or click here to sign up for CPI's **FREE** daily newsletter.

The famous (some may say infamous) *AMEX* decision has introduced and strengthened a great deal of economic jargon into the legal lexicon; "multisided platforms," "transaction platforms," "indirect network effects" and "two-sided analysis" quickly come to mind. As is often the case, sometimes such descriptive words precede any precise, scientific definition. What, after all, is a "two-sided analysis?" For that matter, how – formulaically – are indirect network effects defined and measured? Ask any economist and you will likely get an answer; ask another and you will likely get a different one.

While there may not yet be textbook levels of consensus on several of these points, there are some common ideas in the literature.[2] In this brief note, we will explore some generally accepted concepts, how they relate to measures of market power, and how they support the calculation of at least one source of antitrust damages, the price overcharge. We will necessarily speak in generalities and "typical" circumstances, which is useful (we think), but it must always be remembered that particular cases come down to particular facts and circumstances.

I. FUNDING TWO-SIDED PLATFORMS

By now, many are familiar with the concept of "platforms" and "two-sidedness." Two-sided platforms come in a variety of forms, but broadly speaking we can consider two types. The first is a *transaction platform*. As the name suggests, this platform brings together buyers and sellers. Such a platform can be thought of as a (virtual) store. The second type is a content distributor. This platform allows creators to disseminate content to consumers. Such a platform can be thought of as a (virtual) bulletin board.

These types are probably not exhaustive and are certainly not mutually exclusive. Indeed, one can easily imagine cases which overlap. What if the platform facilitates the distribution of music on a pay-for-play basis? Is that a store selling music (a transaction platform), or a way for musicians to be heard (a content distributor)? It may not matter what label we put on it in any particular instance. This taxonomy, like all others, it is meant to be helpful, and the helpful question is whether the platform in question is more like a store or more like a radio.

Usually, the more interesting economic question is how the platform is monetized. Here, again, we can think of two basic funding models: *transactional and subscription*. A transaction-funded platform collects (and sometimes pays) money on each transaction which takes place; if a dollar changes hands, the platform gets its cut, much like a tax collector.[3] A subscription-funded platform collects (and sometimes pays) money for access, regardless of subsequent participation on the network; think of a cover charge to get into a club.

A credit card network is a transaction platform which is transaction-funded.[4] It brings together buyers and sellers, and then takes a cut of any money which changes hands. Facebook (or Meta, of you prefer), is a subscription-funded contentment distributor. Advertisers pay for access,[5] and users create content to show to other users.

Are all transaction platforms necessarily transaction-funded? They do not need to be, at least in principle. One could imagine a platform which brings together an exclusive set of sellers or negotiates generous price discounts from popular sellers, and then charges consumers a subscription fee for access to this network. And of course, some platforms (including some credit cards) are a hybrid model, charging cardholders an annual (subscription) fee in addition to collecting a toll on each transaction.

An open question in economics is how the choice of funding model affects network growth and platform competition, if indeed it does.[6] "Indirect network effects," which for the moment we will define simply as whether the participants on one side value the level of participation on the other, are clearly at play in the subscription-funded model. "Good" clubs can charge a higher cover charge than "bad" clubs; just so, a "large" network could presumably charge a higher subscription price than a "small" network if the size of the network matters, i.e. if there are strong (indirect) network effects. Advertising during the Super Bowl is more expensive than advertising at 2:00 am on Sunday. This would suggest that

---

2   For a brief survey, see Rosa Abrantes-Metz, Michael Cragg, Albert Metz & Minjae Song, December 2021, "Understanding the Economics of Platforms," American Bar Association, Antitrust Law Section, *The Antitrust Magazine*.

3   In principle, the platform could charge a fixed fee (e.g. $0.50) or a percentage (e.g. 5 percent of the transaction value) or both for handling the transaction. In practice, most cases we are familiar with tend to price as a percentage of transaction value.

4   Specifically, American Express also charges a subscription fee, but that tends to be an exception.

5   Even this may be a simplification. Advertising payment models can become complicated. When an advertiser pays for "clicks" but not for display, the funding model begins to resemble the transaction model.

6   It can be shown that in some models of a monopolist platform, the choice of funding model is irrelevant.

in subscription-funded cases, incumbency might be of great value: other things equal, a new entrant can only compete with a large incumbent by offering a much lower (perhaps even negative) subscription price.

On the other hand, intuition might suggest that this is less true in the case of transaction-funded networks. If holding a credit card were costless (which it certainly isn't), then why would it matter how many stores were "on the other side" to accept it? One could hold literally every card (in economic jargon, multi-home), and then use whichever one the store happened to accept, up to and including cards which were only accepted in one store.

At the same time, from the stores' perspective, if all customers hold all cards, the store could choose to accept only the lowest cost cards. This intuition would suggest that in the case of transaction-funded networks, the platform might not be able to charge a higher *transaction* price just because it covers a larger network of stores or consumers.[7] The intuition breaks down to some extent when we remember that it is costly to hold and carry a card, so the choice of card will importantly depend on the depth of the store network which accepts it. And, of course, even if the participants are less concerned with the depth of participation on the other side, the platform itself is deeply concerned and will work to achieve balanced participation. Even if "indirect network effects" are weaker for a transaction-funded network than a subscription-funded network, other things equal, those effects may still be very strong in an absolute sense.

II. THE NET TWO-SIDED PRICE

To date, antitrust cases have largely involved transaction-funded platforms such as credit cards, healthcare transaction networks, and travel and booking networks. For this reason, in what follows, we shall concern ourselves with platforms of this type.[8]

A well-known result in the economics literature is that a transaction-funded platform may find it optimal to charge a premium to one side in order to subsidize the other as it seeks to balance participation. A platform with sellers but no buyers will have no transactions, and in this funding model it will earn no revenues. It might be optimal to charge restaurants so that it can pay diners, for example.

This basic insight motivates the interest in "two-sided analysis." In *AMEX*, the court recognized that even if one side of the platform is paying what might appear to be a supra-competitive price, economic analysis must also consider to what extent that may be generating subsidies to the other side.

For a transaction-funded platform which collects a price p1 from one side and p2 from the other (prices which could be zero or even negative), then the platform's net price is simply p = p1 + p2. In some cases that might be a price per transaction, while in others that might be a price per dollar of transaction value. Either way, a two-sided analysis must consider whether this net price is, in some sense, supra-competitive. As *AMEX* recognized, even if price *p1* may seem "too high" in isolation, so long as it is used to subsidize a low or even negative price *p2*, then the net price *p* – that is, the price actually retained by the platform – may be consistent with competitive levels.

III. INDICIA OF MARKET POWER

One common indicator of market power in antitrust cases is to compare prices to marginal costs. Since a price-taking firm should produce output until the two are equal, observing prices well above marginal cost would often indicate either sub-optimal behavior from the firm or some degree of pricing power.

In the case of a two-sided transaction-funded platform, such a comparison is presumably not meaningful on a one-sided basis. As we discussed above, platforms may charge premium prices to one side and subsidize the other, breaking the link between price and cost on a

---

7   In the seminal Rochet & Tirole (2003) paper, the demand for card services is actually independent of the number of agents "on the other side," meaning consumers are not willing to pay more for a card just because it has a large network of stores, and stores and not willing to pay more for a card just because it has a large number of consumers. Armstrong (2006) notes that "cross-group externalities are weaker with per-transaction charges."

8   Economic literature provides several analyses of subscriptions platforms. For an analysis of a monopolist in both one- and two-sided contexts, see [available at Rosa Abrantes-Metz & Albert Metz, 2020, "The Dynamics of Single- and Multi-Sided Monopolies," Working Paper, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3692861]. For an analysis of collusion between one-sided subscription networks, see Rosa Abrantes-Metz & Albert Metz, 2021, "Collusion and Network Effects: Modelling the Dynamics of Single- and Multi-Sided Platforms," Working Paper, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3869687]. Finally, for an analysis of competition between one-sided subscription networks, see Rosa Abrantes-Metz & Albert Metz, 2021, "Collusion and Network Effects: Modeling the Dynamics of Single- and Multisided Platforms," Working Paper, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4186062.

one-sided basis. Instead, the analogous comparison would be in terms of the net price per transaction or per transaction dollar, depending on the case, with marginal costs measured correspondingly.[9]

Arguably, there is no principled reason why comparing net price with marginal cost is less informative in the case of two-sided platforms than in any other case, but there is reason to expect such an analysis to be more complicated. Marginal costs may be difficult to measure, and platforms may be characterized by substantial fixed costs in the short-run. Also, while the widget maker decides how many widgets to produce, a platform may have limited control over the number (let alone dollar volume) of transactions which take place. The platform brings together sellers with buyers, but if the buyers don't like what the sellers are offering (at the prices they are offering), few transactions will take place.

Another measure of market power, and one which has been adopted by courts, is profitability. Under the ideal of "perfect competition," firms should enter an industry until profit has been competed away on the margin. Observing persistent, positive profit could indicate a barrier to entry.

The notion of profit here is economic profit and is distinct from *operating* profit. Operating profit compares revenues with operating costs. If a firm ceases operations, it will receive no revenue but, by definition, incur no operating costs and hence have zero operating profit. Since "zero operating profit" is always achievable, it would generally make sense for a firm with negative operating profit to shut down. We would therefore expect to find positive operating profits among operating firms.

Economic profit, on the other hand, is a measure of "total" profit net of all costs including the opportunity cost of capital. If operating profit compares the value of an enterprise against the alternative of shutting down, economic profit compares the value of an enterprise against its best alternative, which is presumably not simply "shutting down." We note though, that an economist calculating economic profits may make additional adjustments to profits than just simply subtract the opportunity cost of capital from operating profits.

For example, a firm may be carrying goodwill from having been acquired at a value higher than its book and/or market value at the time of the acquisition. Depending on the specifics of the case, it may be appropriate to exclude from costs for the purpose of more adequately reflect the true economic profitability of the firm.[10] Another appropriate adjustment may be to add back to the economic profit calculation of the firm those profits already distributed to owners, particularly if that profit sharing is in the form of a reduction or something else other than a declared dividend. We note that these adjustments are only for an economic profit calculation, and are not bound by GAAP rules.

Just as the theory of perfect competition predicts that prices should equal marginal costs, that same theory predicts that economic profit should be zero. Allowing for some heterogeneity among firms, it at least predicts that marginal profit should be zero (or negative). The intuition is quite simple. If the "next" entrant expects positive economic profit, that means – by definition – that entering this industry is truly the best possible use of the entrant's capital, and so the entrant should enter. That should continue until the "next "entrant does not expect positive economic profit.

While "zero economic profit" represents a sort of ideal, firm heterogeneity, for example, might explain persistent, positive profits among established incumbent firms. But, it should still be the case that marginal profits are "small" to explain why no more firms enter. Thus, persistent and "large" profits continue to be an indicator of some kind of barrier to entry. If this is a profitable industry, people should enter, unless they can't, for example, because of anticompetitive conduct.

How can one establish whether observed profits are "large" or "small"? One successful approach has been to benchmark to similar firms or similar industries which are not suspected of engaging in anti-competitive conduct which might foreclose entry. Observing outsized profits in conjunction with a coherent theory of harm can be powerful evidence that effective artificial barriers to entry exist. For example, recently at the trial for *US Airways (for American Airlines) v. Sabre*, evidence was showed comparing Sabre's economic profits during the relevant time period for the anticompetitive conduct, to those of twelve comparable peer technology companies selected by Sabre's financial advisors. Sabre's profits were 5-10 times larger than the average profits for the comparable companies. In its decision from May 2021, the Court found Sabre to have monopolized distribution of airline tickets.[11]

---

9   It could be the case, though it might be unexpected, that while the price is in terms of transaction dollars, the costs are in terms of transactions (or vice versa). This would happen if, for example, the platform collects 10 percent of the money which changes hands but incurs costs of $0.10 per transaction regardless of transaction size. Such a fundamental mismatch would of course complicate the analysis.

10 Abrantes-Metz testified on how to calculate economic profits for the multisided platform Sabre, in *US Airways v. Sabre*.

11 Order for Judgment, May 25, 2022, in *US Airways v. Sabre*, Southern District of New York, 11 Civ. 2725 (LGS).

Another potential approach is to measure whether profits changed coincident with a change in firm behaviour. If there is a "before" or "after" period which is not suspected of being tainted, profits observed during those periods can also provide a useful benchmark.

Whether compared to different firms at the same time, or to the same firm at different times, a valid benchmark not only helps establish whether barriers to entry likely exist but also serves the useful purpose of providing a quantitative measure of what profit levels could reasonably be expected in a but-for world.

IV. TRANSLATING SURPLUS PROFIT INTO PRICE OVERCHARGES

We now come full circle. For transaction-funded platforms, we explained above that the net price reflects "both sides" of the platform. Even if the platform is paying a subsidy to Side B after collecting a premium from Side A, the net price measures how much the platform is keeping for itself. If that net price is well above costs, the platform will be very profitable. At the same time, if the platform is enjoying surplus economic profits, it can only be because its net transaction price is well above cost. Thus, whether we focus on a traditional Lerner equation or whether we focus on economic profits, these are really just different ways of saying the same thing.

Our choice of whether to focus on *price* directly or instead on *profit* (from which price will be backed out) will largely be driven by practical concerns since both have a solid theoretical foundation. A price analysis requires a careful measure of marginal costs, both short-run and long-run. A profit analysis also requires careful measures but has the benefit that accounting and financial statement data are, at least usually, a good point of departure.

Perhaps more importantly, economic theory does not have strong predictions about how prices should compare between firms selling different products. Economics does not predict that the price of an apple should converge to the price of an orange. And how should one compare "price" if one platform charges a fixed fee per transaction while another platform charges a fixed percentage? But economics does predict that marginal economic profit should approach zero for both the apple famer as well as the orange farmer. And for the widget maker. And for the digital multimedia international conglomerate.

In other words, even if *prices* (and price structures) are very different between two platforms, so that price benchmarks are not well-defined, it can still be the case that *profit* margins are similar, so that profit benchmarks are well-defined, and more easily comparable across similar industries. We note this is particularly appealing in monopolized markets, where the economist is asked to calculate the but-for world competitive price. It may well be the case that there is a lack of comparable competitors, selling the same product, because we are in the presence of a monopolist. But economic profit margins are fairly comparable across similar industries, from which but-for world economic profit benchmarks can extracted.

Suppose that our suspect platform, Platform X, has enjoyed economic profit margins of 50 percent. Suppose that an economic analysis of costs, risks, and markets suggests that Platform Y is a reasonable benchmark, and it has enjoyed economic profit margins of 10 percent. Translating that surplus profit into a net overcharge damage is often a fairly direct chain of calculations. We may be able to compute the but-for net price (the two-sided price) which would have generated profits of 10 percent, holding the volume of transactions constant. The difference in prices is the net price overcharge collected by the platform.

As with other overcharge measures, this calculation does not take account of foregone transactions. In other words, it would often be the case that by lowering the price to one (or both sides), more transactions likely would have occurred in the but-for world.

If the but-for net price is lower, then it must be the case that the but-for price for at least one side is lower. Suppose that in the actual world, Platform X charged a net transaction price of $1.00 when earning its 50 percent profit margin. That could be because it charged $1.00 to one side and nothing to the other, or $0.50 to both, or $2.00 to one side while paying a $1.00 subsidy to other. All of these different pricing structures lead to the same $1.00 net price, which, again, means that Platform X kept $1.00 on every transaction on its platform.

Now suppose that the but-for net price is $0.50, meaning that a net price of $0.50 applied to the same volume of transactions would have generated the benchmark profit of 10 percent. That could be achieved by cutting the price to one side by $0.50, or by increasing the subsidy to the other side by $0.50, or any combination in between. But at least one of the one-sided prices (and possibly both) must be lower in the but-for world.

A measure of but-for, competitive economic profit can be translated into a but-for, competitive net price for a transaction-funded platform. By itself, it does not tell us precisely how those savings would have been distributed between the two sides. To answer that, if an answer is

truly necessary, requires an analysis of indirect network effects and relative demand elasticity. As a rule of thumb, the side with the more elastic demand would be expected to receive a greater share of the price savings. And so would the side providing the most value to the other side of the platform (i.e. the side with the strongest indirect network effects). This will be the focus of a future article.

V. CONCLUSION

In this short article, we have reviewed the economics of platforms with a particular emphasis on the different funding models available to two-sided platforms. We have argued that economic profit margins can serve as not only meaningful indicators of market power, but also provide a practically useful quantitative benchmark of the but-for world. That benchmark can be translated into a but-for net (two-sided) price, leading directly to a calculation of overcharge by the platform.

While the net price overcharge is uniquely determined for a given profit benchmark, the precise allocation of the overcharge between the two sides can depend on market frictions and the relative strength of indirect network effects and demand elasticities. Whether this precise allocation is required will, of course, depend on the particulars of the case.

CPI Subscriptions

CPI reaches more than 35,000 readers in over 150 countries every day. Our online library houses over 23,000 papers, articles and interviews.

Visit competitionpolicyinternational.com today to see our available plans and join CPI's global community of antitrust experts.