THE THEORY OF TWO-SIDED MARKETS: AN ECONOMIC BUBBLE?

Dirk Auer* and Nicolas Petit **

Abstract: Markets’ two-sidedness has been a much discussed topic in modern economic scholarship. Hundreds of academic papers have been written about it in the last ten years. The concept has also veered into antitrust policy, with applications in major jurisdictions such as the United States (“US”), China, and recently, the European Union (“EU”). At this juncture, the question arises whether the buzz around two-sided markets is not giving rise to a bubble in academic and policy circles. This paper vindicates caution.

I. Uprisings, Fables, Zombies and … Bubbles

In industrial economics, failed revolutions happen. In the early 1980s, Baumol, Panzar and Willig wrote their famous “contestable markets” theory. In his 1982 address before the American Economic Association, William Baumol characterized it as an “uprising in the theory of industry structure” (Baumol, 1982). The self-titled “theory” took a life of its own. Scholars refined it. The contestable markets theory subsequently served as a blueprint for competition reformists to push a “small” antitrust agenda. As Martin puts it, “the theory of contestable markets aspired to be all things to all people” (Martin, 2000). Subsequent advances in economic researches however nuanced its relevance, stressing the restrictive postulates (Schwartz and Reynolds, 1983; Weitzmann, 1983) and extreme conditions under which it was built (Sheperd; 1984). Decades later, little of its “laissez faire” implications have made way through antitrust practice.

In industrial economics, “fables” (or “fairy tales”) are not uncommon too. Casadesus-Masanell and Spulber write that “The dismal science is enlivened occasionally by colorful fables that illustrate key points of economic theory” (2000). The acquisition of Fisher-Body by General Motors has been for instance romanced as a prime example of contract opportunism (Klein, Crawford and Alchian, 1978), in disregard of the underlying facts (Coase, 2000). Other fables include the failure of the Dvorak keyboard to prevail over the QWERTY standard due to network externalities (Tirole, 1988) and lock-in effects, despite alleged the alleged superiority of the former (Liebowitz and Margolis, 1999). Those fables have nurtured important policy developments, including regulatory assaults on hold-up by

* Research fellow and Phd Student, University of Liège (ULg), Liege Competition and Innovation Institute (“LCII”).
** Professor, University of Liege (ULg), Liege Competition and Innovation Institute (“LCII”).
Nicolas.petit@ulg.ac.be.
intellectual property owners or antitrust enforcement against *de facto* standards in the digital economy.

Lastly, “zombie ideas” also populate industrial economics. A zombie idea “is one that keeps on coming back, despite being killed” (Quiggin, 2010). For instance, the views that firm size denotes significant market power (Bain, 1968), that competitive firms price at marginal costs (Coase, 1946) or that a patent wields a monopoly on its holder (Kitch, 1986) have all been discredited in economic theory. This notwithstanding, those dead ideas are often kept alive by scholars and policy makers, including outside the realm of economics.

Uprisings, fables and zombies have epistemological virtues. It often takes a long trial and error process to uncover them. And the time spent on empirical verification and formal invalidation advances the state of economic knowledge.

Against this background, this paper discusses the two-sided markets theory in an antitrust context. Its intention is not to moot the idea that the two-sided markets theory is an uprising, a fable or a zombie. Instead, it wants to cast a word of warning. In positive form, the theory of two-sided markets may constitute a “bubble” in the sense given – all other things being equal – to assets bubbles, technology bubbles or housing bubbles. We tweak the concept of “bubble” to denote here a trend to overvalue a theory; which leads to exaggerate interest from theory, policy and practice; which in turns grows bigger thanks to a positive feedback loop. Bubbles have a number of causes, rational (self-interest, under expertise, etc.) and irrational (anchoring bias, herding, overconfidence, etc.). In previous researches, social sciences scholars have used similar approaches. Moar, for instance, talks of “policy bubbles” (Moar, 2013).

In our opinion, the risk of two-sided markets theory to become a bubble shall not be underestimated. Firstly, the award of the 2014 Nobel Prize in Economics to Professor Jean Tirole, a father of two-sided markets theory, will certainly fuel more research into the issue. Studies of trends of subjects in economic journals already report that industrial organization (“IO”) publications occupy a prominent place in academic publishing (Kelly and Bruestle, 2010). Senior and less senior economists eager for academic recognition are likely to “anchor” their research to Tirole’s (and his co-authors) works. Between 2007 and 2012, Evans and Schmalensee have counted more than 200 papers on multi-sided platforms (Evans and Schmalensee, 2012).
Secondly, due to its proximity from policy – in particular, from antitrust policy – the theory of two sided markets will likely swell in other circles. So far, the literature suggests that agencies, regulators and courts have often paid little attention to the economics of two sided markets (Wright, 2003). Perhaps, the best confirmation of this is the 2012 judgment of a French court that found that the free Google maps API to constitute predatory pricing (Petit and Rato, 2012). But the pendulum may swing. Many, if not most, papers insist on the potential of two-sided markets theory to inform antitrust policy and regulation. Caillaud and Jullien, for instance, consider that “the design of competition policy rules with respect to such markets should take these characteristics into account” (Caillaud and Jullien, 2003). In terms of scope, some find the theory relevant across the board, including in relation to exclusionary conduct (Schmalensee and Evans, 2012). Other argue that two-sided markets theory will mainly grow in importance in relation to pricing issues (Rysman, 2009). Interestingly, the most manifest antitrust application of two sided-markets theory often consists in providing an objective justification to what would otherwise look like anticompetitive conduct in a one-sided world. Although there are some exceptions, only a few papers identify theories of harm specific to two-sided markets (Armstrong, 2006; Motta and Vasconcelos, 2012). With this background, antitrust agencies, courts and regulators – under the possible of lawyers, lobbyists and governments – may well be induced to derive from it general policy guidelines and case-specific implications.

Lastly, and perhaps more prosaically, everything that touches the Internet generates frantic interest. In recent history, Internet has been an abundant purveyor of bubbles. In the 1997-2000, the Dot-Com bubble inflicted trillions of losses on fooled investors. Closer to us, the current valuations of Instagram, SnapChat and the likes nurture fears of a great Apps bubble. A similar bubble may make way through academic circles. After all, the distinctive trait of the Internet is to feature “platformed” services,¹ which constitute the core of two-sided markets theory. The terrain for two-sided markets propagation in the digital economy is thus enormous. The Nobel Committee said just this when it stressed Tirole’s contribution to the understanding of platform markets, such as “search engines, and social media”.²

II. Epistemological Assessment of Two-Sided Markets Theory

This section shows that the two-sided markets “theory” shall be understood as a refinement of traditional IO theory. By no means, however, it ought to be apprehended as an “uprising” in industrial economics.

At its core, industrial organization studies the effects of distinct forms of industry structure on price and output levels. Monopoly theory shows that a single supplier may charge a higher price than the market demands, leading to a deadweight loss as some valuable output is not produced (allocative inefficiency). The theory of perfect competition shows that atomistic suppliers will serve at the lowest possible price, producing all the requested output (allocative efficiency). Oligopoly theory shows that when there are a few suppliers, other factors influence price levels, in several possible directions (between the monopoly and the perfect competition level).

These questions were those on the research agenda of Marshall, Cournot, Chamberlin, Mason and Robinson, from the end XIXth century to the mid XXth century (Corley, 1990). They were also those studied by Harvard, Chicago and Post-Chicago scholars since the second half of the XXth century, though with distinct methodologies (for instance, Harvard scholars used empirical measurements, Chicago scholars favoured formal reasoning, while many Post-Chicago scholars rely on game theoretic frameworks).

Importantly, IO scholars have gone well beyond assessing the impact of industry structure (in the strict sense) on price and output levels. The scholarship focuses on the organization of industry in the large sense, including in terms of firms’ strategy, products’ characteristics, customer preferences, Government interference, etc.

This is where the initial theory of two-sided markets theory cuts through. It can be traced back to three papers of Caillaud and Jullien, Rochet and Tirole, and Armstrong, published between 2003 and 2006). On some markets such as video games, consoles manufacturers that compete vie to get both sides of users “on board”. Absent gamers indeed, no developer will produce games for the console. Absent developers’ games, no gamer will buy the console. According to the theory, a way to solve this “chicken and egg” problem (Spulber talks of a “circular conundrum”) is for the platform to “choose a price structure and not only a price level” (Rochet and Tirole, 2003). This decision is indeed not benign in terms of output. In their 2006 paper, Rochet et Tirole find that for a given (total) price level, output can increase “by charging more to one side and less to the other relative to what the market delivers”. One side (gamers) will be called to cross-subsidize the participation of the other side (developers).
In such settings, the “decomposition or allocation” of the total price between the two sides will affect output.

From a policy perspective, this is the most important normative point. Allocative efficiency can be improved by changes to the price structure, and not only by changes to its level. But is this clearly revolutionary from a policy standpoint?

Firstly, Rochet and Tirole themselves seem to doubt it. In their 2006 paper, they explained that the fact that the price structure affects economic efficiency is a “widespread belief” and already a “premise” for many policy interventions.

Secondly, in their papers, Rochet and Tirole did not attempt to present a “welfarian” analysis of two sided markets. Rather as Stigler once put it, they sought “to explain economic life” in the plain tradition of IO scholarship (Stigler, 1992). In this context, their seminal 2003 had primarily a descriptive (or positive) ambition. It explored how platforms in distinct environments decide the pricing allocation between the two sides of the market it (Rochet and Tirole, 2003). ³ Their 2006 paper took an additional tack. It attempted to provide a stylized definition of two-sided markets, and of the necessary conditions for their existence (Rochet and Tirole, 2006). For instance, it has now become clear that there must be indirect network externalities (or cross-platform externalities) to have a two-sided markets: when users’ participation on one side brings users on the other side to participate (and vice versa). In addition, users of the platform must be prevented from forming Coasian transactions,⁴ and from negotiating away the actual allocation of the burden through bilateral bargaining or thanks to monopoly power (Rochet and Tirole, 2006).

Importantly, most of literature that follows Rochet and Tirole follows a similar positive approach. For instance, the oft-quoted 2006 Armstrong paper finds three main factors that determine the price structure: relative size of cross-group externalities, fixed fees or royalties, and presence of single or multi-homing (Armstrong, 2006). Armstrong further explains which side pays more and less in terms of externalities (the side that generates positive externalities on the other pays less).

More generally, that the “price level” is not the sole determinant of output is an old economic idea. Price discrimination, for instance, is a well-known source of efficiency (Baumol and Bradford, 1970). Much like price allocation in two-sided markets, structuring distinct prices

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³ Subsequent literature questions for instance which will be the subsidy side, and which will be the payment side.
⁴ In other words, there must be transactions costs “to the bilateral setting of prices between buyer and seller”.

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for end-users can increase output. Third-degree price discrimination by movie theaters is a case in point (Orbach and Einav, 2007). It is indeed well-settled that movie theaters increase output when they charge different prices to parents and children. Price discrimination too seeks to “get all users on board”. In another seminal paper, Parker and Van Alstyne contest, however, this idea. In their view, third degree price discrimination only leads to a transfer of surplus. It is thus deficient to explain the output effect that appears on two-sided markets (Parker and Van Alstyne, 2005). The argument, however, runs counter to prior economic literature on price discrimination in monopoly (Schmalensee, 1981; Varian, 1989) and other settings (Armstrong and Vickers, 2001), which shows that output can increase under third-degree price discrimination.

More generally, economics in the large sense have long known that price allocation influences output. The theory of regulation shows that in industries with common costs, Ramsey pricing expands output. Under Ramsey pricing, the service provider structures prices so that they are inversely proportional to the service’s price elasticity (Laffont and Tirole, 2000).

Similarly, in welfare economics, Rawls’ “maximin” principle tolerates differences in price allocation, provided they are to the advantage of all (the pie increases), and that the welfare of the worst off is a large as feasible (the share of the pie) (Phelps, 1973). In other words, that firms accept to pay more than others in exchange for additional utility is mundane welfarian economics.

Another angle to assess the epistemological contribution of the theory of two-sided markets is the Coase theorem. This theorem says that if property rights are clear and there are no transactions costs, parties can negotiate an efficient solution to an externality (Coase, 1960). Most papers explain that two-sided markets arise when Coasian bargaining amongst users cannot take place (Parker and Van Alstyne, 2010). In so doing, the theory allegedly refines our understanding of how markets react to externalities short of possibilities of Coasian bargaining. Besides the traditional solutions of vertical integration, regulation, etc., the appearance of a two-sided market might be a remedy. Schmalensee and Evans say just this when they contend that two-sided markets create value by “solving a coordination – and

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5 In contrast, when the Coase theorem applies, the market cannot be deemed two-sided (Rochet and Tirole, 2006).
transaction cost – problem between the groups of customers” (Schmalensee and Evans, 2012).

But even under this twist, economists remain divided. In an undeservedly less famous paper, Spulber argues that the “decentralized coordination” that occurs between each group of user through the platform relates to “Ronald Coase’s description of private bargaining as a means of resolving the problem of social cost” (Spulber, 2010).

Interestingly, the Cosean-epistemological relevance (or irrelevance) of the two-sided markets theory may hinge on a viewpoint dispute. For Rochet and Tirole, two-sided markets belong to the world of non Cosean bargaining because there is no, and there cannot be, a transaction between the users that clears away the non-neutrality of the price structure (through pass-on). In Spulbers’ view, two-sided markets belong to the world of Cosean bargaining, because there is an accumulation of bilateral transactions between seller and intermediary, and between intermediary and buyer.

III. A Lexical Bubble?

At its core, the theory of two sided markets had a mere descriptive ambition. But it was also quite limited in scope. Rochet and Tirole (as well as previous work), had carefully stressed the specificities of their analysis, and the “necessity to circumscribe the scope of a two-sided markets theory” (Rochet and Tirole, 2006).

In subsequent scholarship, this initial ambition may have been stretched, possibly beyond the intentions of the theory’s founding fathers. The best symptom of this lies probably at the “label” level. Scholars have rivaled in imagination to tag new names on what has until now been referred to as the “theory of two sided markets”: “multi-sided platforms” (Evans and Schmalensee, 2012), “two-sided networks” (Eisemann, Parket and Van Alstyne, 2006; Parker and Van Alstyne, 2005), “informational intermediation” (Caillaud and Jullien, 2003), “two-sided strategies” (Rysman, 2009); “two-sided markets” (Rochet and Tirole, 2003; Wright, 2003; Weyl, 2006; Rysman, 2009).

At a higher degree of granularity, there is a proliferation of concepts in relation to two sided markets. In this section, we give evidence of this variance in definitions (1), qualifications (2) and illustrations (3) as another symptom of a bubble (4).

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6 Rochet and Tirole go even further. In their view, the mere fact that the Coase theorem fail is necessary, but not sufficient to have a two-sided market, even if an intermediary is present. An additional obstacle to pass through across users has to be present (Rochet and Tirole, 2006).
1. Definitions

A number of papers in the multi-sidedness literature purport to elucidate a basic definitional issue: what distinguishes a two-sided market from a one sided market? Three types of definitions are generally advanced. The first, and the narrowest, is the one of Rochet and Tirole: a “market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other in an equal amount; in other words, the price structure matters, and platforms must design it so as to bring both sides on board” (Rochet and Tirole, 2006). Its focuses on the price structure. Interestingly, Rochet et Tirole also offer a definition of one sided markets: “The market is one-sided if the end-users negotiate away the actual allocation of the burden (i.e., the Coase theorem applies); it is also one-sided in the presence of asymmetric information between buyer and seller, if the transaction between buyer and seller involves a price determined through bargaining or monopoly price-setting, provided that there are no membership externalities”.

A second, “less formal” definition is proposed by Evans and Schmalensee: “a multi-sided platform” has “two or more groups of consumers”; “who need each other”; “who cannot capture the value of their mutual attraction”; and “rely on a catalyst to facilitate” their interaction (Evans and Schmalensee, 2007). This definition has a managerial savor. It insists on the transactional solution generated by the platform.

A third definition finds that there is a two-sided market when there is “some kind of interdependence or externality between groups of agents that are served by an intermediary” (Rysman, 2009). This strand of the literature pays predominant attention to the existence of an “indirect network externality” across a platform (Parker and Van Alstyne, 2005). It is the loosest definition that can be encountered in the scholarship.

Is this definitional proliferation sign of an academic “bubble”, where old ideas sell if rebranded as novel exotic concepts (much like during the Internet bubble when established firms’ stock value skyrocketed, in reaction to name changes with the suffix “.com” (Lee, 2001))? A paper by Spulber discretely conveys the argument, recalling that two types of markets exist in textbook economics. Decentralized markets, where buyers and sellers interact over the counter. And centralized markets, where firms act as intermediaries between buyers and sellers. According to Spulber, the term “two-sided market describes both

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7 To the exception of Rysman, p.127 who explains that this question may not be so important.
decentralized markets and centralized markets in which intermediary firms help to coordinate the participation of buyers and sellers”. Century old economists like Cournot or Edgeworth already talked of two-sided markets in this sense. However, Spulber observes that scholars like Rochet and Tirole failed to recognize prior art, and in particular, “the large body of earlier work on intermediated markets or matching markets”. Regardless of the answer to be given to this question, disagreements around the definition of two-sided markets is not merely a matter of semantics. Rochet and Tirole rightly worried that “you know it when you see it”-type definitions would be over inclusive. For example, if two-sided markets only exist in situations where Coasian transactions or bargaining between both sides of a platform is impossible, then parameters that are not readily observable play a critical role in identifying a two-sided market. A platform’s governance structure, contractual arrangements and legal rules will notably have an important impact on the availability of Coasian bargaining between users, and in turn, on the two-sidedness of a market. Take payment cards. If platform rules forbids surcharging, then it is the platform that controls which side will bear most of the platform’s costs and both sides cannot bargain away this allocation. Instead, if surcharging is free, the party with the most bargaining power can shift part or all of the costs to the other party, and reverse the price allocation decided by the platform. As a result, the platform’s price structure should no longer affect output (this is analogous to traditional tax incidence; with surcharging the platform’s costs are not different to VAT). Rules that govern users’ payments are thus no trivial matter. This might be a strong reason to favor Rochet and Tirole’s definition over others, which do not pay attention to this issue.

2. Concepts

The formation of a bubble may also appear at a more granular level. In the literature, there is a tendency to substitute classic IO concepts with modern notions that seem to originate in the tech world. As will be seen below, the issue again is not merely rhetorical, but has critical consequences.

2.1. Markets

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8 There is no such thing as a one-sided markets, as long as markets involve a buyer and a seller, with or without an intermediary platform (in the Cosean-Williamsonian world, the one-sided market is the firm).
9 In a footnote, he seems to regret that the literature has poured old wine in new bottles. The argument goes indeed that the 2000s literature explores in essence centralized (or intermediaries) markets, with network effects
10 In effect, a merchant’s ability to make cardholders pay for the transaction fees incurred by the merchant as a result of a payment card being used.
In the early papers, reference was generally made to “two-sided markets” (Rochet and Tirole, 2003; Armstrong, 2006), at least at title level. In subsequent papers, the “market” concept has sometimes been phased out or qualified. Evans and Schmalensee prefer to talk of multi-sided “platform businesses”. Parker and Van Alstyne use the concept of “two-sided networks”. Evans mentions “multi-sided platform markets”.

Most of those papers seem intent on stressing the importance of the platform. The new wording may also seek to address the critique that the notion of a two-sided market is self-evident, for all markets are two-sided as long as there is a buyer and seller.

The best wording is unclear in our view. However, two lines of arguments militate in favor of the traditional IO wording.

Firstly, the concept of “platform” invites the inference that multi-sidedness is intrinsic. In plain language, a platform is “a raised level surface”, with several sides: an above and a below. From an economic perspective, however this is not always true (and it suggests that “platform”-wording is misguiding). A platform is indeed not necessarily multi-sided. For instance, it is customary to view payment card systems as platforms. But payment card systems can be set up both as single or multi-sided platforms. Although many payment systems – notably Visa, MasterCard and Amex – are set up as two-sided platforms, this is not always the case. Indeed, many supermarket chains offer their customers an in-house payment card system. At first blush, such card systems are not two-sided platforms, because the platform owner does not sit between two separate user groups. In addition, because supermarkets own their in-house platform, the allocation of those card systems’ running costs is subject to Coasian bargaining.

Secondly, from a policy perspective, the random, alternate use of day-to-day journalistic semantics with technical economics terminology sends the counterproductive signal that the theory is not mature. Moreover, if the theory is ever to be embedded in antitrust and regulation, it is advisable to frame it in terms that fit readily with accepted terminology in those fields.

2.3. Buyer/seller

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11 Walmart, for example, offers an in-house credit card that can only be used in its stores. See http://www.walmart.com/cp/632402
12 See Evans, Antitrust, p.13 & 17.
The literature on two-sided markets is replete with references to “users” or to “groups of users” in relation to the platform. On close read, those users refer to the well-known IO concepts of “buyers” and “sellers”. In their papers, Rochet and Tirole as well as others, often alternate those two notions (2003).13

Several reasons may explain why authors indistinctly use both the IO “buyer-seller” couple and the “users” concept. It may denote the fact that in a two-sided market, some groups of users on one side are bartering with the platform (for instance, in search engines) so that there is no monetary transfer. Or that in other two-sided markets, some groups of users pay a price to the platform whereas others do not, so they cannot be considered as buyers (for instance, standard and premium users on LinkedIn; parents and children at the museum).

On principled grounds, moreover, the distinction seems unproblematic, and therefore irrelevant. Caillau and Julien explain that all users can a priori be considered buyers and/or sellers. The user that pays no price in dealing with the platform (or that barter with it), is a buyer that receives a “negative price” (a subsidy or a “freebie”) as compared to other buyers on other sides who are charged a “positive price”.

But the distinguishing relevance of the “buyer-seller” v “user” dichotomy can be explained with a thought experiment. If one thinks of the economy as a world of “platforms and users”, then a football club looks like a two-sided business, because it helps bring both sides of users “on board”. On the one hand, “marquee” players will drive fan base and viewership up (Eisenmann, Parker and Van Alstyne, 2006). On the other hand, a large fan base and viewership will boost the attractiveness of clubs to players. Now, if one thinks of the economy as a world of “firms with buyers and sellers”, then a football club does not look like a two sided business. It is a vertically structured organization that transforms inputs (players) into products (games and entertainment sold in various forms). This, clearly, could have wide policy implications.

3. Illustrations

In our view, this marks an unnecessary drift in the theory, which the initial scholars had sought to avoid by using more conventional IO concepts.

3.1. The core: payment systems, video games, matching markets and newspapers

13 Talking, besides buyers and sellers of “distinct group of users” or “two distinct sides” (Tirole and Rochet, 2003).
In the early literature, the illustrations given of two-sided markets were quite contained. Rochet and Tirole mentioned software (video games), portals and media (newspapers), payment systems, and a bunch of other illustrations (Rochet and Tirole, 2003). Other papers also put an important emphasis on matching markets, such as night clubs, social gatherings, etc. (Caillaud and Jullien, 2003). At the time though, most papers anticipated an expansion of the business models that would later be categorized as two-sided markets.

3.2. And its indefinite periphery

In subsequent publications, disagreements have become more frequent in relation to the categorization of two-sided markets. For instance, Armstrong argue that supermarkets are two-sided (Amrstrong, 2006), whilst Rysman disagrees (Rysman, 2006). Similarly, Eisemann et al consider that retail electricity markets are evolving in two sided markets paper (Eisemann et al, 2006), whilst Rochet and Tirole disagree (Rochet and Tirole, 2006).

Further papers give more examples of two-sided markets, though often without discussing them. Those include expos and trade fairs, TOEFL exams to students and universities, real estate agencies, airports, stock exchanges, credit rating services, academic publishing, ranking websites, conferences, pools and industrial standards, etc.14 Rysman also mentions the original example of franchising. In his view, the “franchisor operates a two-sided market in the sense that it attracts consumers to its brand and franchisees to operate outlets” (Rysman, 2009).

3.3. Assessment

Given the burgeoning list of examples of two-sided markets, it may be worth to take a step back, and consider those examples under the main definitions given above. This is a prima facie assessment, but we expect that even with a full analysis, there will be divergences due to the differing definitions.

<table>
<thead>
<tr>
<th>Payment systems</th>
<th>Rochet and Tirole (price structure matters and inability to negotiate away part or all of the price allocation (incl. absence of a seller monopoly))</th>
<th>Schmalensee and Evans (two or more groups of customers; need each other; cannot capture the value of mutual attraction; rely on a catalyst)</th>
<th>Rysman, Parker and Van Alstyne (definition does not matter, externality between groups of agents that are served by an intermediary)</th>
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<td></td>
<td>Y (unless)</td>
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14 For a list, see Wright, 2003.
<table>
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<th>Category</th>
<th>surcharging is permitted</th>
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<td>Video games</td>
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<td>Online recruitment</td>
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<td>Operating system</td>
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<td>Airports</td>
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<td>Supermarkets</td>
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<td>Academic journals (authors and readers)</td>
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<td>Gasoline powered engines</td>
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<td>Conferences</td>
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<td>Franchising (absent RPM)</td>
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<td>Collecting societies</td>
<td>?</td>
<td>Y (consumers and artists could not strike deals without collecting societies)</td>
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<td>Industrial standards and pools</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>Highways and turnpikes</td>
<td>N</td>
<td>N (drivers don’t need highways to find petrol stations a vice versa; it is just convenient to have them there)</td>
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</tbody>
</table>

4. **Bubble?**

The definitional, conceptual and illustrational expansion of the two sided markets literature is a normal evolution. It takes root in the testing process inherent in economic research (modification in specifications and settings). It is also influenced by the proclivity of academics to distinguish their research from prior art. The lack of semantic homogeneity in economic discourse may also be an explanatory factor. Other possible explanations include group-think, fashion and trends in academic research, etc.

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15 Often, economists use different terms to talk about one and a same issue. Professor Gale very well summarized this: *“Economists are skilled at recognizing important issues and relationships and suggesting solutions to problems in an economy. Their approaches to addressing these matters are creative and intriguing. Yet, in the few terms reviewed here, the profession needs to agree on definitions and concepts of technical economic terms”*. See J. Gale, “The Language of Economics”, 13 November 2003, available at SSRN: [http://ssrn.com/abstract=468642](http://ssrn.com/abstract=468642).
This evolution has, however, a number of paradoxical consequences. On the one hand, as economists keep classifying new types of markets (and re-classifying old ones) as two-sided businesses, the early literature retrospectively gets celebrated as a general “theory”. According to the Oxford dictionary, a theory is: “a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained”. However, when looking at the wider implications of the two-sided market theory, it is apparent that they cannot be generalized and that they are often not independent from the thing to be explained.

On the other hand, as it embraces an ever open-ended scope, the theory loses relevancy. In particular, the redux of the theory to markets with indirect network externalities and intermediaries is misguided for most markets including football clubs, MBA or LL.M programs, gasoline powered engines, or franchising can be deemed two-sided.

The early literature insisted on the satisfaction of several restrictive conditions (in particular the absence of Coasian bargaining and the inability to transact away the price allocation through side payments between end users). The literature should not lose sight of this, on pain of precipitating the theory into irrelevancy. As Tirole himself wrote in his famous IO textbook: “At first sight, even a theorist should regret the very high ratio of theory to evidence in a field which is often lacking in generality and in which practical implications are so crucial”…

To date, the bubble has not yet burst. But the ongoing regulatory exposition of two-sided technology giants like Google, offer opportunities to reconsider the theory, and to expose its limitations. In particular, scholars increasingly question whether Google search is actually a two sided market. After all, one may well view the users on the subsidy side as sellers (of personal data), and the users on the money side as customers (of targeted advertising) (Luchetta, 2013). In this variant, the traditional IO literature and the theory of the firm may also be applicable.

IV. Antitrust policy implications

The bubble surrounding the theory of two-sided markets might give rise to a number of challenges and pitfalls for antitrust agencies, regulatory authorities and courts.

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16 Although, the term “theory” might only be used as a shorthand, it is present in a number of papers. See notably, Evans, Antitrust, p.2; Julian Wright, p. 2; RT, 2003, 991; RT 2006, p. 646.

17 See Tirole, IO textbook, p.3:

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First, although the theory could certainly make impact on the outcome of some cases, the hype surrounding the literature might underestimate the costs that authorities will face when applying it in real cases, and the benefits that such an analysis will yield.\textsuperscript{19} In this context, no reflection has been devoted in the literature to the enforcement costs of the theory of two-sided markets. This issue is of contemporary importance, in light of the tendency of agencies in Europe and elsewhere to pull back from applying a more economic “effects-based” analysis in most areas of antitrust law (to the exception of merger control).

Second, “applied” theory is no easy science, and decisional errors cannot be excluded. In some cases, authorities might see two-sided markets where there are none. For example, as soon as they see cross-externalities, authorities might be tempted to jump to the conclusion that there is two-sided market. With this, they may infer that anticompetitive conduct in one side of the market yields efficiencies on the other side, in it helps the platform get “\textit{all users on board}”. Conversely, outside of the most common textbook examples of two-sided markets, authorities might not realize that a more thorough multi-sided analysis is warranted. For instance, subsidies, rebates and other forms of aggressive pricing (and even State aid) may be identified as unlawful predatory conduct, if the authority fails to see that there is a money side that cross-subsidizes such expenses. This simplification could lead to both type I and II errors.

To illustrate those point, we analyze a number of cases where two-sided markets might have been at stake. Section 1 covers cases were authorities used – possibly mistakenly – the theory of two-sided markets, while section 2 covers cases where authorities undertook a single-sided analysis even though a two-sided analysis could have been appropriate.

1. Two-sided markets cases where the theory of two-sided markets came to prominence

The difficulties faced by authorities when applying the theory of two-sided markets can be seen at play in the recent \textit{Groupement des cartes bancaires} and \textit{MasterCard} cases.

Although there are differences between the facts underpinning the two cases, both concern credit card systems. In such systems, banks sit in the middle of a platform between cardholders (the issuing market) and merchants (the acquiring market). In both cases, these payment systems were run by a group of banks. This multi-bank setting is important because both merchants and cardholders typically only conclude deals with one of the system’s banks.

\textsuperscript{19} Often, the theory will give rise to a number of very fact specific questions which require substantial investigation to be answered. Moreover, there are situations where the theory will offer little explanatory value compared to existing theories such as that on network externalities.
This leaves room for opportunistic behavior by members of the system and, as a result, credit card systems usually establish on internal rules to allocate costs, prevent free-riding and avoid hold-up. Those rules there is much disagreement about the rules that are necessary in such settings. It is this disagreement that gave rise to both cases.

a) *Groupement des cartes bancaires: restrictions by object in two-sided markets*

The *Groupement des cartes bancaires case* concerned various measures introduced by French banks in order to achieve a certain balance between their members’ acquisition and issuance activities. In short, the grouping was attempting to prevent some of its members from free-riding on the system by only operating the issuing segment, which costs less to operate than the acquisition segment. Three measures were a stake: first a fee (called the MERFA) levied on banks that were heavy issuers destined to finance the acquisition activities of the system; second, a membership fee and fees linked to the issuance of new credit cards; finally, a fee per card issued imposed upon members that had not been active during a given time period (in effect, this fee prevented banks from rapidly entering the issuing segment of the system).

The Commission and the General Court sought to determine whether these measures were restrictions of competition, and whether the alleged multi-sidedness of the card system had any bearing on this question.

When addressing this issue, both resorted to formalistic reasoning. They certainly acknowledged that there were externalities between the acquiring and issuing sides of the card system, but they then considered that the “issuing side” of the platform was the only relevant market, without further consideration. Given these findings, both the Commission and the General Court concluded that the card system’s measures had an anticompetitive object. This is not surprising. Looking only at the issuing side of the market, the Card grouping’s measures look like garden variety naked restraints.

On appeal, the Court of Justice opted for a more holistic approach, as suggested by its Advocate General. The Court of Justice found that the General Court had failed take adequate account of the economic context in which the alleged restriction took place.

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21 The Commission recognized the existence of three separate markets: the issuing market, the acquiring market and the market for payment systems See Commission Groupement des cartes bancaires decision, notably §180.
22 See Groupement des cartes bancaires Wahl AG opinion.
Crucially, this economic context extended beyond the relevant market. As a result, the General Court was wrong to restrict its examination to the relevant market, rather than take both sides of the payment system into account. Had it done so, the General Court should have found that because the measures at stake sought to achieve a certain ratio between the acquiring and issuing activities of the grouping, they were not “by their very nature” harmful to competition. In short, restrictions of competition in one side of a two-sided market cannot be folded in the “object” box, if there is another side justifications for them. It does not mean, however, that they are immune of prosecution under the “effects” analysis.

The Court judgment in Groupement des cartes bancaires was celebrated in the antitrust community. Some antitrust scholars and practitioners read in it a blueprint for the introduction of two-sided markets theory in European competition law. Any such hopes have however been diminished by the concomitant ruling in MasterCard, which was rendered the same day.

b) *MasterCard*: restrictions by effect and article 101(3) TFEU in two-sided markets

In *MasterCard* the Court was asked to decide how to measure anticompetitive effects in two-sided markets, and how to apply article 101(3) TFEU in such settings. On both points, the Court’s approach is at odds with Groupement des cartes bancaires.

The case concerned interchange fees levied by banks that were members of the MasterCard card association. To summarize, the MasterCard system is mostly financed by the fees that merchants pay to banks per transaction. These fees are negotiated between merchants and the acquiring bank. On the other side of the platform, banks also issue credit cards to consumers and give them incentives to use these cards. Once a transaction is completed the merchant pays the transaction fee to the acquiring bank. MasterCard then requires the acquiring bank to pay a fee (normally smaller than the transaction fee), that will then subsidize the activities of issuing bank. This is called an interchange fee. It is these fees that were at stake in *MasterCard*. MasterCard – which was considered as an association of undertakings – was accused of “fixing” these multilateral interchange fees (hereafter, “MIFs”). Those fees served indeed as a basis for the calculation of the charges imposed subsequently by acquiring banks on merchants (hereafter, “MSCs”). Although the MasterCard ruling covers a much broader range of questions than Cartes bancaires, a number of points are noteworthy.

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23 See §77, 78 & 79.
24 Groupement cartes bancaires §76.
25 Groupement cartes bancaires, § 78.
i) Restrictions by effect in two-sided markets

The Court first assessed whether the General Court undertook a sufficiently thorough examination of the agreement’s potential anticompetitive effects.\textsuperscript{26} Somewhat surprisingly, the Court found that the General Court had clearly characterized the restrictive effects of the agreement. The Court’s sides with the General Court’s conclusion that the MIFs were restrictive because they reduced “the possibility of prices [for merchants] dropping below a certain threshold”.\textsuperscript{27}

Like the General Court, the upper Court concern seems to lie in the distributional price effect of the MIF.\textsuperscript{28} By imposing a fee on the acquiring bank, the MIF inflated the base for the calculation of the MSC subsequently charged by acquiring banks to merchants (per transaction).\textsuperscript{29} In doing so, the mechanism placed a lower limit on the MSC that in turn led to a transfer of surplus from merchants to acquiring banks.\textsuperscript{30} This distributional effect is at the core of the Mastercard judgment.

In contrast, however, the Court appears to have omitted to consider the output effects generated by the MIFs. This is no small detail. Indeed, as seen above, switching costs from one side of the market to the other can increase output on all sides of the market.\textsuperscript{31} But had the Court considered this question, its finding of anticompetitive effects would have been somewhat weakened, short of a restrictive effect on output.

The output effect of MIFs can be best understood with a short numerical example. Let us imagine two different states of the world: one where merchant fees are inflated by MIFs, and another where there are no MIFs. We could further imagine that in a world with MIFs merchants pay MSCs of 2€ per transaction and consumers nothing, whereas in a world without MIFs both merchants and consumers pay 1€ per transaction. If consumer’s demand is highly elastic they might use their cards far less often when paying 1€. One could thus imagine a situation where 500 consumers are willing to use their card for 0€ and where 100 consumers are willing to use their cards for 1€. At the other end of the platform, merchant’s

\textsuperscript{26}MasterCard, Court, § 183.
\textsuperscript{27}MasterCard, Court, § 193.
\textsuperscript{28}See notably MasterCard General Court, §143, 163, 164. And MasterCard Court, §
\textsuperscript{29}See MasterCard, Court, § 193 & 195
\textsuperscript{30}Up to the point where the MSC is so high that merchants refuse to pay (their reserve price). This point is nicely illustrated in §158 of the General Court’s judgment. Which in more convoluted terms essentially argues that the with the MIF there is both a lower bound to the fee that banks can charge – they do not want to operate at a loss – and an upper bound because they cannot charge merchants more too many merchants more than their reserve without losing profits.
\textsuperscript{31}See Weyl, p. 35
demand for transactions is less elastic, as predicted by two sided markets theory in payment systems: 500 merchants are willing to conclude transactions at 2€ per transaction and only 600 merchants might be willing to conclude transactions at 1€. Assuming that both merchants and consumers only conclude a single transaction, the two states of the world give the following results. In a world with shared fees (no MIFs), 600 merchants would like to conclude transactions, but only 100 have that possibility. In short, merchants are rationed: in this world there are simply not enough consumers to satisfy the merchants. Only 100 transactions are made. In the second world, 500 merchants are willing to conclude transactions, as are 500 consumers. As a result, there are 500 transactions. Compared to the first state of the world, it is true that 100 merchants have each lost 1€ in consumer surplus. But on the other hand, 400 extra merchants and 400 extra consumers can now conclude transactions. In this hypothetical example, merchants are better off paying more because they are no longer rationed.

This numerical example shows how MIFs can lead to Pareto improvements. Of course, this is not always the case. For example, the extra sums paid by merchants might be absorbed by the card payment platform. Moreover, consumers’ elasticity might not be as high as in our example. Even if it is passed on to consumers, the increase to the MIF might not increase output if consumers have a less elastic demand than merchants. Finally, as both Bourguignon, Gomes and Tirolo\(^\text{32}\) and Evans, Schmalensee\(^\text{33}\) note, platforms can also charge merchants well beyond the point where consumers’ adoption of the platform is increased.

To summarize, the General Court did not establish whether the MIF led to a restriction of output. Accordingly, despite its distributional consequences, the Court could not on this sole basis conclude that the MIF exerted anticompetitive effects.

\textit{ii) Applying article 101(3) TFEU in two-sided markets}

In order to be exempted under article 101(3) TFEU, agreements must fulfill four conditions, the first of which is to contribute “\textit{to improving the production or distribution of goods or to promoting technical or economic progress}”.\(^\text{34}\)

In order to determine whether MIFs mark a 101(3) improvement, there are a priori two components to look at: the system’s total output and the MIFs’ distributional (or surplus)

\(^{32}\) See p. 3
\(^{34}\) In effect:. See Article 101(3) TFEU and MasterCard Court, §230 and 234.
consequences (both on consumer surplus and total surplus). At the very least, economists agree that in two-sided markets a price rise can, for a given price level, have different effects on surplus and output. The upshot, is that authorities will often have to choose between these objectives.

On appeal, the parties argued that the MIFs benefited cardholders and that this had not been taken into account by the Commission and the General Court.

The Court took a different tack. It held that when customers on both sides of a two-sided market are not substantially the same, at least some of an agreement’s potential benefits need to accrue to those within the relevant market. Accordingly, because the relevant market was the acquiring side of the platform, some of the MIFs’ benefits needed to fall upon merchants and not just upon cardholders.

The Court in turn observed that the parties had not contested the General Court’s conclusion that merchants did not benefit. This was therefore the end of the story. The question of whether this benefit could stem from increased output on the other side of the market or lower prices was thus left unanswered.

**iii) Lessons from Groupement des cartes bancaires and MasterCard**

A number of points can be taken away from the Groupement des cartes bancaires and MasterCard rulings.

For a start, the CJEU was faced with numerous tradeoffs between consumer surplus and platform output, yet a clear trend does not emerge from these cases. In Groupement des cartes bancaires, the Court appears to have favored platform output. Indeed, as the Court itself accepted, the measures in Groupement des Cartes bancaires limited price competition on the issuing market. From a distributional standpoint, there is little doubt that the measures

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35 See Weyl, p. 35. (see also Evans, antitrust, p.35)
36 On the other hand, there is no agreement on how common or uncommon such a result might be. Weyl, p.35: common that these objectives contradict themselves, RT 2003, p.1005, obtain different results and conclude that the profits of all parties to a platform are proportional to the total volume of transactions that take place.
37 See MasterCard, Court, §228 & 243 (“without any distortion having been claimed in that regard”).
38 See Court, § 242.
39 Note that this leads to a different standards for complimentary good situations and for two-sided markets, even though the situations are relatively similar.
40 See MasterCard, Court, § 243.
41 Finally, it ought to be noted that merchants often support MIFs, because they grow the cardholders base on the other side of the market. This is, in particular, true if installing card terminals and concluding agreements with acquiring banks involved heavy fixed costs. In such cases, merchants might be better off, despite the higher fees, with an increased cardholder bases because this entitles them to achieve scale economies. The Court ruling does not address this issue.
42 Cartes bancaires, Court, §66.
reduced the consumer surplus of some cardholders. Despite this, the Groupement des Cartes bancaires Court insisted that the measures aimed to foster activities on the acquisition market.

In contrast, in MasterCard, by concluding, that a price increase on one side of a platform was sufficient to prove anticompetitive effects\(^{43}\), the Court opted for a consumer surplus standard that only takes one side of the platform into account. In doing so, the Court did not require the General Court to prove that the MIFs restricted platform output.

This schism is unfortunate. The Court might be sending mixed signals to companies that jointly operate multi-sided platforms. Agreeing to increase prices on one side of the platform might not restrict competition by object, but would always restrict competition by effect. Given the uncertainty surrounding the application of article 101(3) to such situations,\(^{44}\) the Court’s rulings leave platform operators in legal limbo.

In addition, adopting a consumer surplus standard, as the Court did to assess the MIFs’ effects in MasterCard, creates a number of problems. If a price increase – or any price as per the Commission’s decision – of one side of a platform is systematically found to have restrictive effects on competition, then the theory of two-sided markets becomes nearly irrelevant for competition law purposes.

Finally, even if one reads MasterCard as the endorsement of a mix consumer surplus and output standard, then self-assessing an agreement under article 101(3) becomes exceedingly difficult. What kind of increase to a platform’s output would be necessary to outweigh a price increase on one of its sides? Is a price increase on one side of the platform acceptable if the overall price level of the platform does not increase? Finally, a mixed standard for article 101(3) would imply substantial expenditures for parties and authorities alike.

To summarize, the Cartes bancaires and MasterCard cases show that the theory of two-sided markets still has a long way to go before it is completely integrated into European competition law.

2. Two sided market cases where the theory of two-sided markets was not contemplated

Two-sided markets were probably present well before economists discovered and theorized them. If this is the case, the literature suggests that, with no avail of theories of two-sided

\(^{43}\) MasterCard, Court, §193.

\(^{44}\) See section 1.b)ii)
markets, authorities may have committed numerous type I errors (false convictions). Indeed, many economists consider that the theory provides business justifications to conduct that would otherwise be deemed anticompetitive in a one sided market. This includes predatory pricing and bundling, exclusivity, territorial restrictions and price discrimination, etc.

In what follows, we analyze a sample of cases representative of mainstream theories of harm. We find that often the theory of two-sided markets would not have affected the general outcome of the cases and that authorities often used proxies or rules of thumb that approximated what is today known as the theory of two-sided markets.

**a) Tying: Microsoft**

The Microsoft case is one of the most high profile cases in the EU antitrust history. In this case, the General Court upheld a Commission decision which had found that Microsoft had abused its dominant position by refusing to share interoperability information with rival providers of “work group servers” and had tied its “Windows Media Player” (hereafter: “WMP”) with its Windows operating system.\(^{45}\)

Crucially, both computer operating systems and media players are, to some extent at least, two-sided markets. Indeed, both products sit between end-users and content providers and there are strong indications that the pricing structure of both types of platforms can have, for a given price level, a strong impact on output.\(^{46}\) For a start, operating systems (hereafter: “OS”s) serve as the backbone upon which content providers can build various programs/applications. They are also the platform that end-users use to access this content. Both groups (end-users and content providers) are likely to attach some value to the size and quality of the group that is present at the other end of the platform. In a world of close to zero marginal costs and relatively high fixed costs, one would expect that software developers value OSs that have more end users because they allow them to reach more users for the same development costs. Similarly, most consumers probably do not value an OS that only supports a limited number of applications.\(^{47}\) As a result, an OS’s ability to attract content providers might provide it with an important competitive advantage.

\(^{45}\) See Commission decision of 24 March 2004: http://ec.europa.eu/competition/elojade/isef/index.cfm?fuseaction=dsp_result&policy_area_id=1,2,3&case_title=microsoft

\(^{46}\) Find quotes in articles.

\(^{47}\) One should not, however, over-generalize. Although it is probably the case that Microsoft’s users value extra applications, this is not automatically the case for all OSs.
A similar analysis applies to media players. Users are likely to value players that allow them to access as much relevant content as possible and content providers might prefer to develop content for players that attract the most users, especially if porting content from one player to another involves heavy costs.\footnote{If porting were timeless and free, content providers could simply choose to develop content for all media players.}

Technicalities aside, in Microsoft, OSs and Media Players seemed, \textit{prima facie}, to possess many of the characteristics of two-sided markets. Accordingly, one might ask how the General Court’s analysis in the Microsoft case withstands examination under the theory of two-sided markets.

Let us first recall the gist of the tying analysis in Microsoft. The theory of foreclosure endorsed by the General Court rested on three arguments. First, Microsoft’s tying strategy made its media player ubiquitous (because of Microsoft’s over 90% market share on the OS market).\footnote{Microsoft, General Court, § 979, §, 1037 to 1040. The Court notably found that rival media players could not achieve similar market penetration either by offering their players free for download (Microsoft, General Court, §1050 to 1052) or by concluding deals with OEMs who preinstall Windows (and WMP with it) on the PCs they sell (Microsoft, General Court, § 1043 to 1048).} Second, this ubiquity affected the decisions of content providers and software developers, who were induced to use WMP-compatible language.\footnote{Microsoft, General Court, §983, § 1060.} In turn, the increased number of developers made WMP more attractive to users, thus creating a “positive feedback loop”.\footnote{See General Court, § 1061 to 1077} Third, the General Court and the Commission found that Microsoft’s tying nurtured an increase of WMP’s market share, at the expense of foreclosed rival media players.\footnote{See General Court, 988 & § 1078 to 1087.}

Given the two-sidedness of the markets at stake in the Microsoft case, one might ask whether the theory of two-sided markets would have had a substantial impact on the outcome of the case. In that respect, two observations are in order.

Overall, applying the theory of two sided markets would have generated marginal utility, and possibly raised decisional costs. First, even without the theory of two-sided markets, both the Commission and the Court understood that that tying-down users on one side of a platform can increase adoption by users on the other side. These conclusions were seemingly reached on the basis of a plain vanilla theory of network effects. As early as 2001, when the
Commission objected to Microsoft’s tying, the seminal paper on two-sided markets was only published two years later.\textsuperscript{53}

Surely, a two-sided markets may have helped refine the Commission’s analysis. In its decision, the Commission considered two “sides” WMP users and software developers, who were not charged for the use of Microsoft products. Its analysis thus failed to characterize Microsoft financial interest in foreclosing WMP competitors. Under a two-sided market analysis, the Commission should have characterized a money side. In this case, the money side was the rich Windows OS sold to users. And the Commission would have found that media player and software ubiquity was a means to promote sales of Windows OS: users buy the rich Windows OS – including for a high price – because everyone writes and develop Windows-compatible content. On the whole, though, the theory of foreclosure in Microsoft withstood analysis under the theory of two-sided markets.

Second, the theory of two-sided markets may have proven counterproductive for decisional purposes. In the theory of two-sided markets, it might also hold that tying WMP to Windows was objectively justified business conduct, so there was no such thing as willful monopolization.\textsuperscript{54} Moreover, it has been argued that in situations like the EU Microsoft case, tying might be more efficient, even if it leads to foreclosure.\textsuperscript{55} Even if this had been the case, such a finding would not have influenced the outcome of the case. Under EU competition law, lack of exclusionary intent or efficiency arguments are not a very powerful defense, with the exception of predatory pricing cases.\textsuperscript{56}

The upshot of this is that the theory of two-sided markets would probably only have had a minimal impact on the outcome of the Microsoft case. Not only did authorities intuitively grasp much of the contribution that this new economic literature had to offer, but, in areas where they didn’t, it is not clear whether the theory of two-sided markets would produced different outcomes.

\textbf{b) Horizontal price fixing: e-Books}

\textsuperscript{53} Quote RT 2003
\textsuperscript{54} Tying might, for example, have allowed Microsoft to achieve a better price balance. See notably RT 2006, p.660.
\textsuperscript{55} See Evans Antitrust, p. 33 & Choi 2010.
\textsuperscript{56} Quote EU case law.
On cursory analysis, the European Commission’s e-Books decision concerns the canonical example of a sector with a multi-sided platform. However, this case was decided on the basis of single-sided analysis. In brief, Apple was found guilty of colluding with e-books publishers so as to shift Amazon from a wholesale model — whereby it bought eBooks to publishers, and retailed them to readers at a price of its choice — to an agency model — whereby it would connect publishers to readers, and get remunerated through a fee that’s a share of the price set by publishers. In 2007, Amazon sought to introduce a 9.99$ pricing policy on its platform. Publishers contested this new pricing policy, which depressed their margins. Hence publishers colluded with Apple to undermine this strategy. E-books publishers concluded agency agreements with Apple, and through commitment tactics – a MFN clause – threatened Amazon to disrupt supplies should it refuse to convert to the agency model.

E-books marketplaces, which are often linked to specific eBook readers appear, at least at first glance, to be two-sided markets. Such platforms bring together book publishers (in digital format) and readers. In such markets, the ability to access a large variety of works is of the upmost importance on readers’ side, especially if they must pay for their reading device, which is systematically the case. On the other side of the market, it is unclear how much publishers value the number of users on a given platform. Indeed, multi-homing might be a particularly attractive option for publishers due to the presumably low cost of porting a book from one medium to another. Finally, it is conceivable that an eBook platform’s pricing structure can, for a given price level, affect output (although the case does not offer any data to answer this question).

In Europe, the Commission relied on standard one-sided logic to resolve the case. In short, the Commission’s theory was that Apple and e-books publishers had colluded to move Amazon from a retail model to an agency model. This was allegedly achieved by including a retail price most favored nation clause in the agency contracts concluded between Apple and

57 http://ec.europa.eu/competition/elojade/isef/index.cfm?fuseaction=dsp_result&policy_area_id=1,2,3&case_title=ebooks
58 In that respect, a quote from the Amazon’s CEO seems particularly relevant: “Ultimately we’re an information boker. On the left side we have lots of products; on the right side we have lots of customers. We’re in the middle making the connections. The consequence is that we have two sets of customers: consumers looking for books and publishers looking for consumers. Readers find books or books find readers”. See Caillaud & Julien, p. 1.
59 They reduce searching and transport costs for consumers, and they allow publishers to enjoy enhanced benefits stemming from the long tailed distribution of revenues (publishers no longer need to decide how many books should be printed and no longer need to store books before they are sold).
60 http://archive.wired.com/wired/archive/12.10/taill.html?pg=1&topic=tail&topic_set= Moreover, due to long tail distribution, having as wide a library as possible is crucial for platforms to maximize revenues.
eBook publishers. As a result of this clause, Apple would be guaranteed to sell at a retail price as low as Amazon’s, even though Amazon would be selling at a loss. And Apple would keep a 30% cut of the retail price. For this to be economically viable, eBook publishers had no other choice but to convert Amazon to an agency model under which it would ultimately lose the ability to fix retail prices (otherwise they would risk having to sell to Apple at exceedingly low prices).

In spite of its apparent multi-sidedness, the Commission’s commitment decision never mentions the market under scrutiny as such. Why didn’t the Commission undertake a two-sided market analysis in this case? And what did the theory have to offer? A number of conjectures are possible.

First, the Commission could have considered that the collusion between Apple and the publishers had the effect of turning a two-sided market into a one-sided market. Under the agency model, publishers alone became responsible for pricing decisions. Publishers could therefore defeat, to some extent, the platform’s pricing strategy by reallocating the costs of the platform on readers. In such a setting, there is therefore no longer a two-sided market, but a classic one-sided market. But is the fact of turning a two-sided market into a one-sided market a source of antitrust concern? This is very unclear, and one may question whether the mission of agencies is to protect and promote markets’ two-sidedness. As said above, the welfare consequences of multi-sidedness remain indeed poorly understood.

Another remark is that the theory of two-sided markets did not neatly match what was being observed in eBooks markets. For example, it has been argued that in such situations, often referred to as “competitive bottlenecks”, the multi-homing side will pay monopoly prices to access the exclusive users of each platform. This does not appear to have been the case for eBooks. In the US, Amazon appears to have purchased eBooks for $12.99 and sold them for $9.99. It is thus likely that neither publishers, nor consumers were coerced into bearing the operating costs of the platform. This is hardly what one would call monopoly pricing. This

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61 See notably, decision, §31.
62 Quote US eBooks case.
63 It should be noted that, as the Commission opted for a “commitment” decision, its decision is much less lengthy than would otherwise have been the case.
64 They are notably unable to alter the percentage of the retail price that goes to the platform.
65 See Armstrong, p. 669 & 677 & following.
66 Quote US case
pricing might, however, be explained by Amazon’s desire to attract as many users and publishers as possible to its platform.\textsuperscript{67}

In short, although the eBooks industry displays features of two-sidedness, the Commission, like the US authorities,\textsuperscript{68} followed a one-sided market analysis. The reasons for this are not entirely clear. It is not, however, obvious that a two-sided analysis would have produced any valuable insights in this particular case.

c) Vertical and horizontal agreements in the insurance market: Allianz Hungaria

The Allianz Hungaria case only remotely appears to involve a two-sided market. It was actually decided on the basis of a single-sided assessment.\textsuperscript{69} As will be seen below, however, the case could have been framed under a two-sided markets perspective. In this variant, it is unclear what the theory could have brought.

The case concerned direct and indirect agreements between car dealers and insurance companies. In that respect, the dealers interacted with insurance companies in two distinct ways. First, when selling cars, they served as brokers for the insurance companies, offering a one stop shop for car-buyers. Second, they served as repair shops for the injured car users who ultimately footed the bill for the repairs. Under the agreements, the parties broadly agreed that insurance companies would pay higher repair costs to those dealers that increased the number of policies they sold from the given insurer. Although it did not reach a firm conclusion on the restrictive nature of these agreements, the Court appears to have leaned in favor of a finding of infringement.\textsuperscript{70}

With this background, where is the relevance of the two sided market theory? In the car repair sector, among others\textsuperscript{71}, insurers might be seen as two-sided platforms. For a start, they must get at least two groups of users on board: policy holders and repair shops. Both sides of the platform would appear to value users on the other side. Policyholders might value insurance policies that give them access to more or better repair shops, whereas repair shops might value the insurers with the most policy holders (to increase the volume of transactions).

\textsuperscript{67} Alternative explanation are advertising revenue? Ads: less than 5% of Amazon’s revenue. It might also be explained by the strong outside options that both users and publishers had. Indeed, both might have been able to switch to brick and mortar stores if they were unhappy with the pricing policies of eBook platforms.
\textsuperscript{68} Quote US case
\textsuperscript{69} C-32/11
\textsuperscript{70} See C-32/11, notably §41 to 49
\textsuperscript{71} See notably, Bradley Rochet, 2006 for another example : the healthcare sector.
Second, the burden of the repair refunds and insurance benefits might be an important consideration for both sides, thus requiring something of a balancing act on the part of insurers. Charge too high a premium and too few customers will buy insurance. Give too low repair compensation to dealers, and they will probably unsubscribe from the platform. In short, insurance markets, such as those at stake in the case at hand, bear some of the traits of two-sided markets.

As Allianz Ungaria was a preliminary ruling, only a limited set of publicly available facts are available. It is therefore difficult to ascertain whether in casu two-sided markets were stake. Nevertheless, a number of observations seem relevant.

First, the Court pays no heed to the fact that insurance providers could be deemed two-sided platforms. The case contains no mention of two-sidedness, cross-platform externalities, the importance of price structure, etc. Given the temporal proximity between Allianz Hungaria and Cartes bancaires – less than a year between them – one might venture to say that authorities will often miss two-sided markets in other sectors than the “core” examples identified by the economists. This stresses the importance that economists to assist policy makers and judges in identifying what are two-sided markets in the economy.

Second, had the insurance market been deemed two-sided, this would have had important consequences on the case. In order to attract both policyholders and dealers, insurance companies might need to give them both incentives to join. This is a delicate problem. Insurers cannot easily give dealers more money than they collect from policy holders. One way to avoid this problem might be to give dealers incentives to increase the base of policyholders. In this particular case, the higher repair costs paid back those dealers that increased the number of policies they sold might just have been that: an incentives device designed to increase the value of the platform. If this were the case, the measures which were at stake in the case at hand might have been more pro-competitive than a single-sided analysis would suggest.

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72 Customers value insurance that is actuarially fair (i.e., where the premium is equal to loss in the case of an accident times the probability of an accident occurring).

73 They might notably do so by investing the money earned through premiums.

74 In doing so, dealers only receive additional surplus in cases where they actively increase the value of the platform. A task which they might be better placed to discharge than the insurance company, because they are the first point of contact with clients.
In summary, the Allianz Hungaria shows that it is often easy to miss a two-sided market. This is a problem, because we just saw here that two-sided analysis could have changed the reading of the case.\textsuperscript{75}

V. Conclusion

In light of the above, the “theory” and its “applications” risk receiving a varying scope,\textsuperscript{76} causing unwarranted confusion or illegitimate distinctions. Ultimately, policy makers risk falsely diagnosing or missing two-sided markets, in turn committing systematic type I and II errors.

If, as many economists advocate, the theory of two-sided markets is to receive a specific policy consideration, a necessary prerequisite, is that the theory be sufficiently circumscribed. Further research is therefore needed, prior to turning theory into policy.

\textsuperscript{75} When the possibility of a two-sided market is correctly identified, authorities will often have to undertake a careful examination of the facts before they reach any conclusions. The preliminary reference procedure applied in this case was not a particularly appropriate setting to that effect.

\textsuperscript{76} Lawyers accustomed to the “one word-one meaning” principle may occasionally be led to draw flawed distinctions amongst the above concepts. Lawyers are used to a strong – and at times obsessive – degree of lexical discipline. Therefore, they often take for granted that different words conceal distinct meanings.