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Gilbert, Richard J. 2020. *Innovation Matters: Competition Policy for the High-Technology Economy*. Cambridge, Mass. & London: The MIT Press, 324.

There are very few people, if any, thoroughly happy with the competition policy in the US nowadays, for one reason or the other. The frustration has only been brewing in the academic world, but it is boiling in the public life and political deliberations. Linda Kahn, an icon of the Neo-Brandeis movement, who is pushing for radicalisation (both in terms of scope and intensity) of competition policy interventionism (Kahn 2017), has been appointed to the powerful position of the head of the US Federal Trade Commission (FTC) and US Senator Amy Klobuchar has sponsored the Competition and Antitrust Law Enforcement Reform Act, whose basic aim is to intensify competition law enforcement, especially in the case of the US technological giants.[1] One of the crucial questions that are debated is what should be the goal of the competition policy (antitrust policy in American parlance). Should it stay a single, well-defined aim of maximising consumer welfare – a standard associated with Bork (1978) and his contribution to the debate?[2] Or should it be transformed into set of different aims (some of them mutually contradictory), as suggested by the Neo-Brandeis movement champions, who would like to transform antitrust into "anti-monopoly",

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1 Ilić (2022) provides a detailed review of this US legislative proposal.

2 Hovenkapm (2019) and Crane (2019) provide a thorough review of the consumer welfare standard which, in the case of the first author, includes a comment that initial Bork's idea was actually total welfare standard (consumers'

as well as by senior academics without any connection to the movement (Steinbaum, Stucke 2020; Eeckhout 2021), who believe that the competition law enforcement should not consider only consumer welfare, but also the impact on workers, suppliers, and competitors – everyone with something to lose or gain.

Thus, Richard J. Gilbert's book was published with excellent timing. The other excellent trait of this book is that the author approaches the dilemma about the aim(s) of the antitrust from a fresh and quite appropriate angle – innovation. The point is that the US economy is at the technological frontier, i.e., it utilises cutting-edge technology, hence technological progress in the country is entirely dependent on innovation – there is no room for imitation. For contemporary economics, primely modern growth theory, innovations are endogenous; they depend on investments in research and development (R&D). Taking that into account, the author specifies that the main thesis of this book is that antitrust enforcement must change to address challenges to competition in the high-technology economy and he is convinced that such a change can occur without sacrificing a focus on consumer welfare. "The answer is to move from price-centric to innovation-centric competition policies" (p. 2). By "innovation" the author means a new or improved product or production process that differs significantly from previous products or processes. According to the author, the book "is an attempt to collect in one place the current state of knowledge about antitrust enforcement for innovation and price competition for future products and services, to complement the state of knowledge about antitrust enforcement for price competition for existing products and services" (p. 4). The stage for the new competition policy is set. With Gilbert as a prolific author and one of the leading academics in the field, the reader's expectations are substantial.

At the beginning of the book (Chapter 2) the author describes the distinctive features of the high-tech economy, including the potential for industry disruption, network effects, the importance of intellectual property, pointing out that many high-tech firms operate as platforms that coordinate prices and terms of service for different firms and users. Gilbert emphasises the challenges platforms raise for antitrust enforcement, such as the network effects that reinforce the dominance of major internet companies because consumers substantially value the participation of other consumers in the platform's services.

surplus plus producers' surplus). These two standards (total v. consumer welfare) are distinctive. Competition law intervention consistent with the total welfare standard need not to be consistent with the consumer welfare standard.

According to the author, a major obstacle to an innovation-centric competition policy is the traditional competition policy emphasis on market definition and market shares. The author points out that they are often no useful analytical tools that can be applied to the merger or conduct of a firm that is likely to harm incentives to invest in R&D or threaten competition in a future market. Obviously, the boundaries of a market that does not presently exist are inherently uncertain. This insight enables the reader to understand the extent to which the 2010 US Horizontal Mergers Guidelines are, in this sense, much more innovation-evaluation-friendly than their EC counterpart, the 2004 EC Merger Regulation, which insists on the definition of the relevant market.

Chapter 3 of the book focuses on two fundamental innovation competition themes. The first one is the "replacement effect," described by Arrow (1962), who pointed out that the existing profits that firms earn in imperfectly competitive markets can dull innovation incentives. The incentive to innovate is the difference in a firm's profit with and without innovation. This difference is reduced if an innovation replaces the (economic) profits that firms earn from their existing products or technologies. The second one is the Schumpeterian theory of imperfect competition and the appropriation of private returns to R&D (Schumpeter, 1942), which argued that imperfectly competitive markets, i.e., monopoly power, provide innovation incentives that are absent in highly competitive markets by making it easier for firms to appropriate profit from their discoveries and by providing a more stable flow of earnings to cover the costs of R&D that had enabled the innovation to emerge. The author points out to numerous assumptions (i.e., simplifications) of both models and that the relative strength of their countervailing effects depends on whether and to what extent these assumptions are met. The answer to these questions is empirical and it varies between industries, between products (e.g., durable goods), and between periods. There is no simple and unequivocal answer to the question on the relations between competition and innovation. Welcome to the innovation wonderland! It is no less intriguing or puzzling than Alice's.

The following section of the book (Chapter 4) provides further elaboration of the complex interactions between competition and innovation, reviewing the insights of numerous models aimed at clarification and explanation of that interaction, addressing issues such as market dynamics, cumulative innovation (in which discoveries build on prior discoveries), and managerial and organisational theories of corporate behaviour regrading R&D and innovation. The author concludes that simple models of competition for innovation and the races to patent a discovery generally show that an increase in rivalry increases the probability of discovery and speeds up

an innovation. Nonetheless, more complicated dynamic models capture the interdependence between market structures that motivate investment in R&D, on the one hand, and the market structures that result from successful innovation, on the other. These models – for example the one developed by Aghion *et al.* (2005), with an inverted U curve that describes the relation between competition and innovation – demonstrate that too much competition can reduce the rate of innovation in some instances, as well as the importance of taking into account technological differences between firms regarding the strength of innovation incentives. More competition generates stronger innovation incentives for the firms close to the technological frontier, but not so much for firms far from it. Again, there is no simple and straightforward general truth.

The analysis of these numerous models provides an additional (apparently unintentional) takeaway for the reader – abundant evidence that in advanced economies incumbent firms are heterogeneous, i.e., that there are substantial technological differences between them. There are firms on the technological frontiers, firms close to it, but also firms far from the cutting-edge technology, meaning that firms are endowed with different costs functions, producing distinctive marginal costs. This could be the explanation of the recorded high and increasing markups, i.e., the difference between the price and marginal costs in the US economy (De Loecker, Eeckhout, Unger 2020), rather than the market power due to the decline of competition, as claimed by Philippon (2019) and Eeckhout (2021).[3]

The author points out that competition authorities have limited policy levers to influence innovation, as they cannot control competition directly. The most important leverage for these authorities to influence innovation is merger control, considering that clearing a merger (unconditionally or conditionally) changes the competitive environment and incentives for R&D, and hence – the innovation outcomes. Blocking mergers also changes incentives for R&D, not necessarily for the better, especially in the long run, and it also affects innovative new entries (start-ups), not only the merging parties. Accordingly, Chapter 5 addresses theoretical issues that are relevant to the analysis of the effects of mergers on innovation incentives and future price competition. According to the author, perhaps the most important issue

[3] Though the magnitude of market power is measured by the gap between the price and marginal costs, i.e., the Lerner index (Lerner, 1934), the source of market power is the decline of competition, which generates a negative slope of the residual demand curve, in turn enabling the firm to be the price maker rather than the price taker. Accordingly, when the firms are heterogenous the existence of the gap between the price and marginal costs is not a sufficient condition for market power, because the marginal costs differ between the firms.

in merger control, from the innovation viewpoint, is the treatment of "killer acquisitions", i.e., mergers by which powerful incumbent firms takeover small, innovative new entries considered to be potential competitors.[4] In the infamous words of Facebook CEO Mark Zuckerberg "It is better to buy than to compete". Nonetheless, if these mergers are prohibited, the outcome can be harmful for innovation. The author points out that, at least in some instances, the opportunity to sell a start-up or promising R&D project to an established firm is the most powerful incentive for innovation on the first place and the best way to commercialise a new product. Accordingly, prohibiting these acquisitions may obtain lowers prices of existing products but the cost may be a slower pace of innovation, and slower introduction of new products and new technologies that decrease the average costs of existing products. Another trade-off in the wonderland of competition policy focused on innovation.

Chapter 6 of the book reviews the empirical literature related to competition, mergers, and innovation. The empirical evidence of a link between competition and innovation is somewhat mixed. Nonetheless, the author claims that there is an empirical regularity that the positive effect of competition on innovation is greater for firms that are at or near the frontier of efficient production. The empirical evidence of the effects of mergers on innovation are considered separately from competition, considering that a merger, according to the author, differs from a reduction in competition because it leaves the R&D assets of the merging firms intact, at least in the short term, but centralises control of the merging parties' decisions regarding R&D, especially further investments into it. The author claims that there have been very few methodologically sound studies of the effects of mergers on R&D and innovation, and they have not identified a consistent pattern of results. Perhaps one of the reasons for this research outcome is that mergers are not homogenous. Three types of mergers are explored in the book from the innovation viewpoint: product to product merger, product to (R&D) project merger, and (R&D) project to (R&D) project merger. The first type of merger eliminates competition between two products, the second could be motivated to kill the (R&D) project, i.e. the new product so as not to compete with an existing one (a typical case of Arrow's replacement effects), and the third type of the merger eliminates competition between the R&D effort of the merging firm, which could be beneficial if the project are overlapping, as resources would be allocated more efficiently. Even within each of these three types of mergers, every merger is specific. Hence there is no way to grasp a general truth about mergers and their effects on innovation.

[4] This idiom was introduced to the academic literature in the seminal contribution Cunningham, Ederer, Ma (2021).

This is the reason why the author focuses on the competition law enforcement case studies (not only mergers) in the following chapters. Chapter 7 of the book reviews several negotiating consent decrees that mandate either partial divestitures or licensing agreements, and follows the performance of entities that were the recipients of divested assets or patent licenses. The author claims that some of the divestiture agreements appear to have achieved the objective of restoring innovation incentives that might have been lessened by the proposed capital transaction, while others appear to have been less successful. Again, there is no straightforward conclusion, but the author provides a comprehensive and detailed list of conditions that increase the probability of success of both partial divestitures and patent licensing.

Chapter 8 of the book discusses the antitrust case brought by the US Department of Justice (DOJ) and several US states against Microsoft for monopolising the PC operating systems market. This chapter also describes cases brought by the European Commission (EC) that challenged Microsoft's conduct related to media players and workgroup servers, shedding light of the two distinctive competition law approaches. In the US case, according to the author, the court recognised the challenges of crafting appropriate antitrust enforcement for a dynamic market characterised by strong network effects, but it rejected the argument that the antitrust laws are not applicable to firms that operate in the high-technology economy. The court largely applied traditional antitrust principles, but it also carved out differential treatment for linking software products when it, unlike the EC, refused to condemn the tying of the Internet Explorer web browser to the Windows operating system. The author believes that the consent decree that ended the US litigation and decisions by the EC had beneficial effects for software innovation by constraining conduct by Microsoft that would exclude competition and by encouraging Microsoft to make its software products interoperable with other products.

Chapter 9 of the book analyses investigations by the FTC and the EC that addressed the display of Google search results for comparison shopping services (CSS). According to the author, the case is much more controversial, and it is no surprise that the US and EU competition authorities went in the opposite directions. The reader is not quite convinced that the Google case warrants the attention that is given to it in the book, definitely when compared to the Microsoft case and its implications on innovation in high-tech industries.[5]

[5] This case described in the book should not be confused with the DOJ complaint against Google to restore competition in search and search advertising markets filed on 20 October 2020. The judge set 12 September 2023 as a tentative date for the start of the trial.

Much more interesting and relevant is Chapter 10, which addresses competition policy regarding standards and the conduct of undertakings that affects interoperability or compatibility. The author explains that two or more systems are interoperable if they can communicate efficiently with each other. He emphasises that interoperability is a sufficient but not a necessary condition for compatibility and that interoperability standards can promote innovation by allowing firms to specialise in components and exploit economies of scale with the knowledge that their components will be compatible with other components that together provide valuable services. Nonetheless, there is a risk to competition considering that dominant firms can exclude rivals by unilaterally promoting a standard that is not compatible with products supplied by their rivals. Again, there is trade-off, which is ubiquitous in the case of relations between competition policy and innovation.

The author recognises that for some the traditional focus of antitrust enforcement on consumer welfare is obsolete and that it should incorporate broader concerns, such as jobs, privacy, inequality, and the concentration of political power. His view is that "including these ill-defined goals increases the risk that courts and antitrust agencies will have too much discretion to respond to political pressures, corporate lobbying, and personal biases" (p. 235). Accordingly, Gilbert believes that the competition policy should maintain focus on consumer welfare. The change should be only in the way it is implemented: "Antitrust enforcement should evolve from being *price-centric* to *innovation-centric*" (p. 235, italics in the original). Accordingly, Chapter 11 of the book provides some recommendations, actually more like some food for thought on how to accomplish that transition.

The first recommendation is that competition authorities should not emphasise relevant market definition when analysing innovation and future price competition. The recommendation is intuitive because it is unknown what the product, i.e. the outcome of innovation, will be, what would be its features and its substitutes, hence it is not feasible to define the future relevant market. Furthermore, the author emphasises that conventional approaches to market definition are generally not helpful for this analysis of innovation, the outcome of R&D, because most R&D is not traded in a market. Nonetheless, the author emphasises that this recommendation does not mean that the relevant market should not been defined in all other antitrust cases, as this procedure introduces commendable analytical rigor to antitrust enforcement.

The second recommendation is that competition authorities should rely on validated presumptions to assess the effects of innovation. Innovation-centric competition law enforcement requires competition authorities to

rely more on presumptions about the future effects of innovation that are anchored by a rather extensive body of economic theory, empirical evidence provided *inter alia* by many empirical studies, and corporate records and testimony, especially regarding the presumptive effects of mergers on innovation and future price competition. In the book the author provides ample reference to both theoretical models and empirical studies focused to the relations between competition and innovation. It should be useful for decision makers.

The author further recommends that the competition authorities should require evidence of the benefits of proposed mergers or acquisitions and points out that competition policy would be more effective for the high-technology economy if the competition authorities required evidence of benefits of proposed mergers, or of other conduct that has the potential to harm competition and innovation. His point is that in the high-technology economy, the potential consumer harm from underenforcement of the competition laws is at least as great as the potential harm from overenforcement.

The fourth recommendation is that competition authorities should increase scrutiny in the evaluation of acquisitions that eliminate potential competitors, i.e., in cases of "killer acquisitions". The point is that dominant firms in the high-technology economy are adept at identifying competitive threats and can acquire them in their infancy, before their targets achieve a market presence that would trigger conventional antitrust concerns. The author points out that many of these potentially harmful acquisitions fall below the Hart-Scott-Rodino Act (HSR) value thresholds that require reporting of the capital transaction to the US competition authorities. The author recommends that the HSR thresholds be modified to require reporting of acquisition targets with modest revenues if the acquirer is a firm that dominates an industry.[6] Nonetheless there is a caveat to this recommendation as the author emphasises that competition authorities "should not presume that acquisitions of potential rivals are anticompetitive if the expectation of acquisition by an established firm in a related technology field is the motivator for innovation by the acquired firms in the first place, provided that there are no other acquirers that would offer similar rewards without the risk of anticompetitive effects" (p. 238).

[6] The problem with this recommendation is that the legal concept of dominant firm is foreign to US competition law, unlike to EU law, although the US "monopolization" concept is similar to the exclusionary abuse of dominant position in European competition law. In short, for adopting this recommendation, the legal concept of dominant firm would need to be introduced into the US competition law.

The author further recommends that the competition authorities not require evidence of substantial foreclosure to prevent exclusionary conduct, considering that innovation-centric competition policy should continue to emphasise restrictions on conduct that excludes competition and therefore allow firms to benefit in ways that are not the result of superior performance or efficiency. Furthermore, the author points out that competition policy "should apply a lower threshold than substantial foreclosure for anticompetitive exclusionary conduct in industries with network effects" (p. 239).

The author's sixth recommendation is based on his insight that compulsory licensing is often an effective tool to promote innovation. The author claims that compulsory licensing obligations in merger consent decrees appear to have promoted patenting by firms that were the beneficiaries of these compulsory licenses without significantly reducing patenting by the firms that were compelled to license intellectual property or by other industry participants. Nonetheless, the author warns competition authorities that compulsory licensing should be used sparingly when addressing industry dominance because it can diminish innovation incentives.

The author points out that one of the most challenging areas of competition law enforcement in the high-technology economy is the evaluation of incremental innovations or product designs that allow a dominant firm to maintain a monopoly or extend it to related markets, but also benefit consumers. His seventh recommendation in the book is that the truncated rule of reason analysis is useful to assess allegations of anticompetitive incremental innovation. The author claims that under this approach, product designs and other innovations should escape antitrust condemnation if they offer substantial improvements and are not accompanied by other exclusionary conduct that does not have procompetitive benefits.

The following recommendation in the book is that competition authorities should evaluate the effectiveness of remedies for innovation and should not hesitate to impose harsh remedies, including structural divestitures, if they are warranted by the expectation of harm to innovation or future competition that cannot be satisfactorily addressed with more moderate measures. The author admits that there are no systematic studies of the performance of remedies that address innovation concerns and that his book offers some anecdotes, but that they paint a mixed picture. The reader is somewhat sceptical regrading this recommendation, especially structural divestitures, a remedy that has the impact precision comparable to carpet bombing in the Second World War.

The final recommendation starts with a question many in the USA would like to get the answer to – "Should antitrust enforcement break up big tech?" In a nutshell the answer is "Be careful!" The author points out that breaking

up these firms does not necessarily imply that their successors would have greater interest in protecting consumer data or that regulators would have an easier time controlling abuses of privacy – the two greatest concerns that are on the fringe of competition policy – if more firms compete for the attention of consumers and advertisers. Furthermore, the author claims that divestiture would require the determination of the boundary lines for the divested components and enforcement oversight to prevent the component parts from crossing into prohibited territories, and "it is questionable whether unscrambling these eggs would have procompetitive consequences" (p. 243). Moreover, the author claims that if a divestiture separates activities with powerful network effects, the forces that enable a tech platform to sustain its dominance would tend to recreate a new dominant firm after the breakup. Having in mind all the caveats the author provided, on the topic of braking up big tech firms, the reader is tempted to jump to the conclusion "Do not even think about it!" They should not. "Be very, very careful about it", seems like a fitting conclusion.

The final sentence of the book is telling: "The lessons are not simple; more needs to be done to understand the proper role of antitrust enforcement in promoting innovation for the high-technology economy" (p. 244). This sentence demonstrates the character of the book. It is an honest and open report of a step-by-step exploration of uncharted territory. It is an open call for more research and for acquiring more knowledge in the field and better understanding of the world of competition and innovation. It is a plea for very careful consideration of the competition law reform and cautious moves in that (mine)field, taking into account that there are trade-offs on virtually every of its corners. It is quite refreshing, especially compared with some recent contributions by authors with academic backgrounds, which resemble military orders for the charge against the enemy in a decisive battle.

The book provides both a solid academic foundation and vibrant adjuration for wisdom for the reform for competition policy in advanced economies, such as the US, whose economy is on the technological frontier. The question is to what extent the findings of the book are relevant for the competition policy in countries with not so advanced economies, those that are far away from the technological frontier, in which technological progress is based on imitation rather than innovation, and whose economic growth is based primarily on investments (accumulation of production factors), rather than improved efficiency of production factor utilisation due to technological progress. It seems that, after all, this book is somewhat relevant for not so advanced economies, particularly those that are in the middle-income convergence trap, where competition policy should facilitate transformation from investment-based to innovation-based economic growth (Begović,

2018). Although the recommendations in the book are tailored to the USA and are fully relevant for other advanced economies, the considerations in the book provide a fertile ground for considerations about improving competition policy in countries that are not close to the technological frontier, especially those that are in the middle-income convergence trap, considering that the way out of the trap is the creation or at least the enabling of incentives for innovation.

It is sheer intellectual pleasure to read this book. But it is not easy to get through. Not because it is badly written, on the contrary, but because it deals with complicated issues and complex phenomena, hence the reader needs to be focused all the time and must make a substantial effort to grasp the ideas and follow the authors argumentation. This is not a simple task. Perhaps these traits of the book could make people from the competition authorities give up halfway through and not to read it to the end. They should refrain from doing that – for the sake of all of us consumers and our welfare.

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