

White Paper

Competition Policy in a Globalized, Digitalized Economy

Platform for Shaping the Future of Trade and Global Economic Interdependence

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Foreword

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Digitalization and online platforms provide numerous benefits to firms and consumers, including increased choice and economic opportunity, but they can also raise market concentration and competition concerns. Features of many digital platforms – multisidedness, zero-price, use of data, network effects and competition *for* rather than *in* the market – have led competition authorities to rethink traditional tools. In doing so, they have taken diverse views of the consumer welfare standard and the ability of digital markets to self-correct. As a consequence, international differences have emerged, adding to trade tensions.

With competition governance questions entering mainstream political discourse, there is a need for a balanced, evidence-based reassessment of the proper role of competition policy. A common vision in this area may also provide a valuable basis for related debates on approaches to industrial policy, the role of the state in the economy and distributing the gains from digital innovation. This paper outlines the following considerations and recommendations for the way forward:

1. **One size does not fit all.** Authorities need to better understand different business models in digital markets.
2. Some **competition law tools need rethinking.** Traditional methods used to define the relevant market, measure market power, scrutinize mergers and weigh pro-competitive and anticompetitive effects may be unsuited to features of digital business models.
3. **Upending established competition law frameworks appears to be unwarranted**, as existing rules have been effectively applied in many cases.
4. **Global responses** are needed in the form of cooperation among competition policy-makers and enforcers and coordination between competition and other authorities.
5. **Predictability and convergence of regimes** promotes innovation and investment in technology. The consumer welfare standard – properly construed – could form the basis for international principles.
6. **Digital literacy** among users of digital services is essential for effective competition in digital markets.
7. **Competition enforcement and consumer enforcement tools** are important complements.
8. **Compliance by design** in digital products and services can alleviate certain concerns before they arise.
9. Effective long-term solutions may require **continuous input from stakeholders**, given the informational disadvantage at which governments find themselves.
10. **Enforcement tools and remedies** need to evolve. Competition authorities could more effectively use “market investigation” tools and interim measures to keep up with fast-changing digital markets and consider behavioural insights when designing remedies.

This paper is intended to support informed debate among non-experts and has benefitted from input from a diverse group of individuals. It is a product of the Platform for Shaping the Future of Trade and Global Economic Interdependence.

Introduction

Digitalization transforms how we live, learn, earn, work, spend, trade, communicate, invest and innovate. The globalization and digitalization of the economy generate enormous benefits for citizens, including citizens of developing countries. Competition enforcers acknowledge the huge benefits of digitalization, such as new employment opportunities, greater convenience, personalized products and services, rapid delivery of products, easier social connections, ease of reaching scale for smaller companies and more.¹ Multisided, digital platforms – key players in the digital economy – generate numerous user benefits by lowering transaction costs, introducing new products, enabling new types of transactions and improving the “match” between parties to an exchange. Platforms facilitate value generation from previously dormant resources, thereby expanding the economy. The substantial economic value to users of “free” platform services is difficult to quantify and is disregarded in traditional measures of economic activity, such as gross domestic product (GDP).²

Against these benefits, concerns are also voiced regarding increased concentration in certain industries, including technology, labour’s falling share of income and growing income inequalities. Various commentators relate some of these concerns to insufficient competition and/or ineffective competition policies or enforcement. Consequently, some call for the largest technology companies to be broken up, or regulated like utilities, to reduce levels of concentration and eliminate leveraging of market power across different markets.³ Others suggest that it may be necessary to share data – a central asset of today’s (digital) businesses – among competitors to overcome entry/expansion barriers in certain markets⁴ or propose that digital markets need their own, specialist regulator.⁵ By contrast, others argue that digital markets are highly competitive, with significant investments in innovation, delivering choice and high-quality products and services to consumers at low cost.⁶

Competition policy-makers and enforcers must, therefore, balance various concerns. The stakes are high; adopting the wrong approach risks jeopardizing the benefits that digitalization can deliver. The paucity of relevant statistics and empirical evidence and the rapid evolution of technology further complicate policy-making and necessitate its constant reassessment.⁷ Authorities around the world demonstrate varying degrees of faith in the ability of digital markets to self-correct, leading to divergent approaches to competition policy.

Against this background, this white paper articulates the pertinent questions and considerations that can inform the optimal approach to competition policy in digital markets. It explores the challenges that digitalization engenders

for different aspects of competition law and policy and presents an overview of some possible solutions. It considers the cross-border implications of competition enforcement, as many digital businesses are global and digitalization makes national boundaries less consequential. It discusses cross-policy implications as competition policy increasingly interacts with data protection/privacy issues and international trade.

Several in-depth reports have been prepared in the ongoing debate on the correct scope, purpose and capabilities of competition law and policy to tackle the challenges of the digital economy.⁸ This white paper contributes to this important discussion and provides a set of policy recommendations.

Digital markets – digital economy – digital world

“Digital markets” can be defined as those in which companies develop and apply new technologies to existing businesses or create new services using digital capabilities.⁹ The impact of digital technologies is felt across the economy, including in traditional sectors such as agriculture, construction and utilities. A truly “digital economy” is one in which businesses from across the industrial spectrum invest in digital capabilities and make the most productive use of them. As digitalization continues to transform the economy, and the line between offline and online businesses further blurs, concepts such as “digital markets” and “digital economy” may become redundant.¹⁰ For rigorous, forward-looking policy-making, “digital markets” or the “digital economy” should not be treated as segments distinguishable from the rest of the economy.

Features of multisided digital platforms

Many digital businesses subjected to contemporary competition scrutiny employ the multisided platform model. This model involves distinct but interdependent sets of users interacting with one another via the platform.¹¹ Traditional examples of multisided platforms include newspapers, real estate agents and credit card networks. This model has been so successful online that seven of the world’s top 10 companies by market capitalization operate digital platforms.¹²

Platforms differ in important ways, including how they generate income, their size and profitability.¹³ There are notable differences between platforms that primarily generate revenue from advertising (usually to fund “free” services to users) and those that generate revenue from transaction-based commission or subscription fees.

Examples of the former are search or social media services provided to users by Google or Facebook. Examples of the latter are ride-hailing or room rental services provided by Uber or Airbnb. Such differences in revenue generation are important for understanding, for example, the relevance of user data for the platform's operations. Similarly, the business dynamics of transaction platforms differ from those of non-transaction platforms because the former must facilitate the conclusion of a transaction between users on different sides of the market on the platform to generate revenue. Competitive dynamics also differ depending on the platform's business model. For example, multihoming (i.e. switching between, or simultaneous use of, competitor services) can be prevalent on one or both sides of the platform depending on the platform's business model.

Platforms also share many common features. Unlike traditional firms, platforms are not driven by supply-side economies of scale but by demand-side economies of scale, and shift production from inside the firm to outside the firm. Platforms not only create value themselves, but "orchestrate" external value creation through the interactions they facilitate.¹⁴ Consequently, platforms need to attract at least two different groups of users who will interact with each other. Such platforms are "matchmakers", reducing transaction costs for parties who have something valuable to exchange.¹⁵ Unlike traditional firms, platforms first need to create economic value through these interactions, then achieve critical mass and network effects before they can capture a share of that value for monetization purposes.¹⁶

Digital platform markets have characteristics that require consideration in analysing their competitive conditions.¹⁷ Their multisided nature implies that the participation of one group of users generates "network externalities" on the platform's other side. Cross-network (indirect) externalities exist where demand on one side of the platform depends on participation on the other side (e.g. ride-hailing requires drivers and riders).¹⁸ Platforms may also benefit from direct network effects, where a user's utility from the service directly increases with the number of other users of that service (e.g. social networks).¹⁹ Network effects imply that the efficiency and user benefits of platforms increase with their size. Network effects also affect the pricing structure (i.e. the relationship between the prices charged on the platform's different sides). For multisided platforms, how the total price is divided between different sides may matter as much as price levels. This explains the frequent occurrence of zero-prices to users on one side subsidized by payment on the other side. Economies of scale are also typical in multisided markets, given their relatively high proportion of fixed costs (e.g. for research and development) and low variable costs.²⁰

The particular features of multisided businesses and network effects can engender "winner-takes-all" dynamics and competition based on "ecosystems".²¹ Prevalence of network effects may imply competition *for* the market rather than *in* the market.²² However, not all markets with online platforms are "winner-takes-all" or "winner-takes-most" markets, because these require strong network effects, high switching costs and user multihoming to be undesirable or difficult.²³ Similarly, strong network effects can make these markets simultaneously efficient and concentrated. There is, thus far, no clear benchmark for efficient market structure in digital platform markets.²⁴

Impact of digital platforms on the economy

For business users, platforms can simplify and reduce the costs of logistics and payment processing, enhance communications among suppliers and/or consumers and offer tailored advertising possibilities.²⁵ They can enable new firms to establish an online presence and generate revenue in a global marketplace. By providing both small and medium-sized enterprises (SMEs) and large companies with a distribution channel, platforms level the playing field between them and facilitate the same exposure to potential customers for both, thereby "democratizing markets".

For consumers, platforms reduce search costs, facilitate price and product comparisons and enable distance shopping. Similarly, platforms create new options for consumers, including shared workspaces, ride-hailing, food delivery and local freelance opportunities. These features provide consumers with more information, convenience, choice and competition, which reduce prices and improve quality. This is not to say that the economic effects of platforms have all been beneficial, given the myriad ways in which they can influence competition and privacy issues. Numerous tax-, employment- and data/privacy-related concerns have been voiced globally, suggesting that there are wide-ranging issues requiring consideration when discussing the overall economic impact of platforms. Platforms may also have put companies out of business or substantially dented their performance. In the long run it is beneficial, in terms of consumer welfare and productivity, for less efficient companies to exit markets and be replaced by more efficient ones, provided that this happens within a competitive environment. It is crucial to distinguish these effects from those that are anticompetitive.

Evolution of competition law

Competition among firms increases productivity, economic growth and choice for customers. Competition enhances the productive efficiency of firms and allocative efficiency (by enabling more efficient firms to enter and less efficient firms to exit the market). Policies that ensure markets operate more competitively (e.g. through competition law enforcement and removal of regulations hindering competition) will generate faster economic growth.²⁶ More than 130 jurisdictions around the world have adopted competition laws to reap the benefits of a free-market economy. This proliferation has resulted from, among other things, the uptake of free-market principles, the abolition of many legal monopolies, liberalization and international agreements favouring free trade.²⁷

There are no binding multilateral competition rules.²⁸ International organizations such as the Organisation for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) and the International Competition Network (ICN) work to fill the resulting gap. They help competition enforcers to reach a common understanding, find common principles and enhance international cooperation in enforcement. Regional networks such as the ASEAN Experts Group on Competition, BRICS competition authorities and the European Competition Network pursue similar aims.

National competition regimes share important commonalities. They almost invariably include prohibitions against cartels (anticompetitive agreements and arrangements between firms that eliminate competition), control of mergers and acquisitions based on their competitive effects and action against firms with market power for anticompetitive behaviour. Important differences exist regarding enforcement: While some jurisdictions (e.g. the US) adopt an adjudicative method, others adopt an administrative method (e.g. the EU).

Despite differences in legal texts, most authorities agree on the goals of competition law, the principles underpinning a sound competition policy and the appropriate tools to investigate and assess business practices.²⁹ There is also general agreement that competition law and policy should “protect competition, not competitors”.³⁰ Economic analysis is the dominant methodology: “Competition law is about the economic analysis of markets within a legal process”.³¹

Most competition laws focus on the welfare of consumers despite differing in how explicitly they state this.³² Economic welfare (or surplus) is the standard concept used in economics to measure the performance of a given industry.³³ “Consumer welfare” is the aggregate measure of the surplus of all consumers in an industry. Although a welfare standard does not consider issues of income distribution, because it is focused on “maximizing the size of the pie”, it can – and should – be interpreted dynamically to recognize the introduction of new products/services through investments in innovation and future quality improvements.³⁴ Competition regimes in countries with different economies and at different development levels can pursue different objectives.

In the debate about optimal competition policy in digital markets, some advocate abandoning the “consumer welfare” approach as the dominant paradigm. Such commentators are mostly from the US and subscribe to the so-called “new Brandeis School”.³⁵ They take issue with the consumer welfare standard because it focuses on outcomes (such as efficiency and low prices), rather than on market structures and processes of competition.³⁶ In the digital economy, a central concern of those arguing for abandoning consumer welfare is the fact that many digital services are provided at zero-price to consumers. Where the price is zero and consumers “pay” with their attention or data for the service and quality is difficult to observe, consumers may not be appreciative of their “surplus” or the economics of their transaction.³⁷ Another shortcoming of the standard is arguably the possibility of its overlooking anticompetitive predatory strategies aimed at excluding rivals with low prices to consumers.³⁸

For various reasons, a similar debate has not taken hold in the EU. First, consumer welfare is one of many goals that the EU authorities pursue.³⁹ Second, any consumer welfare standard used in the EU always has a broader focus than simply price and takes into account other factors including choice, quality and innovation.⁴⁰

Despite its imperfections and practical difficulties, the consumer welfare standard has broad appeal among enforcers globally.⁴¹ When construed properly to include all parameters of competition that matter to consumers, it provides legitimacy to competition enforcement for its all-inclusiveness: Everyone is a consumer. It signifies that the purpose of competition law is to protect competition for the benefits that it delivers to all citizens as consumers rather than protecting competitors for their own sake.⁴² Consumer welfare can also provide a foundational basis for international cooperation efforts regarding enforcement actions involving multinational businesses in dynamic, global markets.

Globalization, digitalization and competition law

Aspects of prevalent digital business models have raised competition concerns and questions about the fitness of the existing framework. Although many features of the digital platform business model are not novel, their combination, coupled with the pace of change and the global reach of some market players, is challenging for competition authorities acting alone.⁴³ Practices raising competition concerns in the digital sphere can simultaneously have anticompetitive and pro-competitive effects, requiring lengthy enforcement procedures under fast-moving market conditions.⁴⁴

What, in law, is a platform?

The legal nature of a digital platform or the service it provides is an unresolved issue in competition and other areas of law. For example, transaction platforms such as Apple's App Store may be considered to be "agents" of their suppliers, intermediating transactions between them and consumers, or as "retailers".⁴⁵ Whereas finding the platforms to be agents means that competition law does not apply to aspects of the agreement between suppliers and the platform, determining that they are retailers means that the law does apply.⁴⁶ Similarly, judging whether platforms provide an underlying service to consumers or supply a technology service can lead to different (e.g. whether a ride-hailing app is determined to be a transport service provider or an information-society services provider).⁴⁷ The legal characterization of digital platforms can also lead to business uncertainty, if the same business model is characterized in mutually exclusive ways by different enforcers or across jurisdictions. For example, a platform may be considered an employer of platform users on the supply side or a facilitator of a cartel arrangement between those users. An employment relationship between two parties, similar to an agency relationship, excludes the agreement from the application of competition law.⁴⁸ The same parties to the same agreement cannot simultaneously be in an employment relationship and a cartel.

Anticompetitive agreements

Anticompetitive agreements distort, restrict or eliminate competition through a "concurrence of wills" between undertakings.⁴⁹ Competition laws prohibit such agreements, as well as concerted practices, falling short of "agreement". A particular challenge is to establish whether parallel conduct by firms in oligopolistic markets (with only a few major competitors) results from collusion between the firms or is a natural response to the market's structure.⁵⁰ While the former is prohibited, the competition law approach to the latter is more complex. This becomes particularly relevant in digital markets, as some of them are oligopolistic.

Agreements can be anticompetitive where they entail such practices as fixing prices between competitors, limiting output or imposing price or other sale/supply conditions on downstream intermediaries. Some agreements are considered to inherently restrict competition, while others are deemed to restrict competition only if they demonstrably have anticompetitive effects. Jurisdictions differ on the categorization of particular agreements.

Horizontal agreements: agreements among competitors

Big data and algorithms enable firms to fine-tune their pricing strategies and predict market trends. Digital platforms usually involve transparent prices and, sometimes, algorithms set prices. Algorithmic pricing can benefit consumers by reducing transaction costs or market frictions.⁵¹ Some business practices involving automated, algorithmic pricing decisions may constitute anticompetitive agreements. Using algorithms is not new or limited to digital businesses, but algorithmic pricing is easier in online settings where data-scraping methods allow for real-time data collection and automatic and frequent price adjustments.⁵² A major challenge regarding collusion is to distinguish between firms' intelligent and unilateral reactions to market conditions to maximize profits and practices that result from cooperating with competitors. The use of algorithms further complicates this issue.

Where an anticompetitive agreement exists and algorithms monitor or enforce that agreement, the application of competition law is relatively straightforward: That computer software rather than humans executed the agreement is irrelevant in establishing an infringement.⁵³ Algorithmic price-setting may facilitate collusion by simplifying the monitoring and punishment of deviation from a collusive agreement, because transparency and quick price changes are collusion risk factors.⁵⁴ However, data and algorithmic pricing can also facilitate price discrimination and "personalized pricing" (charging customers different prices based on their willingness to pay), which reduces the possibility of collusion by making it more difficult for competitors to observe and detect deviation from a collusive arrangement.⁵⁵ Similarly, sophisticated buyers can use algorithms in their purchasing decisions, which can alter the dynamics of their interaction with suppliers.⁵⁶ The most complex scenario is where profit-maximizing algorithms reach a collusive outcome without an explicit agreement between firms or instructions from algorithm designers and where firms are setting prices unilaterally.⁵⁷ Depending on the algorithms and behaviour of the firms, competition law may or may not be applicable in such scenarios.⁵⁸

Hub-and-spoke collusion

Digital platforms could coordinate the behaviour of their various suppliers (e.g. sellers in a marketplace). This could facilitate horizontal coordination with or among suppliers through their individual agreements with the platform. For example, transaction platforms may be able to facilitate collusion among sellers on one side of the market by acting as a “hub” for the exchange of information between competitors in a collusive agreement. Such a “hub” could also be an intermediary that provides the same pricing software to competitors. It may be challenging to decide whether agreements between such intermediaries and suppliers should be assessed as vertical agreements or as a hub-and-spoke cartel (which may be prohibited without any effects-analysis being required).⁵⁹ The distinction between vertical and horizontal restrictions on competition is increasingly blurred in the online context – particularly for platforms, due to their cross-market activities.

Vertical agreements: agreements within the supply chain

Vertical agreements between firms operating on different levels of a supply chain can contain restrictions of competition. For example, a manufacturer can impose pricing, quantity or territorial restrictions on retailers, reducing competition at retail level. For most vertical restraints, competition concerns arise only when insufficient competition (i.e. market power) exists at one or more levels of the supply chain.⁶⁰ Vertical restraints can generate significant efficiencies⁶¹ – and consequently are usually assessed by an economic analysis of their effects on the market. The effects-analysis involves balancing the risk that vertical restraints may reduce competition (e.g. by facilitating some form of [price] coordination or market foreclosure) with their pro-competitive effects (e.g. protecting investments of suppliers or distributors in quality improvement or demand-enhancing services).⁶²

There have been many enforcement actions regarding online vertical restraints. Some involve “resale price maintenance”, whereby manufacturers fix the price at which their products are advertised or sold online by retailers (e.g. to protect brick-and-mortar sales from price competition).⁶³ Others concern “most-favoured-nation (parity) clauses”, whereby platforms (e.g. online travel agents) seek parity between price and other conditions of sales on their platform and the supplier’s (e.g. a hotel’s) own website and sales channels and/or other platforms.⁶⁴ Other cases involve “selective distribution” arrangements, which may limit the ability of distributors to sell online (e.g. online marketplace bans).⁶⁵

Most, if not all, of these vertical restraints simultaneously generate efficiencies and potentially anticompetitive effects.⁶⁶ For example, most-favoured-nation clauses combat the risk of disintermediation for transaction platforms, which generate revenue only when the transaction is concluded on the platform. Similarly, selective distribution or resale price maintenance can alleviate free riding on investments and higher levels of customer services (including across online and offline outlets). Yet the same restraint can simultaneously foreclose competition where, for example, most-favoured-nation clauses prevent the possibility of undercutting an incumbent platform to enter the market. These restraints also highlight the increased relevance of the dynamics between price competition and competition on other aspects such as quality, availability and service level. Many of these restraints are attempts at sustaining non-price aspects of competition in the face of increased price competition from online channels.

Different enforcement approaches have emerged when assessing practices with similar effects on competition, due to a focus on the form of conduct. Such divergence can generate business uncertainty and increase compliance costs. Recent decisions in Europe concerning the most-favoured-nation clauses of online travel agents and other platforms (e.g. insurance comparison websites) are cases in point.⁶⁷ A focus on form rather than effects of conduct can also engender enforcement errors.

Abuse of dominance: market power and unilateral conduct

Rules prohibiting “monopolization” (e.g. in the US) or “abuse of a dominant position” (e.g. in the EU) require authorities to define the “relevant market” in which the firm under investigation competes, assess whether it has “market power” and whether it uses that power to engage in anticompetitive conduct. Recent debate has focused on the use of market power by big tech companies – Google, Facebook, Amazon, Apple and Microsoft. However, smaller companies can also be subject to these rules if they are “big” in a “relevant market”.

Market definition

The preliminary step of defining the “relevant market” involves determining the substitutes that exert competitive pressure on the products/services of the investigated company.

Multisided platforms present difficulties here. For example, there is no consensus on whether the two sides of a platform are in the same market and in which circumstances.⁶⁸ This

matters not only for assessing market power, but also in considering which efficiencies can offset any anticompetitive effects of conduct. Digitalization also raises questions about whether and when online and offline markets (e.g. in advertising) are in the same “relevant market”.

The fact that many digital platforms charge no monetary price to consumers renders traditional market definition tools unsuitable. Those tools establish the relevant market by investigating which alternatives consumers would switch to if the price of the investigated firm’s product/service increases by a certain percentage. Certain courts (e.g. in the US) have found that where there is no monetary price, there can be no relevant market (and thus, no competition case).⁶⁹ Legislators in other countries (e.g. Germany) have amended the law to ensure that zero-prices do not prevent competition investigations.⁷⁰

Economists warn against an overly mechanical approach to market definition that fails to consider competitive pressures outside a market. What matters, irrespective of the specific market definition, is considering both the interrelationships and interactions between the different sides of a platform. In digital markets, it may be impossible to provide well-defined markets.⁷¹

Dominance: significant market power

Market power refers to a firm’s ability to profitably increase price above competitive levels for a significant period of time.⁷² It also covers a firm’s ability to influence, to its advantage and to the detriment of consumers, other parameters of competition, such as output, innovation, quality and variety.⁷³ Competition laws do not normally prohibit the existence of market power, but rather limit the use of market power to foreclose, distort or eliminate competition. Acquiring market power through competitive means by offering better products/services and outperforming rivals is not a competition problem.

Standard approaches to measuring market power may need to be adapted for multisided markets.⁷⁴ Traditionally, the starting point has been the “market share” of the investigated company in the “relevant market”. In multisided markets, in which prices do not reflect the value of a product/service to customers because of network effects and/or because of zero-prices, market shares are less meaningful.⁷⁵ In assessing market power in digital markets, understanding the pricing structure and business model (including the non-price conditions such as quality offered to different sides of the market) should be a first step. Focusing on one side of the market can over- or underestimate the degree of market power by failing to assess the influence of competitive conditions on the other side.⁷⁶ For multisided businesses, assessment of market power should involve the

firm’s market shares in the revenue-generating segments of the market.⁷⁷ Multihoming by customers also matters, as it can overcome the tendency of concentration generated by network effects.⁷⁸ The market position of competitors, entry/expansion barriers and countervailing buyer power are also critical in determining market power.

One contentious issue is whether access to data provides a competitive advantage. Some argue that, if data that is unavailable to entrants provides a strong competitive advantage to the incumbent, its possession may lead to dominance.⁷⁹ Whether data provides a competitive advantage depends on data substitutability, data complementarity and data returns to scale. Theoretical arguments and empirical evidence on this are still scarce and equivocal.⁸⁰ Various types of data can be collected by small companies or acquired from the broker industry.⁸¹ The available evidence on the extent to which any data advantage of incumbents is insurmountable is arguably mixed.⁸² The disruption of markets by entrants such as Airbnb, Uber, Spotify, Snapchat, Tinder and WhatsApp suggests that entry is possible, at least in some segments, without a data advantage. Further theoretical and empirical research is necessary on the types or features of data that may constitute entry/expansion barriers and the importance of data for establishing market power.

Abusive conduct: exercise of market power

Competition laws prohibit the unilateral exercise of market power where this may harm competition. Such harm to competition can be “exclusionary”, resulting from conduct aimed at eliminating competition from existing or potential competitors. In some jurisdictions (e.g. the EU, but not the US), “exploitative” use of market power to extract advantages from trading partners/customers by, for example, charging unfair prices, is also prohibited.⁸³ Unilateral exercise of market power can involve practices that may be unobjectionable for firms without market power.

Abuse of dominance (monopolization) is the least consistently enforced area of competition law globally.⁸⁴ There is no consensus as to which features of unilateral business conduct make it anticompetitive, the relevance of the form and effects of conduct, the relevance of harm to competitors, the role of justifications (e.g. efficiencies), etc. Notably, the EU and the US diverge on the assessment of unilateral conduct, with the former adopting a more interventionist approach.⁸⁵ This divergence predates the debate surrounding digital markets. Yet it has taken on particular significance in digital markets as the technology companies pursued in recent European “abuse of dominance” investigations have all been US companies, adding a political dimension to the controversy.⁸⁶

There is broad consensus that conduct is “exclusionary” where it harms the competitive process by weakening the ability of competitors to compete *and* it does not constitute competition on the merits. Yet there is no consensus as to what “competition on the merits” or “harm to competition” means.⁸⁷ In practice, enforcers use proxies, such as whether the conduct excludes rivals as efficient as the dominant undertaking from the market or whether conduct would make any economic sense but for its likelihood of excluding competition. In most jurisdictions, the onus is on the claimant to prove exclusion/exploitation, which the defendant can justify by efficiencies, legitimate business justifications, etc. In practice, justifications may be hard to prove even in dynamic markets that deliver innovation benefiting consumers.⁸⁸

Recent high-profile competition cases involving digital platforms concern leveraging of market power from one market into another; exclusivity arrangements; tying and bundling of products/services; combination of user data from different sources, etc. The EU and its member states (notably Germany) have been particularly active in enforcing unilateral conduct prohibitions. Three infringement decisions were taken against Google in the EU (regarding search and comparison shopping, Android and AdSense) and one against Facebook in Germany (regarding data practices).⁸⁹ There is also growing impetus for more enforcement action against big tech companies in the US.⁹⁰ Ongoing appeals and court proceedings concerning various decisions will be instrumental in shaping the future of competition law in digital markets.

Whereas some recent decisions regarding unilateral conduct in digital markets implement established legal and economic theories of harm, others sail into uncharted waters. The latter have engendered different outcomes in similar cases in different jurisdictions.⁹¹

“Self-preferencing”: This refers to giving “preferential treatment to one’s own products or services, or one from the same ecosystem, when they are in competition with products and services provided by other entities”.⁹² Such theories, developed in the EU, raise questions regarding the distinction between legitimate commercial practice that pursues self-interest and anticompetitive conduct that excludes rivals. Existing models of leveraging market power from one market into another, built on the premise that markets can be clearly delineated, may be unsuitable for digital “ecosystems” with integrated functionalities. Existing theories of abusive discrimination and tying and bundling may suffer from similar application difficulties.⁹³ “Platform neutrality” principles underlying “self-preferencing” theories require policy-makers to decide where “competition” ends and “regulation” begins.⁹⁴

Discrimination: Regarding platforms with a “dual role”, which act as an intermediary for third-party suppliers while also supplying products/services on their own platform (e.g. Amazon Marketplace and Apple’s App Store), issues relate to possible discrimination against third-party suppliers to boost the platform’s own sales (e.g. through rankings). These concerns may additionally involve the use of data obtained from sales of suppliers to the platform’s advantage.⁹⁵ There is increased regulatory and enforcement action regarding use of market power by platforms with respect to their suppliers, particularly in Europe.

Refusal to supply access by “gateways”: Regarding e-commerce, issues may arise concerning access to marketplaces that are “gateways” for consumers; access to consumer data; access to physical delivery networks developed by large platforms, etc.⁹⁶ Under existing competition law frameworks, refusal to provide access or supply an input to rivals is generally narrowly construed as a potential abuse. This results from the need to protect property rights and the possible counterproductive effects on innovation and investment incentives.⁹⁷ Nevertheless, where there is an “indispensable” or bottleneck infrastructure or intangible property and refusal to supply access would restrict most or all competition in a related market, most jurisdictions acknowledge a limited obligation to supply access.⁹⁸ Whether the relevant access is “indispensable” and whether a given dataset or access to the platform constitutes an “essential asset” are crucial factors for the legal assessment.⁹⁹ Implications of such mandatory access must also be considered for potential clashes with privacy and data protection requirements.

Exploitative abuse: In Germany, the Federal Cartel Office (Bundeskartellamt) recently found that Facebook’s data processing policies infringed competition law as an “exploitative abuse”, since Facebook’s combining of user data from different sources violated data protection rules.¹⁰⁰ The suspension of this decision by a German court suggests that, even for businesses that heavily rely on data, irregularities under data protection law may not automatically imply infringement of competition law.¹⁰¹ Fine-tuning the approach to “exploitative abuse” of dominance and the role of platforms’ terms and conditions, including data policies, will be increasingly important as more enforcers and policy-makers scrutinize the relations of platforms with business users.¹⁰²

Tying and bundling: Traditionally, these infringements require distinct products/services, which are supplied as a bundle by a dominant undertaking to leverage market power from the dominant market (e.g. shoes) into another market (e.g. shoe polish). In digital markets, the limits of different products/services in an “ecosystem” (e.g. whether related services offered by a platform constitute distinct services) and the degree to which any tie is binding on consumers may cause difficulty for competitive assessments.¹⁰³

Predatory pricing: The predation theory proceeds on the premise that a firm with market power can exclude competitors from the market by providing its products/services at low prices (normally below cost) for a certain length of time. E-commerce platforms (e.g. Amazon) and disruptive businesses upsetting regulated industries (e.g. Uber) in particular have raised concerns.¹⁰⁴ Correctly identifying predation and distinguishing it from legitimate competition – which engenders low prices – is extremely difficult, particularly in markets with network effects. For platforms in a growing stage, prices below any given level of cost signify little.¹⁰⁵ Multisidedness and zero-prices on one side cause particular difficulty in assessing predatory pricing. Providing services at zero-prices should not be considered proof of predation but should be examined alongside the revenues generated from other sides of the market (e.g. advertising).¹⁰⁶ Thus, revenues and costs from different sides of the market should be considered together.¹⁰⁷

Merger control

In the past decade, Google, Amazon, Facebook, Microsoft and Apple combined have reportedly made over 400 acquisitions globally.¹⁰⁸ Many mergers raise no competition concerns, and the great majority of acquisitions by large digital companies have probably been benign or beneficial to consumers.¹⁰⁹ To date, authorities have cleared all mergers involving major digital platforms.¹¹⁰ However, some have expressed concern about “kill zones” around big tech firms: The idea is that the large digital companies acquired start-ups that might be future competitors. Mergers such as Facebook/Instagram, Facebook/WhatsApp, Google/DoubleClick and Google/Waze have attracted particular attention in retrospect. Acquisitions of start-ups by established technology companies do not always meet turnover-based thresholds that trigger merger review and/or notification requirements because the start-ups do not generate significant turnover at the time of acquisition. Yet the transaction value of some of these acquisitions suggest that the turnover of the start-ups may not reflect their (competitive) value.¹¹¹ This has led some jurisdictions to amend their merger control rules and introduce additional transaction value-based thresholds.¹¹²

Mergers between established firms and start-ups can generate important synergies and efficiencies.¹¹³ Technology acquisitions normally lead to the target's integration into the acquirer's ecosystem to provide complementary services, rather than “killing” innovation, as has been the case with “killer acquisitions” in sectors such as the pharmaceutical industry.¹¹⁴ Similarly, start-ups either monetize the user base they build in the early stages of product development at a later stage or hope to be acquired. Acquisition by a large company is an important exit strategy, incentivizing private financing of high-risk innovations.¹¹⁵

Concerns arise when mergers preclude competition in concentrated markets, where acquisitions in adjacent markets harm downstream rivals or raise entry barriers and prevent potential competition from the fringe.¹¹⁶ To assess mergers involving incumbents in digital markets, enforcers have to predict the evolution of the target firm absent the merger, which is particularly difficult when, as is often the case, the targets are young firms.¹¹⁷ An *ex post* review of some digital mergers suggests that enforcers need to pay more attention to the multisided nature and monetization strategies of the businesses by, for example, investigating the effects not only on consumers but also on the other side of the market, particularly for advertising-funded “free” services.¹¹⁸

Where the merger involves the acquisition of datasets and specific data resources held by the target firm, this can have pro-competitive effects (e.g. provision of new services) but may also beget foreclosure of competition (e.g. through control over non-replicable data).¹¹⁹ Various authorities have dealt with such cases using the current framework, which provides the necessary tools. Similarly, using existing frameworks, authorities have considered non-price aspects pertaining to data (including privacy) where their market investigation revealed such aspects to be a parameter of competition and consumer choice.¹²⁰ In digital markets, it may be necessary to examine not just short-term effects, but also long-term effects of mergers on competition and consumers.¹²¹ The same goes for considering innovation competition alongside product competition (rather than as a separate research and development phase preceding product competition), since in digital markets, product competition usually is innovation competition.¹²²

Cross-policy implications

It is important to situate debates on competition and digitalization in a broader policy context and understand where competition intersects with other objectives. For instance, societal concerns about inequality and fairness generate discontent at low effective corporate tax rates, trade liberalization and globalization more generally. Research suggests that retreating from globalization can lead to “a smaller (economic) pie, more poorly distributed”, hitting poorer countries harder.¹²³ Globalization needs to be complemented by better domestic policies (including on tax, labour and competition) to ensure that the gains are justly shared.

Meanwhile, trade wars complicate the international aspects of competition policy and global competitiveness. The multilateral trading system struggles to deal with new economic growth models (such as China’s), new business realities and protectionist trade policies. The struggle for technological dominance partly underlies ongoing trade tensions between global powerhouses such as the US and China. This interplay between competition, trade and industrial policies requires a delicate balancing of interests, such as creating “national champions” against enhancing productive efficiency.

Thus far, the digitalization of the economy has been led mostly by the developed world, which complicates this balancing. On the one hand, digital platforms enhance economic development by enabling SMEs in developing economies to enter global value chains via third-party business-to-business platforms and access customers abroad and by facilitating cross-border work opportunities.¹²⁴ On the other hand, developing countries are at different levels of preparedness in the move towards a digitalized economy. For them, benefiting from digital technologies may depend on their having the flexibility and policy space to design their economic and industrial policies, as well as national regulatory frameworks, to promote digital infrastructure and digital capacities.¹²⁵ This may require ensuring that trade and investment rules do not hamper developing countries’ efforts to keep up with the technological revolution.¹²⁶ Equally, protectionist measures are likely to negatively affect economic growth by limiting healthy competition between firms and the threat of innovative entrants.¹²⁷ Although “digital globalization” is currently expanding, barriers to digital trade can threaten this. Tensions concerning data security and privacy risk fragmenting “digital globalization”.¹²⁸

This leads to another challenging interplay, namely that between privacy, data protection and competition policies. The global trend is to move towards greater privacy and data protection rules and international compliance frameworks.¹²⁹ For example, the US Federal Trade Commission (FTC) recently imposed a record-breaking fine of \$5 billion and corporate restructuring in a settlement with Facebook for privacy violations.¹³⁰ A major exception to this trend is China.¹³¹ Data policies are also lacking in most developing countries, possibly due to capacity constraints rather than choosing less privacy.¹³²

Policy-makers and enforcers globally face the question of whether privacy or data protection considerations should be part of the competitive assessment of conduct adopted by digital businesses, as data is integral to their business models. Responses differ between those who view privacy as a non-economic matter better dealt with under policies other than competition and those who view privacy and data policies as part of the economic bargain struck between digital service providers and users.¹³³

From a substantive outcome perspective, these policies do not always give the same answer to the same question, as they pursue different aims. For example, complex and voluminous data protection obligations can adversely affect competition if they engender disproportionate compliance costs and barriers for SMEs. However, a right to data portability provided under data protection rules can have pro-competitive effects by enabling multihoming and lowering entry/expansion barriers for rivals.¹³⁴ Yet again, a competition law remedy requiring access to data by an undertaking’s rivals can infringe privacy rules. Ideally, policy responses and enforcement at the intersection of privacy, digital security and competition should aim to advance each of these interests without unnecessarily impinging on the others.¹³⁵

The way forward

There is a spectrum of opinions on the way forward for competition policy in digital markets. Jurisdictions such as the EU, UK, Australia, Japan, Germany and France are exploring potential changes to existing frameworks, having moved beyond the question of *if* to that of *how*. Recent developments in the US also suggest that critical times lie ahead, particularly for big tech companies and their business models. The proposals for change are not limited to the practices of the large players and can have repercussions for a range of businesses with digital operations.¹³⁶

Several in-depth reports have explored various issues and proposed recommendations. Existing competition rules and frameworks are generally considered adequate, with some rethinking needed in areas such as merger control.¹³⁷ The reports proceed on the premise that there has probably been under-enforcement and/or that under-enforcement is likely to be more costly than over-enforcement in digital markets.¹³⁸ The complexity and opacity of some sectors, particularly the digital advertising market (providing the main revenue source for ad-funded “free” services), is a common concern.¹³⁹ Broadly speaking, the recommendations involve a mix of regulatory solutions and sharpened competition tools.

One recurring suggestion is the creation of a specialist digital markets unit (within or outside the competition authority) or a separate digital authority. Proposed functions include developing and applying a “code of conduct” to companies that have “strategic market status”; enabling greater personal data mobility and systems with open standards; advancing data openness where access to data constitutes an entry barrier; creating conditions conducive to competition; reviewing mergers involving digital bottlenecks; collecting data and monitoring developments in digital markets.¹⁴⁰

Other regulatory options include adopting specific rules to govern the relationship between platforms and their business users. The EU has already taken this step, and Japan is expected to follow suit in 2020.¹⁴¹ These rules cover a range of measures regarding transparency, terms and conditions and ranking practices. Another proposal is to create dispute resolution and effective redress mechanisms, including ombudsman schemes.¹⁴² Data portability, data access and data interoperability are all aspects of various recommendations.¹⁴³ Treating digital platforms like utilities and applying utility-style regulation or breaking them up to regulate them are rejected for being inappropriate in fast-moving, diverse digital markets.¹⁴⁴

Most merger control recommendations do not require radical changes to existing frameworks.¹⁴⁵ Proposals involve more closely examining the long-term effects of digital mergers, which include effects on future levels of innovation and competition, as well as protection from threats of competition that can come from the “fringe”.¹⁴⁶

Regarding enforcement, greater use of interim measures by competition authorities is recommended to combat the slow-moving nature of enforcement cases.¹⁴⁷ More drastic suggestions include lowering the standard or reversing the burden of proving an infringement or decreasing the level of judicial review applied to competition authority decisions.¹⁴⁸ One controversial proposal is to categorize certain unilateral conduct in digital markets as presumptively unlawful, with the burden of proof shifting to incumbents to show that they are pro-competitive.¹⁴⁹

A caveat is necessary. The expert reports are not based on empirical studies of the relevant markets and do not contain impact assessments of any of the proposed solutions, as these were not within their remit. They rely on existing theoretical and empirical research and voluntarily submitted responses to calls for evidence, where applicable.¹⁵⁰ Thus, the recommendations must be complemented by robust, systematic, empirical studies of the relevant markets and impact assessments of the proposals before evidence-led changes can be introduced.¹⁵¹ Some authorities (e.g. those in the UK and Australia) are already building this evidence base through market inquiries and studies.

The way forward will involve a mix of market-driven solutions and regulatory solutions alongside the use of competition, consumer and data protection enforcement tools. The right approach needs to include an assessment of which solutions can best optimize the benefits of digitalization, at the lowest cost. Accordingly, the following recommendations are offered:

1. When it comes to platforms, one size does not fit all. Insufficient consideration of the differences among different platforms, the multisided nature of businesses or different revenue generation models can lead to enforcement errors and suboptimal regulatory solutions. A deeper understanding of the relevant digital markets, different business models and competition in digital markets is crucial. Competition authorities should use surveys, market studies or market inquiries to this end.¹⁵² Existing evidence on competition in markets such as the digital advertising market or the relationship between concentration levels and competition is inconclusive and must be enhanced.¹⁵³ Enforcers should improve expertise in data analytics and algorithms¹⁵⁴ and develop tools to use data for monitoring market activities and designing effective remedies. This could require the formation of technology units, but creating separate digital authorities may not be meaningful as digitalization permeates the entire economy.

2. Some competition law tools need rethinking. This results from a combination of market features such as strong network effects leading to competition *for* the market and oligopolistic market structures and multisided business models that differ from traditional models regarding value creation, revenue generation and use of data. The business models of technology companies challenge existing categories of anticompetitive conduct. In many digital practices that raise competition concerns, legitimate business justifications and efficiencies are closely linked to the potential for restricting competition.¹⁵⁵ Existing economic models used to assess competition may fail to capture both the pro-competitive and the anticompetitive effects. Traditional tools used to define markets or scrutinize mergers and acquisitions may need updating to remain effective. The relevance of data for establishing market power, the role of intermediaries in vertical supply chains, ecosystem- and innovation-driven competition, machine-generated outcomes and collusion and theories of leveraging market power are aspects of digital competition that require more research and broadening of the knowledge base in reconfiguring competition policy.

3. Upending established competition law frameworks appears unwarranted. Competition laws contain broad, open-ended rules and have been applied to a wide range of market practices, including those of technology companies and multisided platforms. Competition authorities have some of the widest-ranging powers and tools of any administrative authority, including powers to break up companies, impose behavioural remedies and set substantial fines. Whether enforcement is at an optimal level is a separate question from whether the law should be changed. Upending established legal frameworks would require robust evidence that the law systematically fails to achieve its aims. This does not appear to be the case with competition law.¹⁵⁶ Proposals to change existing legal standards for proving infringements, for example, by adopting presumptions of unlawfulness for unilateral conduct or lowering the level of judicial review, must be evaluated in the context of the (quasi-)criminal nature of competition law sanctions in many jurisdictions (including the EU) and rule of law requirements. This is particularly pertinent for jurisdictions with administrative enforcement models in which the fact-finder is also the decision-maker. Similarly, the lack of consensus, in theory and in practice, as to the competitive assessment of many digital practices cautions against radical changes. Where new rules are created, reliance on ambiguous or underdeveloped concepts (e.g. “self-preferencing”) should be avoided.

4. Global businesses in global markets require global responses. International cooperation in policy-making and enforcement in competition and related matters should be boosted. Cross-border coordination is essential for addressing competition and consumer concerns arising from the practices of the leading digital platforms.¹⁵⁷ Developing countries’ capacity constraints are aggravated in cases concerning digital markets, due to the data-driven nature of the businesses and practices and the necessity of enforcing laws against multinationals. International cooperation and consensus-building efforts such as those promoted by the OECD, UNCTAD and ICN should be supported.¹⁵⁸ New frameworks for cross-institutional cooperation may be necessary where the same practice implicates related areas of policy (e.g. competition, consumer protection and data protection). The optimal balance between competition and regulation regarding issues that cut across policies requires further exploration.

5. Predictability and convergence of regimes is important for promoting innovation and investment in technology. Businesses operating globally are subject to more than 130 different competition regimes. Given the borderless nature of the technologies involved, the potential benefits from an international set of competition rules may be greater than before. Not only would international rules level the playing field, inject competition into local markets and reduce compliance costs, they could also support international trade as so many value chains are cross-border. It may be timely to seek international consensus on the driving principles and rules of competition law and policy. Such consensus cannot emerge on a new paradigm but must be built on existing common ground.¹⁵⁹ A properly construed consumer welfare standard – which includes all relevant parameters of competition, such as price, quality and choice – could provide the common ground on which to build international principles.

6. Digital literacy is essential for both consumers and business users of digital services for effective competition in digital markets. Empowered users – consumers and businesses – drive companies to compete, innovate and deliver better products and services. However, users need to understand what is involved when they “choose” to use a given product/service. Transparency is also necessary, but in the context of data-driven services, transparency without real choice or control is insufficient:¹⁶⁰ “The future of the digital economy relies on trust, by both consumers and business users”.¹⁶¹ Improved digital literacy coupled with competition policy to reduce entry/expansion barriers and encourage multihoming (including through data portability and data interoperability) can contribute to sustaining competition in the long run.

7. Competition enforcement and consumer enforcement tools are effective complements. In the digital context, consumer protection and competition concerns are often closely related. Where enforcement powers regarding these lie with separate authorities, concentrating them in the same authority, or at least ensuring cooperation between the authorities, should be considered.

8. Compliance by design can alleviate certain concerns before they arise. Regarding algorithms, artificial intelligence and privacy concerns, technological capabilities can be employed to develop products/services that are designed to include various legal considerations. Issues concerning algorithmic collusion with rivals and compliance with consumer rights, including those about privacy, may be largely resolved through product design innovation (e.g. through defaults and multilayered click-wrap agreements).¹⁶²

9. Effective long-term solutions may require continuous input from stakeholders. Governments and regulators are at an “enormous informational disadvantage” relative to technology companies.¹⁶³ This disadvantage can be somewhat alleviated through “participative antitrust”, where technology companies and other stakeholders and government agencies continuously work together to establish and fine-tune the rules of the game.¹⁶⁴ Such an approach could ensure that regulatory solutions or enforcement actions are not jeopardized by the speed of innovation and are targeted on issues in which market-driven solutions are unlikely.

10. Competition authorities should become more creative in their approach to enforcement tools and remedies. Competition authority intervention normally takes a long time – by technology standards – because of the necessarily detailed and complex assessments. By the time competition enforcement takes place, the market may no longer be “relevant” or the harm to competition may be irreparable due to the dynamic nature of competition. To combat some of these effects, the process for imposing interim measures can be improved where it is ineffective. Behavioural insights also require consideration by enforcers when designing remedies.¹⁶⁵ Finally, the “market investigation” tool that some enforcers (e.g. the UK’s Competition and Markets Authority) have at their disposal enables authorities to impose changes in the competitive conditions of a market without pursuing enforcement actions. This may be highly effective in dynamic and complex markets to restore competition, combat entry/expansion barriers and address consumers’ behavioural biases. Market investigations may prove invaluable when there are problems with how competition operates on a market as a whole and may be an essential tool in the arsenal.

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39. Including, notably, “market integration”. See e.g. Ezrachi, Ariel, “EU Competition Law Goals and the Digital Economy”, BEUC Discussion Paper, 2018, for a discussion of the various goals.
40. See e.g. European Commission, *Guidance on the Commission’s Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings*, OJ C 45/7, 2009, [5]; [11]. Arguably, this is not unique to the EU and the competition authorities frequently consider factors other than price and quantity, such as quality, range of products, service level, innovation; Furman et al. (n. 8), p. 87.
41. There appears to be no appetite at enforcer level for a change of paradigms; see e.g. G7 *Common Understanding* (n. 1); ACCC Final Report (n. 1); Wilson, Christine S., “Remembering Regulatory Misadventures: Taking a Page from Edward Burke to Inform Our Approach to Big Tech” address at the British Institute of International and Comparative Law, London, UK, 28 June 2019, <https://www.ftc.gov/public-statements/2019/06/remembering-regulatory-misadventures-taking-page-edmund-burke-inform-our> [Access date 20 November 2019]. See also an ICN survey that found the majority of competition authorities surveyed share a common desire to promote consumer welfare, despite the lack of agreement on a formal definition of the standard; ICN, “Competition Enforcement and Consumer Welfare Setting the Agenda”, 2011, p. 7, <https://eulawenforcement.com/wp-content/uploads/2019/01/Competition-Enforcement-and-Consumer-Welfare-Setting-the-Agenda.pdf?x81923> [Access date 20 November 2019].
42. In contrast, focusing on the process of competition and market structure can lead to worse outcomes for consumers, including higher prices due to a loss of efficiencies; see e.g. Khan (n. 3), pp. 1085–1086.
43. CMA Digital Markets Strategy (n. 1), [1.5].
44. See e.g. Akman, Pinar, “A Competition Law Assessment of Platform Most-Favoured-Customer Clauses”, *Journal of Competition Law and Economics*, vol. 12, no. 4, pp. 781–833, pp. 789–794 in the context of platform most-favoured-customer (parity) clauses and LEAR (n. 11), [I.137] regarding digital mergers.
45. See e.g. Akman, Pinar, “Online Platforms, Agency, and Competition Law: Mind the Gap”, *Fordham International Law Journal*, (forthcoming), vol. 43, 2019, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3419067 [Access date 20 November 2019] for the argument that transaction platforms are agents and the various implications of this. See e.g. *Apple Inc. v. Pepper*, No. 17–204, 587 U.S. ____ (2019) for a judgement of US Supreme Court suggesting that Apple’s App Store is a “retailer”.
46. In some jurisdictions (e.g. the EU and to an extent the US), restrictions of competition found in agreements between agents and principals fall outside the scope of the prohibition of anticompetitive agreements; for a discussion, see Akman (n. 45). Similarly, deciding in which capacity a platform provides a service to which users can be significant for establishing its liability in private actions pursued by users of the platform; see e.g. *Apple v Pepper* (n. 45).
47. Compare e.g. Case C-434/15, *Asociación Profesional Élite Taxi v Uber Systems Spain SL*, ECLI:EU:C:2017:981, [40] with Opinion of Advocate General Szpunar in Case C-390/18, *Criminal Proceedings Against YA and AIRBNB Ireland UC — Other Parties: Hotelière Turenne SAS, Pour un hébergement et tourisme professionnel (AHTOP), Valhotel*, ECLI:EU:C:2019:336.
48. Contrast e.g. ongoing employment proceedings against Uber in the UK (*Uber v Aslam and others* [2018] EWCA [Civ] 2748, currently at UK Supreme Court) and the Luxembourg Competition Authority, in a case concerning a competitor of Uber, finding there to be a horizontal cartel agreement between the drivers operating on the platform; *Webtaxi – Luxembourg Competition Council* (2018-FO-01) (June 8, 2018) <https://conurrence.public.lu/dam-assets/fr/decisions/ententes/2018/decision-n-2018-fo-01-du-7-juin-2018-version-non-confidentielle.pdf> [Access date 20 November 2019]. See also Bundeskartellamt’s finding that Amazon Marketplace is tantamount to an anticompetitive agreement between third-party sellers and Amazon Marketplace (Bundeskartellamt, *Case Report, Amazon Removes Price Parity Obligation for Retailers on Its Marketplace Platform*, 9 December 2013), <https://www.bundeskartellamt.de/SharedDocs/Entscheidungen/EN/Fallberichte/Kartellverbot/2013/B6-46-12.pdf?blob=publicationFile&v=2> [Access date 20 November 2019]. For a detailed discussion of the issues, see Akman (n. 45).

49. See e.g. Case T-41/96. *Bayer v Commission*, EU:T:2000:242.
50. Whish and Bailey (n. 27), p. 102.
51. CMA, *Pricing Algorithms: Economic Working Paper on the Use of Algorithms to Facilitate Collusion and Personalised Pricing*, 2018, [5].
52. See e.g. *Pricing Algorithms* (n. 51), [3.1] et seq. discussing different uses of pricing algorithms in practice.
53. See e.g. the decisions in Case 50223 – *Online Sales of Posters and Frames (CMA, 2016)* and *US v Aston and Trod* (DoJ, 2015) for a cartel case involving algorithms.
54. OECD (n. 17), p. 24. CMA Pricing Algorithms (n. 51), [12]. Algorithmic pricing can also lead to collusion if competitors use the same algorithm or data pool to determine prices, or where algorithms make the pricing behaviour of competitors predictable; see Ezrachi, Ariel and Maurice E. Stucke, *Virtual Competition*, Harvard University Press, 2016.
55. See CMA Pricing Algorithms (n. 51), [11]. Personalized pricing can raise other questions regarding, for example, “exploitative” abuse of a dominant position. On price discrimination between consumers as a potential abuse, see Akman, Pinar, “To Abuse, or Not to Abuse: Discrimination between Consumers”, *European Law Review*, vol. 32, no. 4, 2007, pp. 492–512.
56. See e.g. Gal, Michal S. and Niva Elkin-Koren, “Algorithmic Consumers”, *Harvard Journal of Law and Technology*, vol. 30, no. 2, 2017, pp. 309–353 for an extended discussion of the pros and cons of algorithmic consumers.
57. OECD (n. 17), p. 24; CMA Pricing Algorithms (n. 51), [6], [8].
58. OECD (n. 17), p. 24; Furman et al. (n. 8), p. 110. Where the algorithm acts as a “black box” even those who instruct the algorithm may not know which variables the algorithm took into account when setting the price; CMA Pricing Algorithms (n. 51), [2.10].
59. OECD (n. 17), p. 24. Platforms could be used as a hub for punishing deviation from a collusive agreement, too; *ibid.* For a definition and discussion of “hub-and-spoke collusion”, see Whelan, Peter, “Trading Negotiations between Retailers and Suppliers: A Fertile Ground for Anti-Competitive Horizontal Information Exchange?”, *European Competition Journal*, vol. 5, no. 3, 2009, pp. 823–845.
60. European Commission, *Guidelines on Vertical Restraints*, OJ C 130/1, 2010, [6].
61. *Guidelines* (n. 60), [6].
62. OECD, *Vertical Restraints for On-line Sales*, 2013, p. 40.
63. See e.g. CMA Decision, *Online Resale Price Maintenance in the Light Fittings Sector*, Case 50343, 2017; CMA, *Casio Electronics Co. Ltd*, not yet published, 2019.
64. See e.g. Bundeskartellamt, *HRS-Hotel Reservation Service*, 9th Decision Division, B 9 – 66/10, 20 December 2013; Swedish Competition Authority, *Decision Ref. No. 596/2013 Bookingdotcom Sverige AB*, 15 April 2015; see also more than a dozen investigations and litigation concerning Booking.com’s most-favoured-nation clauses in Europe, as discussed in Akman (n. 44).
65. See e.g. Case C-230/16, *Coty Germany GmbH v Parfümerie Akzente GmbH*, ECLI:EU:C:2017:941.
66. For a detailed discussion, see e.g. OECD (n. 62) and OECD, *Implications of E-commerce for Competition Policy – Background Note*, DAF/COMP(2018) 3, 2018.
67. Akman, Pinar and D. Daniel Sokol, “Online RPM and MFN Under Antitrust Law and Economics”, *Review of Industrial Organization*, vol. 50, 2017, pp. 133–151; Akman (n. 44).
68. OECD (n. 17), p. 17. See e.g. discussions in *Ohio v. American Express Co.*, 585 U.S. ____ (2018); Case C-67/13 P, *Groupement des cartes bancaires (CB) v European Commission*, ECLI:EU:C:2014:2204.
69. See e.g. *KinderStart.com, LLC v Google, Inc.*, 2007 WL 831806 (N.D.Cal.).
70. Amendments to German Competition Act s. 18(2a) in 2017 https://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0024 [Access date 20 November 2019].
71. OECD (n. 17), pp. 16, 17; Cremer et al. (n. 4), pp. 45, 46.
72. See e.g. Commission Guidance (n. 40), [11]. The competition law and economics concept of “market power” differs from “industry concentration”, which is normally calculated on a highly aggregated level; see e.g. BRICS Competition Law and Policy Centre (n. 8), pp. 101–102. For the importance of the distinction between industry-level concentration and market-level concentration, see discussions in Werden, Gregory J. and Luke M. Froeb, “Don’t Panic: A Guide to Claims of Increasing Concentration”, *Antitrust Magazine*, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3156912 [Access date 20 November 2019], and Shapiro, Carl, “Antitrust in a Time of Populism”, *International Journal of Industrial Organization*, vol. 61(C), 2018, pp. 714–748.
73. Guidance (n. 40), [11].
74. See e.g. Collyer, Kate, Hugh Mullan and Natalie Timan, “Measuring Market Power in Multi-Sided Markets”, *Antitrust Chronicle – Year in Review*, Competition Policy International, 2018.
75. Cremer et al. (n. 4), p. 48.
76. OECD (n. 17), p. 21.
77. Hovenkamp, Herbert, “Antitrust and Information Technologies”, *Florida Law Review*, vol. 68, no. 2, 2016, pp. 419–465.
78. OECD (n. 17), p. 23; Furman et al. (n. 8), p. 35; Stigler Report (n. 8), p. 20; Cremer et al. (n. 4), p. 49.
79. Cremer et al. (n. 4), p. 49; Furman et al. (n. 8), p. 33.
80. LEAR (n. 11), p. 139. The value of data is generally considered to have diminishing returns to scale (i.e. the number of observations); *ibid.* [l.147]. However, data may exhibit increasing returns to scale in relation to accuracy and utility; Stigler Report (n. 8), pp. 24–26. To date, there is reportedly no research explicitly tackling the issue of data complementarities, and claims that data diversity enhances accuracy are arguably not based on rigorous systematic evidence; LEAR, *ibid.* [l.43]. Clearly, this is an area in which more empirical research is needed.
81. OECD, *Big Data: Bringing Competition Policy to the Digital Era, Executive Summary*, 2016, p. 3. For the argument that any data advantage needs to be also distinguished from learning-by-doing, which is arguably the main source of competitive advantage in online industries, see Varian (n. 6), p. 14.

82. See e.g. the discussion in Furman et al. (n. 8), p. 34.
83. See Akman, Pinar, *The Concept of Abuse in EU Competition Law: Law and Economics Approaches*, Hart Publishing, 2012, pp. 6, 94 for the definitions.
84. *Competition* (n. 30), p. 5.
85. Compare, for example, proceedings concerning Google's search engine practices, in which similar practices were found to be an infringement under Article 102 Treaty on the Functioning of the European Union prohibiting the abuse of a dominant position by the European Commission, but not under the Federal Trade Commission (FTC) Act by the FTC; Case AT.39740 *Google Search (Shopping)* (27 June 2017) http://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf [Access date 20 November 2019] and *In the Matter of Google Inc.* FTC File Number 111-0163 (3 January 2013) https://www.ftc.gov/sites/default/files/documents/public_statements/statement-commission-regarding-google-search-practices/130103brillgooglesearchstmt.pdf [Access date 20 November 2019].
86. Amazon, Apple, Google, Intel, etc. to name a few. See e.g. Dominic Rushe, "Donald Trump Lambasts EU over \$5.1bn Fine for Google", *The Guardian*, 19 July 2018.
87. Katz, Michael L., "Exclusionary Conduct in Multi-Sided Markets" in OECD, *Rethinking Antitrust Tools for Multi-Sided Platforms*, 2018, p. 103.
88. OECD (n. 66), p. 27. Compare e.g. *Google Shopping* (n. 85) and *Streetmap.EU Ltd v Google Inc* [2016] EWHC 253 (Ch) (UK).
89. *Google Shopping* (n. 85); CASE AT.40099, *Google Android* (18 July 2018) https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf [Access date 20 November 2019]; Case AT. 40411, *Google Search (AdSense)* (20 March 2019), not yet published; Bundeskartellamt, Facebook, 6th Decision Division, B6-22/16, 6 February 2019, https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=5 [Access date 20 November 2019]. All decisions concerning Google are currently under appeal. At the time of writing, the Bundeskartellamt decision has been suspended by the Düsseldorf Higher Regional Court; see Oberlandesgericht Düsseldorf, Decision VI-Kart 1/19 (V), *Facebook Inc. gegen Bundeskartellamt*, 26 August 2019, http://www.olg-duesseldorf.nrw.de/behoerde/presse/Presse_aktuell/20190826_PM_Facebook/20190826-Beschluss-VI-Kart-1-19-_V_.pdf [Access date 20 November 2019].
90. See e.g. Newton, Casey and Zoe Schiffer, "Google and Facebook's Antitrust Problem Is Getting Much More Serious", *The Verge*, 10 September 2019, reporting numerous state attorneys general investigating Google and Facebook. See also Nicas, Jack, Karen Weise and Mike Isaac, "How Each Big Tech Company May Be Targeted by Regulators", *The New York Times*, 8 September 2019; Paul, Kari, and agencies, "US Justice Department Targets Big Tech Firms in Antitrust Review", *The Guardian*, 24 July 2019.
91. See e.g. the different outcomes in *Google Shopping* (n. 85); FTC (n. 85); *Streetmap* (n. 88); CADE, *Google and Buscapé* (08012.010483/2011-94) (Brazil).
92. See Cremer et al. (n. 4), p. 66 for the definition.
93. For a discussion of different abuses in the context of "self-preferencing", see Petit, Nicolas, "Theories of Self-Preferencing under Article 102 TFEU: A Reply to Bo Vesterdorp", 2015, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2592253 [Access date 20 November 2019]; Akman, Pinar, "The Theory of Abuse in Google Search: A Positive and Normative Assessment under EU Competition Law", *University of Illinois Journal of Law, Technology and Policy*, no. 2, 2017, pp. 301–374.
94. See e.g. Petit, Nicolas, "Competition Cases Involving Platforms: Lessons from Europe", Comment on Federal Trade Commission (FTC) Hearing #3 on Competition and Consumer Protection in the 21st Century, 2018, <https://ssrn.com/abstract=3285277> [Access date 20 November 2019].
95. See e.g. European Commission, *Commission Opens Investigation into Possible Anti-Competitive Conduct of Amazon* [Press Release], 17 July 2019, https://europa.eu/rapid/press-release_IP-19-4291_en.htm [Access date 20 November 2019]; Boffey, Daniel, "Apple Braces for EU Investigation After Spotify Complaint", *The Guardian*, 6 May 2019. In many cases, profit-maximizing platforms have incentives to "write good rules to make the platform more valuable to their users"; Cremer et al. (n. 4), pp. 61–62.
96. See e.g. Khan (n. 38); Mandrescu, Daniel, "Applying EU Competition Law to Online Platforms: The Road Ahead – Part 2", *European Competition Law Review*, vol. 38, no. 9, 2017, pp. 410–422.
97. OECD, *Refusals to Deal*, DAF/COMP(2007) 46 (2009), 2009, pp. 10, 22; Cremer et al. (n. 4), p. 105. Cf. Cremer et al. (n. 4), p. 66, who propose that self-preferencing can be an abuse of a dominant position even below the threshold of essential facilities where it is not justified by a pro-competitive rationale and is likely to result in leveraging of market power. No legal authority is provided to support this proposition.
98. OECD (n. 66), p. 33.
99. OECD (n. 17), p. 30; OECD (n. 66), pp. 33–34. See also Case C-7/97, *Oscar Bronner GmbH & Co. KG v Mediaprint*, ECLI:EU:C:1998:569, [43]–[47]. For an extensive discussion, see Graef, Inge, *EU Competition Law, Data Protection and Online Platforms: Data as Essential Facility*, Wolters Kluwer, 2016.
100. *Facebook* (n. 89). A similar approach was adopted by the Italian Competition Authority, which applied consumer protection rules in a case concerning Facebook's data practices; see Italian Competition Authority, *Facebook Fined 10 million Euros by the ICA for Unfair Commercial Practices for Using its Subscribers' Data for Commercial Purposes* [Press Release], 7 December 2018, <https://en.agcm.it/en/media/press-releases/2018/12/Facebook-fined-10-million-Euros-by-the-ICA-for-unfair-commercial-practices-for-using-its-subscribers%E2%80%99-data-for-commercial-purposes> [Access date 20 November 2019].
101. See Oberlandesgericht Düsseldorf (n. 89).
102. See e.g. the Japan Fair Trade Commission's investigation into Amazon's requirement of suppliers to cover the cost of discounts for products sold directly by Amazon, which was terminated following Amazon's action to change its policy; McConnell, Charles, "Amazon Changes Rewards in Response to JFTC Probe", *Global Competition Review*, 12 April 2019; the Bundeskartellamt investigation into Amazon's terms and conditions for third-party sellers, which was terminated following Amazon's action to change its terms of business; see Bundeskartellamt, *Bundeskartellamt Obtains Far-Reaching Improvements in the Terms of Business for Sellers on Amazon's Online Marketplaces* [Press Release], 17 July 2019. For similar proceedings in Austria, also terminated, see Austrian Federal Competition Authority, *BWB Informs: Amazon Modifies its Terms and Conditions* [Press Release], 17 July 2019, https://www.bwb.gv.at/en/news/detail/news/bwb_informs_amazon_modifies_its_terms_and_conditions-1/ [Access date 20 November 2019]. See also European Union, *Regulation on Promoting Fairness and Transparency for Business Users of Online Intermediation Services*, OJ L 186/57, 2019 on platform-to-business relations. See Akman (n. 83), pp. 8, 48, 300 et seq. on the position that exploitative abuse should be coupled with exclusion for it to be a competition problem.
103. OECD (n. 17), p. 29.
104. OECD (n. 66), p. 31.

105. Katz (n. 87), p. 112.
106. In *Bottin Cartographes*, the French court at first instance found Google Maps provision at zero-prices to users an act of predatory pricing. This was overturned on appeal on the advice of the French Competition Authority; see OECD (n. 66), p. 32 for a discussion.
107. Katz (n. 87), p. 114.
108. Furman et al. (n. 8), p. 91; LEAR (n. 11), p. ii. Between 2008 and 2018, Google has reportedly acquired 168 companies, Facebook 71 companies and Amazon 60 companies; LEAR, *ibid.* [l.48].
109. Cremer et al. (n. 4), p. 110; Furman et al. (n. 8), p. 92.
110. Furman (n. 8), p. 91.
111. Cremer et al. (n. 4), p. 111; Furman et al. (n. 8), p. 94.
112. Cremer et al. (n. 4), p. 115. See Bundeskartellamt and Bundeswettbewerbsbehörde, *Guidance on Transaction Value Thresholds for Mandatory Pre-merger Notification (Section 35 (1a) GWB and Section 9 (4) KartG)*, 2018, https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Leitfaden/Leitfaden_Transaktionsschwelle.pdf?__blob=publicationFile&v=2 [Access date 20 November 2019]. The EU also considered this issue during a merger control consultation in 2016–2017. The majority of respondents to the consultation advised against changing the rules to include transaction value-based thresholds; see https://ec.europa.eu/competition/consultations/2016_merger_control/summary_of_replies_en.pdf [Access date 20 November 2019], p.5.
113. Cremer et al. (n. 4), p. 111; LEAR (n. 11), [l.69].
114. Cremer et al. (n. 4), p. 117. A separate concern in relation to the “kill zone” refers to innovative firms’ hesitation to invest due to anxiety that, if successful, their innovation might be copied by the big tech company or bought up easily; *ibid.*
115. Cremer et al. (n. 4), p. 111. See also Furman et al. (n. 8), p. 91.
116. Furman et al. (n. 8), pp. 92–93; Cremer et al. (n. 4), p. 111.
117. LEAR (n. 11), [l.69]; [l.152]. A study of the acquisitions of Google, Facebook and Amazon finds that 60% of the targets are four years old or younger; *ibid.*, p. ii.
118. LEAR (n. 11), pp. xii–xiv.
119. Cremer et al. (n. 4), p. 110; LEAR (n. 11), [l.137]. Foreclosure of competition can also result from the efficiencies realized by the merging parties that place them ahead of their competitors and not from the mere exercise of market power; LEAR, *ibid.* [l.137]. Thus, the restriction of competition comes from the merged entity becoming better at what it does and providing more value to consumers; *ibid.*
120. See e.g. European Commission, Case M.8124 – *Microsoft/LinkedIn*, 2016, fn 330; European Commission, Case M.7217, *Facebook/WhatsApp*, 2014, [87], [102], fn 79.
121. Furman et al. (n. 8), p. 12.
122. Cremer et al. (n. 4), p. 120.
123. Mann, Catherine L., *For Better or Worse, Has Globalization Peaked? Understanding Global Integration*, Citi GPS: Global Perspectives & Solutions, 2019, <https://www.citivelocity.com/citigps/catherine-mann-globalization-peak/> [Access date 20 November 2019], p. 18. See also Helpman, Elhanan, *Globalization and Inequality*, Harvard University Press, 2018, finding that globalization is not the primary cause of rising inequality.
124. OECD (n. 2), p. 29.
125. UNCTAD, *Trade and Development Report 2018: Power, Platforms and the Free Trade Delusion*, 2018, https://unctad.org/en/PublicationsLibrary/tdr2018_en.pdf [Access date 20 November 2019], p. 92. Developing countries can also join together at regional level to support local start-ups and facilitate intraregional trade; Note by the UNCTAD Secretariat, 2019, p. 13, https://unctad.org/meetings/en/SessionalDocuments/ciclpd54_en.pdf [Access date 20 November 2019].
126. See the discussion in UNCTAD (n. 125), pp. 90–92 regarding rules in trade and investment agreements that prohibit source-code sharing; localization rules that restrict use or location of computing facilities within national boundaries; etc.
127. See OECD, *Policy Roundtables: Competition Policy, Industrial Policy and National Champions, Executive Summary*, 2009, pp. 14, 16.
128. Mann (n. 123), pp. 20, 31. This is because “balkanizing data flows” creates arbitrage opportunities to get around the regulations, which simultaneously enhance risks and forego benefits; *ibid.*, 31.
129. These include European Union, *General Data Protection Regulation*, OJ L 119/1, 2016; California Consumer Privacy Act (CCPA), 2018, https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB375 [Access date 20 November 2019]; Brazilian General Data Protection Law (LGPD), Federal Law no. 13,709/2018; Privacy Shield Framework, <https://www.privacyshield.gov/welcome> [Access date 20 November 2019]. See also European Commission, *Proposal for a Regulation on Privacy and Electronic Communications*, 2017, <https://ec.europa.eu/digital-single-market/en/news/proposal-regulation-privacy-and-electronic-communications> [Access date 20 November 2019].
130. Federal Trade Commission, “FTC Imposes \$5 Billion Penalty and Sweeping New Privacy Restrictions on Facebook”, 24 July 2019, <https://www.ftc.gov/news-events/press-releases/2019/07/ftc-imposes-5-billion-penalty-sweeping-new-privacy-restrictions> [Access date 20 November 2019].
131. OECD (n. 2), p. 34. This includes the government’s development of a system for citizens to have a “social credit score” based on their routine behaviours including online habits; *ibid.* China has an emerging, similar scoring system for businesses – see Hancock, Tom, “China to Impose ‘Social Credit’ System on Foreign Companies”, *The Financial Times*, 28 August 2019.
132. UNCTAD (n. 125), p. 95.
133. For a discussion of the different views and the vast literature on the topic, see Kemp, Katharine, “Concealed Data Practices and Competition Law: Why Privacy Matters”, [2019] UNSWLRS 53, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3432769 [Access date 20 November 2019].
134. BEUC, *Shaping Competition Policy in the Era of Digitalisation: Response to Public Consultation*, 2018, p. 9, https://www.beuc.eu/publications/beuc-x-2018-084_beuc_response_shaping_of_competition_policy.pdf [Access date 20 November 2019]; ACCC Final Report (n. 1), p. 435. Similarly, consumer mistrust and concerns resulting from the data policies of digital businesses can lead to foregone benefits due to lower uptake of digital services; Which?, *Policy Report: Control, Alt or Delete? The Future of Consumer Data*, 2018, p. 6, <https://www.which.co.uk/policy/digitisation/2659/control-alt-or-delete-the-future-of-consumer-data-main-report> [Access date 20 November 2019]. See also ACCC Final Report (n. 1), pp. 22, 435.

135. OECD (n. 2), p. 35.
136. See n. 90. The FTC also launched a technology task force to monitor competition in US technology markets; see FTC, *FTC's Bureau of Competition Launches Task Force to Monitor Technology Markets* [Press release], 29 February 2019.
137. See e.g. Cremer et al. (n. 4), p. 3; Furman et al. (n. 8), p. 84; ACCC Final Report (n. 1), p. 13. Cf BRICS Competition Law and Policy Centre (n. 8), pp. 31, 36.
138. Furman et al. (n. 8), p. 91 in relation to mergers; Cremer et al. (n. 4), pp. 3, 4 in relation to dominance; Stigler Report (n. 8), pp. 63–64, 74 in relation to mergers and monopolization. See also LEAR (n. 11), [I.149] noting that under-enforcement, particularly in merger control, may be more costly than over-enforcement in digital markets as the potential for actual entry is usually the main mechanism left for disciplining incumbents.
139. See e.g. ACCC Final Report (n. 1), pp. 1–2, 12; Stigler Report (n. 8), p. 38; Furman et al. (n. 8), p. 46.
140. Furman et al. (n. 8), pp. 5–6; Stigler Report (n. 8), p. 9; House of Lords (n. 5), [238]; ACCC Final Report (n. 1), pp. 13–14.
141. See Platform-to-Business Regulation (n. 102); Japanese Ministry of Economy, Trade and Industry (n. 8).
142. See e.g. ACCC Final Report (n. 1), p. 27. See also Platform-to-Business Regulation (n. 102).
143. See e.g. Cremer et al. (n. 4), pp. 8–9; Furman et al. (n. 8), pp. 9–10; Stigler Report (n. 8), pp. 85, 88–89; ACCC Final Report (n. 1), p. 11.
144. Cremer et al. (n. 4), pp. 15, 19; Furman et al. (n. 8), pp. 54, 56; ACCC Final Report (n. 1), p. 117 in relation to break-up as a remedy.
145. Two exceptions to this are the UK House of Lords recommendation to introduce a “public interest” test for data-driven mergers and acquisitions to prevent “data monopolies” and the Stigler Report’s suggestion to adopt a presumption of unlawfulness regarding mergers between dominant firms and potential competitors; House of Lords (n. 5), [149] and Stigler Report (n. 8), p. 78.
146. Furman et al. (n. 8), p. 12; Cremer et al. (n. 4), pp. 11, 112–113, 117; Stigler Report (n. 8), p. 67; ACCC Final Report (n. 1), pp. 10, 30. Furman et al. also propose a change to include within merger control not only the likelihood of harm (or benefits) but also the scale of any harm (of benefits) that are expected to result from the merger; *ibid.*, p. 13.
147. Furman et al. (n. 8), pp. 6, 14;
148. See e.g. Cremer et al. (n. 4), pp. 3, 51, 66–67; Furman et al. (n. 8), pp. 6, 14, 105–106; Stigler Report (n. 8), pp. 72, 77–78.
149. See e.g. Cremer et al. (n. 4), pp. 51, 66.
150. See e.g. Stigler Report (n. 8), p. 50 calling for “formal research” on the topic in noting the “anecdotal” nature of the evidence on the suggestion that platforms have bought potential competitors through merger activities (finding the anecdotal evidence “fairly robust”) and also the evidence regarding platforms having blocked potential entrants. The Stigler Report notes the same regarding the existence and extent of “kill zones” for market entry and innovation; *ibid.*, p. 56.
151. See e.g. the change in the approach of the ACCC, whose findings during its inquiry led it to abandon its initial recommendation for the provision of options for internet browsers or search engines; ACCC Final Report (n. 1), pp. 110–111.
152. See e.g. UNCTAD (n. 125), p. 14.
153. For the different evidence on the advertising market, see e.g. Furman et al. (n. 8), p. 46; Mandel, Michael, *The Declining Cost of Advertising: Policy Implications*, Progressive Policy Institute, 2019; International Data Corporation, *Worldwide Ad Tech Market Still Highly Fragmented Despite Intense M&A Activity, Continuing Strong Growth Spells Opportunity, According to IDC* [Press Release], 18 September 2018. See also ACCC Final Report (n. 1), p. 148, noting that “[w]hile a number of media businesses raised issues, ... advertisers raised little concern about the effectiveness of third-party verification”. Regarding concentration, see e.g. BRICS Competition Law and Policy Centre (n. 8), p. 101, finding that the evidence on the role of the digital sector in concentration levels is “inconclusive”. See also e.g. Werden and Froeb (n. 72); Shapiro (n. 72); International Monetary Fund (IMF), *World Economic Outlook: Growth Slowdown, Precarious Recovery*, 2019, pp. xiv, 68. Cf. Furman, Jason and Peter Orszag, “Slower Productivity and Higher Inequality: Are They Related?”, Peterson Institute for International Economics Working Paper 18–04, 2018.
154. UNCTAD (n. 125), p. 14.
155. See e.g. in the context of merger control (n. 113) and regarding vertical restraints (n. 66). For the argument that this factor makes it imperative to assess the *effects* rather than form of conduct, see e.g. Akman, Pinar, “An Agenda for Competition Law and Policy in the Digital Economy”, Editorial, *Journal of European Competition Law & Practice* (forthcoming).
156. See e.g. IMF (n. 153), p. 68, finding that “there is little direct evidence that pro-competition policies have weakened across advanced economies so far”.
157. ACCC Final Report (n. 1), p. 29. See also e.g. CMA Digital Markets Strategy (n. 1), [3.19]; G7 *Common Understanding* (n. 1); UNCTAD (n. 125), p. 15.
158. See e.g. UNCTAD, “Guiding Policies and Procedures under Section F of the UN Set on Competition” regarding procedures in International Cooperation in Competition Law Enforcement adopted by UNCTAD Intergovernmental Group of Experts on Competition Law and Policy in 2019, https://unctad.org/meetings/en/SessionalDocuments/ccpb_comp1_%20Guiding_Policies_Procedures.pdf [Access date 20 November 2019], and ICN, “Framework on Competition Agency Procedures” adopted in 2019, https://www.internationalcompetitionnetwork.org/wp-content/uploads/2019/04/ICN_CAP.pdf [Access date 20 November 2019].
159. See e.g. Competition (n. 30), p. 8.
160. BEUC, *Quality Considerations in the Zero-Price Economy – Note by BEUC, Written Contribution by BEUC Submitted to the OECD*, 2018, p. 4; ACCC Final Report (n. 1), p. 22.
161. ACCC Final Report (n. 1), p. 22.
162. See e.g. ACCC’s recommendations regarding pro-consumer defaults and multilayered notices regarding data practices; ACCC Final Report (n. 1), pp. 25, 464.
163. Furman et al. (n. 8), pp. 4–5.
164. See e.g. Schrager, Allison, “A Nobel-Winning Economist’s Guide to Taming Tech Monopolies” (Interview with Jean Tirole), *Quartz*, 27 June 2018; Bethell, Oliver J., Gavin N. Baird and Alexander M. Waksman, “Ensuring Innovation through Participative Antitrust”, *Journal of Antitrust Enforcement*, 2019 (forthcoming); Furman et al. (n. 8), pp. 5, 9, 54–55, 58–59, 61 in the context of involving the stakeholders to develop a “code of competitive conduct” under the auspices of a digital unit.
165. See e.g. BEUC (n. 134), p. 9; Stigler Report (n. 8), pp. 9, 20, 87.



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