Digital platforms and competition policy: a literature review

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Introduction

This literature review – commissioned by the IPPR Commission on Economic Justice – considers the economic impact of digital platforms and Big Data from the perspective of competition policy. It first outlines the key tenets of, and developments in, UK competition policy, before considering the challenges that the digital economy – and its powerful incumbent – for protecting and enhancing competition. A final section briefly outlines a progressive policy agenda in response to these developments. The authors are grateful to Michael Jacobs, Mat Lawrence and Tom Hunt for their support in the production of this review.

The UK competition regime

Competition policy, Kovavic and Lopez-Galdos (2016) note, was 'largely an American idiosyncrasy' for nearly a century after the adoption of the first anti-trust statutes in the USA in the late nineteenth century. Since the 1980s, however, the number of competition regimes has expanded from around 30 to more than 130 globally, with the US and the EU jurisdictions functioning as a 'a form of regulatory duopoly in international competition law since the early 1990s'. The rise of competition policy has been inextricably linked with the growing concern to ensure the effective operation of 'free market' activity and the need to balance public and private power, which can be seen as part of the rise of the neoliberal paradigm (Wilks 2010). Within this paradigm, we have seen competition policy evolve from issues around industrial organisation 'to a more applied concern with economic efficiency', so that now competition policy is seen as 'a key supply side policy' which has to some extent taken over the mantle of 1970s-style industrial policy (Wilks 2010). We have to recognise of course that competition policy is generally focused on preventing a concentration on private power – although its success in doing so is arguable – and as such can be said to have a progressive intent. Yet the motive behind this rationale is intimately related to a veneration of markets, and demonization of state intervention; we can speculate that the embedding of this worldview within competition regimes, such as that in the UK, may have acted to constrain the regime's leverage in relation to market concentration.

The legislative framework for the UK competition regime is established by the Competition Act 1998 and the Enterprise Act 2002, supplemented by the Enterprise and Regulatory Reform Act 2013 which created the Competition and Markets Authority (Seeley 2016; see also Vickers 2017). The Competition Act 1998 brought UK law on antitrust into line with EU law, with its prohibitions of anti-competitive agreements (Chapter I of the Act) and of abuse of dominance (Chapter II) precisely mirroring the prohibitions in Articles 101 and 102, respectively, of the Treaty on the Functioning of the European Union (Vickers 2017). Under Section 60 of the Competition Act, UK courts must act consistently with 'the principles laid down by the Treaty and the European Court, and any relevant decision of that Court', and must also 'have regard to any relevant decision or statement of the Commission' (Vickers 2017). The Enterprise Act 2002 further emboldened the UK competition regime by

transferring ‘decision-making power on mergers and market investigations from government ministers to the independent competition authorities’ and clarified that ‘such decisions are, with narrow exceptions, to be taken on competition grounds’. This marked a shift away from decisions being taken in terms of the notion of ‘public interest’, except in the cases of national security, media plurality, and financial stability (Vickers 2017). The removal of ‘public interest’ tests reflects a wider shift in conceptions around the suitability of non-economic tests for competition-related concerns from the 1990s, as economic tests became more sophisticated and the ‘post-Chicago synthesis’ theory, which ‘predominantly sticks with the single goal of (allocative) efficiency and reinforces the focus on quantifiable, short term welfare effects’, became dominant (Wilks 2010; see also Hyman and Kovavic 2013).

Inquiries made into markets and mergers have historically been conducted through a ‘two stage approach’ (Seeley 2016), wherein an initial inquiry is assessed before being passed on for further in-depth investigation if necessary. Until 2014, the Competition Commission (CC) conducted the second-stage in-depth inquiries into mergers, markets and the regulation of the major regulated industries, following a reference made by the Office of Fair Trading (OFT) (in the case of merger and market inquiries), or by a sector-specific regulator (Ofgem, in the case of gas and electricity markets, for example). Following consultation in 2011-12, however, the Coalition government took the decision to replace the CC and OFT with a unitary body, the CMA. The act of creating the CMA through the merger of the CC and OFT was achieved through the Enterprise and Regulatory Reform Act 2013 (ERRA), which also introduced a number of changes to the legislation governing the review of mergers, market studies and investigations, the investigation of civil antitrust breaches and the prosecution of the criminal cartel offence (Nikpay and Taylor 2014).

The EERA, Nikpay and Taylor (2014) argue, ‘does not fundamentally alter the basic pillars of the UK competition regime’ and can be considered the least significant of the three major reforms to the competition regime since 1982. Fundamentally, they note, the core elements of the previous regime remain in place, including: ‘administrative decision making in antitrust cases with a full merits review by the specialist Competition Appeal Tribunal (CAT); two phase mergers and market reviews with significant independence between both phases; and a cartel offence that allows for the prosecution of individuals in certain circumstances.’ On the other hand, they note that the 2014 reforms were designed to ‘bring faster and more transparent enforcement of the competition rules’ and create ‘stronger and more intrusive investigatory powers across mergers, markets and civil investigations’.

The main elements of the UK competition regime today under the CMA, according to Seeley (2016), are:

- Market studies and market investigations: examining markets which may not be working well for consumers;
- Merger control: prohibiting anti-competitive mergers between businesses or otherwise remedying their potential adverse effects on competition;

- Anti-trust: enforcing legal prohibitions against anti-competitive business agreements (including cartels) and the abuse of a dominant market position.
- Competition advocacy: promoting the benefits of competition and challenging barriers to competition.

Most recently, in the Queen's Speech on 18 May 2016, the government announced a 'Better Markets Bill', designed to further "open up markets, boost competition, give consumers more power and choice and make economic regulators work better." As Seeley (2016) notes, 'one element of the Bill covers the environment for competition', specifically:

- to speed up the decision-making process for competition investigations and make the whole process easier for businesses and better for consumers.
- to give the competition authorities more powers to take on anti-competitive behaviour.
- to improve the landscape for economic regulation.

Following this, the government opened a consultation on 'option for further reform' to the UK competition regime, which from May to June 2016 and which is still in the process of analysing feedback.[1]

Rationale for the CMA

Prior to the 2014 reform and the establishment of the CMA, the UK's competition regime, characterised by the joint operation of the CC and OFT, was highly regarded. In a comparison of merger control enforcement across a number of major global competition regimes, Robert (2014) finds the UK regime to be largely effective and even 'interventionist' in nature, in contrast to expectations. Utilising statistical evidence on the number of notifications, investigations and enforcements conducted by the different regimes, Robert (2014) is able to move analysis beyond the headline figures. For instance, whilst the UK only handled 85 notifications per year on average in Robert's (2014) data, compared with Germany's 1,500, this was shown to be driven by a range of different factors, including: 'whether the system is mandatory or voluntary, the level of the thresholds, the size of the relevant economy and the extent of merger and acquisition (M&A) activity, and the culture of compliance.' Despite its low number of notifications, the UK had a high rate of referral to phase two, indicating a more interventionist regime, despite its focus on a narrower set of activities. In its 2014 report entitled, 'Rating Enforcement – The Annual Ranking of the World's Leading Competition Authorities', the Global Competition Review suggested that the UK regime was amongst the world's best. It gave the CC an 'elite' rating and rated the OFT as 'very good', stating that 'the UK's Competition Commission, proved once again that they are leading the rest of Europe's national competition authorities' (GCR 2014). Kovavic and Hyman (2012), two leading scholars in the field of competition law, describe the old regime as 'a system widely regarded to be one of the world's best', led by 'legislative

[1] https://www.gov.uk/government/consultations/uk-competition-regime-options-for-further-reform

reforms, inspired leadership, and excellent staffing'. Clearly, the UK regime prior to 2014 worked well. So, why then, did the Coalition government pursue reform?

In an early article looking to understand the UK's transition towards a unitary competition body, Nikpay and Taylor (2014) note that critics claimed the OFT had 'delivered too few prohibition decisions (in particular abuse of dominance cases), taken too long to deliver them and, in certain circumstances, had undertaken work to an insufficiently high standard'. This, in turn, led to the government consultation on how to reform the UK's competition regime in 2011. Indeed, when analysing the Government's response to the consultation on creating the CMA, published in March 2012, the criticisms of the old regime highlighted by Nikpay and Taylor (2014) are evident (BIS 2012). The 2012 BIS document suggests that, 'that there is scope to improve the effectiveness of competition enforcement and streamline processes'. Its policy objectives for reform were stated as to:

- Improve the quality of decisions and strengthen the regime
- Support the competition authorities in taking forward the right cases
- Improve speed and predictability for business.

In creating a unitary body from the two preceding institutions, the government (BIS 2012) suggested that the benefits would include:

- Greater coherence in competition practice and a more streamlined approach in decision making
- More flexibility in resource utilisation
- Faster, less burdensome processes for business
- A single strong centre of competition expertise
- Increased accountability and transparency in public bodies and lead to savings in corporate governance and back office costs

Robert (2014) makes reference to the fact that a single body should save the government money in the long-run. This suggests that the reform of the UK competition regime must be understood in the context of the Coalition government's wider targets around deficit reduction.

In a recent House of Commons Briefing Paper, Seeley (2016) explains the coalition government's approach to competition policy. Seeley notes that the government understood competition as 'the lifeblood of a vibrant economy and fundamental to growth', with competition policy helping to ensure open and competitive markets which 'make businesses more efficient and innovative', 'help small businesses to grow and enter new markets', 'drive lower prices and better products, services and choice for consumers' and 'enhance productivity and economic resilience'. Although evidence on the link between competition policy and productivity is limited, the government has drawn on some academic work to suggest that good competition does have a strong impact on productivity (Seeley 2016; see also Ahn 2002; Council of Economic Advisers 2016).

In an account of the institutional design and decision-making processes within the CMA, three top-level CMA staff suggest that the purpose of the design of the new organisation is to, 'enable us to deliver "marked improvements" and meet the expectations on us to enhance the rigor of decision-making and to make more decisions, more quickly, with no attendant drop in quality' (Currie et al. 2014). For example, as Currie et al. note, the Enterprise and Regulatory Reform Act 2013 introduced shorter statutory timescales for phase 2 decisions, thus setting the challenge 'of taking advantage of the synergies offered by a unitary authority to facilitate faster decision-making while retaining the independence of decisions between the two phases'. The reforms were not motivated to address significant failings as such, 'but instead to build on a system widely considered to be one of the world's best'. Part of this has been an attempt to streamline activity.

The UK's competition regime's performance

When looking through the literature on the institutional design of competition policies, it is clear that regime design is complex and case-specific. As Jenny (2016) argues in an analysis of the debates and trends in the institutional design of competition regimes, 'there is no unique institutional design which would fit all countries'. Competition regime design is, he suggests, 'an art rather than a science'. Indeed, there is a quite significant literature which attempts to trace through a range of effective institutional designs and policy choices, yet does not attempt to suggest nor promote any one course of action as preferable (see Jenny 2016; International Competition Network 2014; Kovavic and Hyman 2012; Kovavic and Hyman 2013). Given this complexity, there were naturally concerns attached to the government's decision to shake up the UK's well-established and highly regarded competition regime. As Chisholm (2015) notes, some expressed concern as to whether the two-phase approach to scrutiny and decision making could properly be preserved within a unitary authority – the fear being that this would lead to 'confirmation bias' between the two stages, as the same people were making decision as both stages. Moreover, some worried that an institutional merger would 'be highly disruptive and we would take our eye off our core mission of conducting inquiries and enforcing the law' (Chisholm 2015).

The modified competition regime in the UK appears to have been well-received. For instance, the GCR (2015) 'Rating Enforcement' review's first look at the CMA, contained within its 2015 report, is complimentary and optimistic about the new UK regime. The GCR gives the new regime four stars, putting it within the second rank of competition regimes, with only four regimes above it – those of France, Germany and the US Department of Justice's antitrust division, US Federal Trade Commission (GCR 2015).

In 2016, the National Audit Office (NAO 2016) reviewed the effectiveness of the CMA's performance. The NAO found that the establishment of the CMA 'did not significantly disrupt competition work', but it did require additional funding to recruit and retain staff for its staffing model. It found that the 'coordination of the regime has improved', with the CMA giving more support to smaller regulators than did its predecessor bodies and reporting annually to Parliament. The CMA has, the report argues, 'strengthened processes with the aim of increasing the robustness of its work to legal challenge' and set up independent

decision-making panels and enhanced internal oversight. Nevertheless, the NAO report highlights some key issues facing the UK competition regime. Firstly, it notes that business awareness of competition law is low, with only 23% of businesses suggesting that they knew competition law well, 'compared to 45% who had never heard of competition law or did not know it at all well'. Moreover, the NAO suggest that there is a 'low caseflow' problem and that the regime must increase its number of enforcement decisions. Overall, however, the NAO report concludes positively that the 'CMA has taken significant steps to tackle the failings identified in our previous reports' and 'has strengthened processes to improve the robustness of its work, and has encouraged greater coordination across regulators'.

Brexit: what impact?

Brexit, of course, threatens to disrupt this regulatory framework somewhat. Of course, in the unlikely event that the UK remains within the EEA, there would likely be little change. In the more likely scenario that the UK does not remain within the EEA, however, Dunne (2017) suggests that the likely effects would have two principle dimensions: the non-applicability of the EU competition rules within the UK jurisdiction and potential knock-on effects for existing domestic law. Articles 101 and 102 'would cease to have application in respect of anticompetitive behaviour taking place in the UK', whilst the Commission would similarly lose its enforcement jurisdiction over the CMA. Vickers (2017), however, notes that 'because the main pillars of UK competition law—the Competition Act and Enterprise Act—are independent UK statutes, not dependent on EU regulation, they will not fall over when Brexit happens'. At the same time, however, UK companies 'will remain within the jurisdiction of EU competition law to the extent that anticompetitive behaviour is implemented or (more controversially) takes effect within the EU' (Dunne 2017).

Whilst the CMA would be released from its obligation to apply the EU articles, it would also lose its membership of the European Competition Network, a largely successful 'coordination mechanism to facilitate more effective enforcement amongst the 28 national competition authorities and the Commission' (Dunne 2017). Indeed, as Vickers (2017) argues, there will be a duplication of merger controls which 'will have substantial costs both for businesses and the authorities'. On the issue of regulatory divergence, Dunne (2017) suggests that this might be limited. She notes that UK law 'may develop in a manner either more or less expansive than EU law', yet EU competition law has emerged as an example of international 'best practice' and thus, 'it is unlikely that UK competition law will depart radically from its path over the past decade or so, or from the general tenor of the equivalent EU rules'. Vickers (2017) also argues that it is extremely unlikely that the UK will repeal the Chapters I and II prohibitions of the Competition Act 1998, which mirror EU regulation. The more likely option, he suggests, 'would be to retain the prohibitions as now but to allow their interpretation to evolve differently from EU jurisprudence'. One way this could happen, for instance, is in permitting a 'wider scope to apply non-competition "public interest" criteria to merger appraisal' (Vickers 2017).

Digital platforms and competition policy

Defining digital platforms

This section looks to understand the relationship between competition policy and the rise of the 'platform economy'. Digital platform companies are a relatively new phenomenon, but with the dominance of Google and the more recent rise of Uber and AirBnB, it is clear that they are rapidly reshaping the nature of our economy. The section considers what defines digital platforms, and what implications this has for competition policy.

As Kenney and Zsyman (2016) note, discussing platforms is difficult because there is not a clear definition in existence which can capture precisely what the variety of different platforms are doing – especially given the rapid way in which platform companies are innovating. Nick Srnicek (2016) proposes four core features of platforms, which can be used to help us organise how the literature understands platforms. Primarily, Srnicek suggests that they act as digital infrastructures that enable two or more groups to interact, positioning themselves between users and 'as the ground upon which their activities occur, which thus gives it privileged access to record them'.

This understanding chimes with that found in the economics literature, where platforms are generally understood as 'two-sided markets' or 'multi-sided markets' (Rochet and Tirole 2003; Gawer 2014). Platforms thus 'play the role of facilitators of exchange between different types of consumers that could not otherwise transact with each other' (Gawer 2014). Whilst some platforms are straight-forward, two-sided markets, there can be multiple sides to platforms. Eisenmann et al. (2008) expand upon this further, noting that platform-mediated networks 'encompass several distinct roles', including: demand-side platform users, commonly called end users; supply-side platform users, who offer complements employed by demand-side users in tandem with the core platform; platform providers, who serve as users' primary point of contact with the platform; and platform sponsors, who exercise property rights and are responsible for determining who may participate in a platform-mediated network, and for developing its technology. An example of all four roles is found in the Linux operating software. Any party can use Linux (demand-side users), likewise any party can offer Linux-compatible software applications (supply-side users). Moreover, any party can bundle Linux with personal computer hardware (platform provider) and any party can contribute to improvements to the Linux OS (platform sponsor) (Eisenmann et al. 2008).

Srnicek's second core feature is that platforms produce and are reliant upon 'network effects', meaning that the more users who use a platform, the more valuable that platform can become to others within the network, including other users, advertisers, etc. Indeed, as Gawer (2014) notes, much of the literature sees platforms as synonymous with the concept of 'network effects' or 'feedback loops' as they are otherwise known. The key to network effects is, of course, data and the way that data is used by platform companies to bring together different sides of the market. As the user-base of a platform grows, platform companies are able to harvest more and better-quality data, which they can use to increase the quality of the service offered to both sides of the platform. Big Data is thus a critical component of platform companies; we will address this issue in more detail in the following section. There are,

however, two sides to network effects (see Rochet and Tirole 2003). Evans and Schmalensee (2014) divide these network effects into two types of externality: 'usage externality' and 'membership externality'. To explore this, they use the example of OpenTable, a platform which allows restaurant-goers to search hundreds of restaurants, check table availability and book a table online. Usage externality exists when two economic agents need act together to create value – thus, this refers to the way both consumers and restaurants benefit when the platform is used to make a reservation. The greater number of users and restaurants there are on the platform, the more useful the platform becomes for both sides, and thus its attractiveness increases. There is a membership externality when 'the value received by agents on one side increases with the number of agents… participating on the other side' (Evans and Schmalensee 2014). Thus, this refers to the way consumers benefit increasingly as more restaurants sign up to use the platform (although the restaurants themselves do not benefit more from this).

Srnicek (2016) notes, thirdly, that platforms often use cross-subsidisation, meaning that one side of the network benefits from reduced cost or access is given for free, whilst another side of the network pays in order to gain access. For example, Facebook is free to use for users on one side of the platform, but on the other side of the platform advertisers pay considerable sums to Facebook in order to gain exposure to those users.

Finally, from Srnicek's perspective, platforms are designed to make themselves attractive to its varied users by presenting themselves as 'empty spaces' within which market activity occurs – but in reality, platforms almost by definition enact a form of governance and control over how different users interact on the platform. Uber's driver rating system, and its disciplinary function, helps to illuminate this. A study by Rosenblat et al. (2016) describes how the Uber rating system can be extremely tough for drivers – drivers may be removed from the Uber platform if their star-rating average drops below 4.6 out of 5, meaning that any rating other than a 5 ultimately risks an Uber driver losing their job. Moreover, the study highlights how this rating system opens the door to discrimination, with ratings found to be influenced on the basis of factors such as a driver's ethnicity. Uber also uses its tracking data to ensure its drivers and not simultaneously working for rival taxi firms.

It is important to recognise that there are, however, numerous types of platform companies which utilise the core defining features described above in different ways according to their business model type. Kenney and Zsyman (2016) note that platforms can operate to make digital tools available to support the creation of other platforms, can 'mediate work' (Uber et c), operate as retail spaces, or provide services. Similarly, Srnicek (2016) suggests there are five types of platform firms: advertising, cloud-based, industrial, product and lean.

Advertising platforms are thus such as Google, which operate almost exclusively on the basis of selling targeted advertising space. Cloud platforms include services such as Amazon's Web Services (AWS), which rents out cloud-based digital infrastructure that is utilised by firms including Uber and AirBnB. Industrial platforms are platforms developed by companies such as Siemens which are designed to enable smart manufacturing, wherein all component parts can be managed and tracked by a platform. Product platforms are the product of these

prior developments and are focused on the rental of products through a platform, including services such as Spotify. Even industrial companies such as Rolls Royce now combine product platforms with industrial platform technology by effectively 'renting' their engines to companies rather than selling them. As the margin on selling engines decreased, Rolls Royce were wary of third parties being contracted to maintain their engines post-sale and so now 'rents' engines and utilises industrial platform technology to manage and maintain its products throughout the contract. Much of the discussion around the 'gig economy' involves 'lean' companies, such as Uber and AirBnB, so-called because of the way they promote themselves as asset-less and merely 'virtual platforms'. This type of 'hyper-outsourced' platform operates on the basis that workers, the capital necessary for them to operate (such as a car) and all maintenance costs come from outside the platform company. Srnicek (2016) argues that, 'all that remains is a bare extractive minimum – control over the platform that enables a monopoly rent to be gained.'

Digital platforms and monopolisation

The extractive nature of platform technology is arguably contributing to a growing problem in the global economy – the decline of the labour share of national income. In a recent paper which conceptualises the rise of 'superstar firms', Autor et al. (2017) discuss the impact of such firms on reducing the labour share globally. Traditional theories of labour share decline suggest either technology acting as a replacement for labour, or the outsourcing of labour to Asia and other developing economies. However, rather than drawing upon macro-level industrial data, Autor et al. utilise micro panel data to argue that 'the fall in the aggregate labour share has a large element of reallocation *between* firms with shifts in output toward firms with low (and declining) labour shares'. Their analysis demonstrates that industry sales increasingly concentrate in a small number of firms and that concentration arises most in industries with the largest declines in the labour shares, leading to the dominance of the superstar firms. What is most interesting from our perspective here is that Autor et al. note that superstar firms do not necessarily pay lower wages, nor is their dominant position simply the result of changes to competition regulation. Rather, their profit per employee is much higher than usual, with one possible explanation arising from the use of 'near-frictionless commerce enabled by the internet and globalization enables more efficient firms to be rewarded with higher market shares today than in the past'. Indeed, the authors explicitly refer to several digital platform companies, including Google, Facebook, Uber and AirBnB (as well as non-platform companies), as examples of how these new superstar firms are able to extract a higher profit ratio. Their more efficient use of technology and innovation to extract higher profits leads to a lower wage share, which enables them to be more competitive, and thus leads to a 'winner takes all' feature within markets (Autor et al. 2017). Indeed, the authors highlight how even when superstar firms become dominant through competitive means, their position may be cemented through less benign methods, such as lobbying and mergers (see also Van Reenen and Patterson 2017).

Focusing on their ability to squeeze the labour share is of course only one way of understanding how digital platforms can come to dominate markets. There are wider

concerns, however, that digital platforms tend to operate in such a way that monopolising tendencies will always come to the fore; the core features of digital platforms appear to offer these new types of companies opportunities operate as monopolies in fairly novel ways. Firstly, the impact of 'network effects' or the 'feedback loop' have been seen to produce monopolies. Gawer (2014) argues, for instance, that network effects 'trigger a self-reinforcing feedback loop that magnifies incumbents' early advantages' leading to a 'winner-take-all' outcome. For example, as an early social network, Facebook attracted users earlier than other rivals and build a user base larger than others earlier. The network effect of this means that new users would tend to choose Facebook over a rival social network, precisely because it already has more users to connect with, enhancing the quality of the service provided. Whilst this is clearly true to an extent, critics of this theory would undoubtedly point to the way in which Facebook came to oust the incumbent and well-financed MySpace as the dominant social network platform.

Srnicek also describes the way in which platform companies use a cross subsidisation of services to draw people into networks. Given platforms rely upon Big Data, for instance, to drive their targeted marketing, they are seeking to expand into new areas to harvest more data. We can see Amazon's development of the Echo system as an example of this – Amazon sells its Echo devices at a loss, however the data it captures means that not only does Amazon increase its pool of data to analyse, but it can also act as a gatekeeper for third party apps and services that tie in with the Echo system, such as Spotify (Hook et al. 2017).

Platform companies are also involved in 'the funnelling of data into siloed platforms', which acts to tie users in to particular platforms. This refers, for example, to the way in which companies such as Apple increasingly 'enclose' users within an ecosystem, involving hardware, software and cloud-based systems. Similarly, Facebook and other websites have moved to build an entire infrastructure from which users do not need to deviate – for instance, Facebook now offers messaging services, marketplace services and seeks to channel its users access to external websites and other content through its own platform (Srnicek 2016).

Big Data and its regulation

Clearly, the way that Big Data is being harvested and used by platform companies in order to gain a competitive advantage is central to the prospect of new forms of monopolisation. This section seeks to understand how the literature has understood the key characteristics of Big Data, and what implications this has for our understanding of the monopolising tendencies of platform companies. As will be shown, however, the literature on Big Data is divided over both its nature and qualities, between those who see Big Data is little different to any other kind of input or asset, and those who suggest it must be understood as a serious challenge for competition regulation.

Within some of the academic literature, there is a tendency to view raw data as 'non-rivalrous', abundant and valueless. For example, in order to analyse the nature of competition relations around Big Data, Lambrecht and Tucker (2015) propose applying a classic 'resource-based view of the firm' framework to data, which asks several questions around the

nature of data. For example, on the question of whether or not data is inimitable, they argue that data 'is non-rivalrous, meaning consumption of the good does not decrease its availability to others' and that it 'has near-zero marginal cost of production and distribution even over long distances'. Moreover, they suggest data is not rare, and that it holds no value itself – it needs to be processed and analysed before it holds value as an asset. Rather, they suggest that the act of collecting data 'does not confer a long-term competitive advantage' and that firms must succeed in developing systems to analyse data effectively and keep pace with changing consumer demands. The upshot of this, within Lambrecht and Tucker's perspective, is that data-driven firms are under the same competitive pressures as any other business type (perhaps even greater pressures), and thus competition regulation should not be adapt new mechanisms to address digital platforms. Schepp and Wambach (2015) also draw our attention to the fact that the 'timeliness' of data limits the competitive advantage companies can gain from harvesting large quantities of data. This refers to the fact that consumer preferences change frequently and data is only valuable when it is up to date. This means, they suggest, that 'potential competitors do not necessarily have to build a dataset equivalent to the size of the incumbent … They rather need to find ways to accumulate highly relevant data'.

Sokol and Comerford (2017) find that a dominant argument within the existing academic literature is that competition law is an inappropriate tool to regulate Big Data issues. The authors themselves attempt to cover both sides of the argument, but ultimately find in favour of the claim that antitrust regulation could harm the positive impact of digital platforms. They argue, amongst other things that:

- Data accumulation 'does not, by itself, create a barrier to entry, and does not automatically endow a firm with either the incentive or the ability to foreclose rivals, expand or sustain its own monopoly, or harm competition in other ways'.
- Data-driven markets are typically characterized by low entry barriers, allowing challengers to enter the market
- Data is ubiquitous, inexpensive, and easy to collect – its analysis is a firm's 'secret sauce'
- Data is non-rivalrous
- Data has a limited timeframe of value
- Online platforms are highly differentiated, and may use the same data for different purposes

They argue further that case-law does not support the contention that big data is an antitrust problem, citing the fact that the European Commission cleared the Facebook/WhatsApp merger on the basis that users 'multihome' – that is, they use a range of other social network and messaging services simultaneously alongside Facebook and WhatsApp. Moreover, they argue that under current antitrust law, 'no relevant market can be defined for the collection of consumer data'. Overall, the authors find that 'the empirical case regarding Big Data as an

antitrust concern is still lacking' and that 'until theories of harm can be matched with specific factual circumstances and negative economic competitive harm can be shown, the antitrust case against Big Data is a weak one'.

Sivinski et al. (2017) come to similar conclusions. They propose a framework to determine the competitive significance of data. The authors warn that data is not 'unique' when one considers how to approach it under competition law, and that as with all other inputs, 'agencies and other institutions should proceed with great caution to understand in depth what data is relevant in each case, how that data is used, and whether any substantial foreclosure is indeed possible'. Instead, authorities should 'apply traditional tools and avoid acting on models of competition analysis that do not rely on hard evidence about the nature and use of the subject data'. The framework suggested considers four aspects: whether the parties own or control the relevant data; whether the relevant data is commercially available as a product or as an input for products of downstream competitors; whether the relevant data is proprietary to the owner's or controller's products or services and a competitively critical input; and, whether reasonably available substitutes for the relevant data exist or whether the data is unique.

A critical aspect of the argument against utilising antitrust regulation to deal with digital platforms involve the difficulty associated with defining the market involved, and thus the power of companies within that market. As Graef (2015) notes, competition authorities start their analysis by defining the relevant market, yet a correct market definition requires the existence of supply and demand for the product or service. Currently, for most platforms, user data 'only forms an intermediary product and is not sold or traded, no demand and supply exists as a result of which the substitutability of the data cannot be assessed and no relevant market can be identified'. This, in turns, means that it is difficult to assess market power, which is commonly defined as the ability of a firm (or group of firms) to raise prices significantly above the competitive level. A further complication is highlighted by Evans and Schmalensee (2014), who argue that it is important to not focus only on a single side of a multi-sided platform, given it is possible for platforms to have prices that are significantly above marginal cost on one side and at or below marginal cost on the other side. Graef (2015) suggests a possible route around this issue is to analyse the competitive strength of providers based upon their ability to monetised collected information – this would use the concept of 'potential competition' as a proxy for market dominance.

Evans and Schmalensee also make the point that in order to adequately apply economic analyses underpinning anti-trust laws, it is necessary to consider the multiple customer groups with interdependent demand. A search engine such as Google, for example, provides value to three distinct groups of economic agents: websites that are indexed and made available to people through search queries; people making search queries; and advertisers. The authors argue that recognizing these multiple customer groups, 'is critical for ensuring that antitrust enforcement does not have the unintended consequence of reducing consumer welfare by causing more harm on one or more sides of a platform than it provides benefit on another side.' Schepp and Wambach (2015) also argue that although network effects can lead

to concentration, it is important to recognise, especially within multi-sided platforms, that this does not necessarily exclude competitive pressures.

Feinstein (2015) suggests similarly that Big Data is a straightforward issue for competition regulation. She argues that 'the use of data by businesses is not that new' and that regulatory authorities in the US have applied standard competition to data markets for years. In their analysis of the existing evidence on the issue of 'bringing competition policy to the digital era', the OECD (2016) note that even if the collection of data does necessarily lead to dominance or market tipping, it should be considered as part of the competitive analysis, noting in particular how the collection of data can lead to 'a real-time feedback loop that may empower incumbents over potential entrants'. Moreover, the OECD remain concerned that the 'massive accumulation of personal information and intensive use of data analytics may enhance market power, lock-in consumers and raise barriers to entry', creating incentives for companies to engage in anti-competitive practices, 'such as preemptive mergers, exclusionary conduct and even to collude in novel ways'. They suggest, however, that traditional antitrust tools can be used to tackle such issues, but that more radical measures (such as requiring companies to share data inputs) should be carefully considered before use, as overbearing regulation may 'impose unnecessary costs on market competition and on the process of innovation' which benefits consumers.

Feinstein does admit, however, the fact that today's platform companies, which are run on Big Data, hold so much information on consumers is a novel issue. However, she argues that this issue falls within the realms of consumer privacy, and is *not* a competition policy issue. Ohlhausen and Okuliar (2015) look to understand this by disaggregating different forms of 'harm' or abuse that might be done by a digital platform company. They argue that when there is harm done to consumer welfare on the whole or to economic efficiency, antitrust laws should be involved. However, they argue that where the issue of harm involves the relationship between a company and the individual consumer from whom the company are collecting data, the matter should be resolved within the realm of consumer protection law.

Many of the arguments outlined above, however, face criticism from a literature which suggests Big Data is a unique new input and/or asset which must be treated as such, as that data-based digital platform companies are altering the competitive landscape. Graef (2015) attempts to 'nuance' the above understanding of data by bringing in more real-world evidence to complicate the theoretical non-rivalrous conception of data. In doing so, Graef provides a 'common sense' retort to much of the literature which attempts to obfuscate the significance of Big Data. He notes, for example, that online platforms would not be investing considerable amounts of money in developing free services for users in order to collect and analyse relevant information if data was so widely and freely available as asserted. Even though access to a large and up-to-date database is in-itself no guarantee for the success of an online platform, Graef reminds us that 'data remains a necessary input of production for the delivery of services to users and advertisers that are of the quality and relevance they expect', quoting a Google chief scientist who suggested: 'We don't have better algorithms than anyone else. We just have more data' (cited in Graef 2015). Graef also points out that some

platforms are actively shielding data away from competitors, such as Facebook, 'who are prohibiting third parties in its general conditions from scraping content off its platform', or Google who restrict 'the portability of advertising campaigns and by requiring websites to enter into exclusivity agreements for search advertisements'.

In a similar vein, on the issue of needing to separate out consumer protection law and competition law, Schepp and Wambach (2015) attempt to show how, despite their theoretical and legal separation, consumer protection and competition regulation issues often roll into one. For example, they note that 'an infringement of data protection law can lead to a competitive advantage… if a company has collected or used data beyond users' consent to get more insights into user habits'. Moreover, they argue that 'data protection and privacy may constitute elements of non-price competition that should, as such, be taken into account by competition authorities'.

In a reply to the mainstream economics and law literature which either posits benign competition or regulatory incompatibilities as reasons why digital platforms cannot or should not be more proactively regulated by competition authorities, Stucke and Grunes (2015) set out to 'debunk' various myths perpetuated about digital platforms and Big Data. The key features of their argument are:

- *It is a myth that data-driven online markets have low entry barriers.* Stucke and Grunes argue that entry barriers for digital platforms 'are neither invariably low nor invariably high', and that entry barriers, once low, 'can increase due to network effects'. They cite the example that few investors would provide capital to a firm seeking to rival Google in the search engine market.
- *It is a myth that data has little innate value.* Digital companies 'currently spend considerable money and effort to acquire and analyze data and to maintain a data-related competitive advantage'. They suggest that, 'If any company propagates this myth, ask it if it would be willing to license its consumer data to its competitors, and if so, at what price.'
- *It is a myth that companies cannot exclude smaller companies' access to key data or use data to gain a competitive advantage.* 'Today's dominant firms can benefit from the velocity of data to quickly identify and squelch nascent competitive threats in a process called "nowcasting"'. In other words, predicting emerging trends and seeking to dominate the market before rivals and other starts ups get there.
- *It is a myth that competition officials should not concern themselves with data-driven industries because consumers generally benefit from free goods and services.* Stucke and Grunes' perspective urges us to reconsider this relationship, suggesting that such services are not 'free', but that 'consumers often pay with their personal data and privacy' and that, 'because of the lack of transparency, consumers often don't realize how much they actually pay for these services'. Moreover, they suggest that consumers are often unaware who has access to their personal information, what data is being used, how and when the data is being used.

International regulation of platforms

There is not currently a specific, uniform legal framework covering the regulation of digital platforms and Big Data in existence either in the UK or the EU. However, a range of policy instruments are already being used to tackle the problems associated with digital platform market behaviour. In this section, we look at some of the key examples.

In a report delivered at the request of the Dutch Ministry of Economic Affairs, a consortium led by TNO, an independent Dutch research organisation, discusses the appropriate frameworks for dealing with digital platforms. Ultimately, their analysis points to the complex nature of regulating platforms, given that each platform is different and that there are a number of different sides to a platform business (TNO 2015). The report, however, provides a valuable resource for understanding how government have already looked to respond to digital platforms. Some of the examples from their findings are summarised below. Alongside these more general examples, the TNO report contains case studies on a number of dominant digital platforms, such as Netflix.

TNO (2015) note that at the national level, competition law, consumer protection law and data protection laws have all been applied at the national level. They cite, in fact, the CMA's investigation in the UK into Booking.com and Expedia, who were found to be preventing online travel agents from discounting the prices of room-only hotel accommodation. Following the investigation, both companies 'made changes to remove restrictions from their contracts with hotels which prevented hotels from offering cheaper room rates on competing websites.' Utilising consumer protection law, the Netherlands' Authority for Consumers and Markets imposed fines on Vodafone, as the company did not charge users data for using the pay-tv channel HBO app, 'thus influencing consumer behaviour, in violation of the net neutrality rules'. Under data protection laws, the Dutch Data Protection Authority and the Canadian Privacy Commissioner's Office investigated WhatsApp in 2013. The findings from this investigation forced WhatsApp to make changes where it had abused its position, including cases where WhatsApp 'did not delete non-users' mobile numbers once a user's phone contacts were transmitted to WhatsApp, which violated Dutch data protection law'.

The Netherlands appears to be among the frontrunners in addressing such issues. The Dutch municipality of Amsterdam, for example, has begun a regulatory process to tackle AirBnB's influence in the city. 'The municipality wants to ensure that people only occasionally rent out their house whilst away (sharing economy), rather than run a permanent, unregulated hotel (not sharing economy)' (Frenken et al. 2015). The municipality now permits its residents to rent out their homes for up to 60 days per year. As Frenken et al. (2015) argue, the local government is 'trying to regulate the rental of homes in such a way that it becomes part of the sharing economy as previously defined. Without this regulation, Airbnb would create an incentive for illegal renting with negative consequences for the local residents (higher rents, nuisance and speculation)'. In France, the so-called principle of *loyauté des plateformes* enshrined in law under the Hollande administration in 2015, requires platforms to produce and deliver fair, clear and transparent information to users on, amongst other things, the terms and conditions of use of the intermediation service that it offers, its relationships with

advertisers and the criteria it uses to rank and sort information offered to users (DGCCRF 2017).

Beyond the national level, there are instances of both European and other cross-border actions being taken to regulate digital platforms. In April 2015, the European Commission began an investigation into Google in relation to the company's development of the Android operating system, looking at whether Google has 'hindered market access by tying or bundling certain Google apps and services'. Later that same year, the EC sent a statement of objectives to Sky UK in relation to its use of 'geo-blocking'; that is, prohibiting films from being streamed through its service in some EU countries. The Global Privacy Enforcement Network (GPEN) Privacy Sweep involves 29 data protection regulators investigating children's apps and websites 'to ensure compliance with data protection and privacy laws'. Following its findings, national regulators then decide on whether regulatory actions should be taken against certain digital platforms (TNO 2015). In France, there have been discussions within government reports over the potential to create a European 'ratings agency' to preside over digital platforms (see Strowel and Vergote 2016; French government 2015).

A progressive policy agenda

The UK's competition regime is highly regarded – and the creation of the CMA is general seen as a further, positive step. Of course, from the perspective of economic justice, it has to be acknowledged that the establishment of competition policy is constitutive of a neoliberal economic policy framework, insofar as it offers normative support to the notion of private enterprise, unencumbered, as the key vehicle for achieving equitable outcomes.

However, competition policy is perhaps best understood as occupying a nuanced position in this agenda, insofar as it encompasses a progressive, regulatory response to the tendency of unencumbered markets to enable the concentration of private economic power. As such, it is wrong to assume that the UK's competition regime is generally non-interventionist. However, the grounds upon which UK competition authorities may intervene to prevent or reverse certain practices have traditionally been quite narrow.

It should be noted that competition policy can, in general, be associated with higher productivity – more so when authorities have a greater range of antitrust powers to enable fair competition. This is almost certainly related to the role of competition law in enabling new, disruptive entrants into established markets, insofar as it constrains incumbent rent-seeking. We believe therefore that UK competition policy needs to become more strategic, particularly in relation to technological innovation. Too often, merger control, for instance, is operated too technically and incrementally, considering merger cases on their individual merits rather than in terms of their potential impact on long-term competitive dynamics within and across growing industries.

This is clearly relevant for digital platforms and Big Data – specifically the *control* of platforms and data by incumbent firms. We can and should consider how well existing competition law is performing in this area, measured against its defining objectives rather

than solely technical standards. It is clear that a handful of very large digital companies have achieved very dominant market positions across a range of service industries, and not (yet) clear that this situation represents merely a transitory stage in the development of the industries in question.

The nature of these companies' business models is that they control sizeable market share precisely because they control, or are able to shape, some of the key digital infrastructures through which markets now function. By and large, these firms are highly innovative. But their power may be being used to stymy further productivity growth over the long term.

The evidence base on whether Big Data, in particular, represents a unique set of challenges for competition policy is mixed. If nothing else, we know that many of the largest digital companies are extremely eager to control and capitalise upon data, and indeed prepared to engage in unprofitable activities in order to maintain and enhance their accumulation of data. This is a front-line reality which, at the very least, should cause us to question the notion, supported by mainstream economic theory, that the accumulation of data by digital companies is relatively benign.

A progressive response to these issues would need to focus on simultaneously empowering consumers, citizens and workers. Firstly, one of the key dilemmas in the impact on competition on Big Data is that consumers are generally willingly providing their personal data to companies (often in return for free services). Consumer policy and competition policy should therefore be more firmly brought together, enabling joined-up, long-term thinking about the consequences of regulatory reforms to help markets work better, and prevent industry concentration undermining competition and constraining productivity growth.

Secondly, in relation to data but also platforms in general, we need to consider whether there is a need for the state to be more actively involved in regulating platforms *qua* platforms. If a handful of firms are able to disproportionately shape how new markets operate, it may be correct from the perspective of economic justice to subject them to more rigorous public interest tests. It may also be useful to consider whether public authorities can directly provide some platforms, as a benchmark against which private platforms would have to compete.

Finally, there is a concern that for some platform companies, the most valuable data relates to the performance of their workers. There have been important moves at the European level to make workers' personal data portable, but this will probably not apply to customer reviews of worker performance. Clearly, addressing these kinds of issues is far outside the remit of competition policy as traditionally understood. But being able to control the future employability of current or former workers is, potentially, an enormous benefit to incumbent firms.

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