

Taming Giants: How Ordoliberal Competition Theory Can Address Power in the Digital Age*

By Anselm Küsters** and Isabel Oakes***

Abstract

In comparing the historical circumstances in which ordoliberalism emerged with the socio-economic and political trends of today, this study identifies parallels that can provide useful insights into tackling current challenges in the digital age. On this basis, the study explores whether ordoliberal concepts like “complete competition,” “interdependence of orders,” and *Vitalpolitik*, and the lessons from the past that they incorporate, can help reform European competition law for the digital economy. Along with a renewed focus on structural remedies, per se rules and a historical interpretation of European competition norms, ordoliberal theory could contribute to a reformed approach to competition policy that can tame the power of today’s digital giants more effectively.

JEL Codes: B25, B41, D40, K21, L40

Keywords: Ordoliberalism, Competition Law, Digitalization, GAFAM

* For their helpful comments on earlier versions of this paper, we would like to thank Stefan Kolev and Stefan Vogenauer. We are also grateful to the three anonymous reviewers, whose detailed feedback has improved our analysis significantly, and to Mark McAdam for his professional guidance throughout the editorial process. A related blog post entitled “Lessons from the Past? How Ordoliberal Competition Theory Can Address Market Power in the Digital Age” has been published by the Stigler Center for the Study of the Economy and the State at the University of Chicago Booth School of Business and can be accessed here: <https://promarket.org/2021/11/14/ordoliberal-lessons-competition-tech-platforms-antitrust-germany/>. We thank Asher Schechter and Jana Kasperkevic for their comments and guidance in this process.

** Max Planck Institute for Legal History and Legal Theory, Hansaallee 41, 60323 Frankfurt, Germany. The author can be reached at kuesters@lhlt.mpg.de.

*** Faculty of History, George Street, Oxford, OX1 2RL, United Kingdom. The author can be reached at isabel.oakes@lincoln.ox.ac.uk.

1. Introduction: Ordoliberalism and its Lessons from the Past

When confronted with pressing problems, policymakers often turn to history in an attempt to distil lessons from the past that might guide them in their actions (Eichengreen 2015; Schenk 2021; Küsters 2022). Similarly, scholars have started to “look back at the history of liberalism to find out which of today’s problems already preoccupied liberal economists of the past and to what extent the solutions of that time are transferable to today” (Horn *et al.* 2019, 179). It is thus surprising that the large number of reports and studies that have recently proposed reforms to revise EU competition law for the digital economy have focused solely on technical aspects of modern competition law without any references to the past (Autorité de la concurrence and Bundeskartellamt 2016, 2019; Crémer, de Montjoye and Schweitzer 2019; Furman *et al.* 2019; Stigler Center 2019). This absence of historical lessons is especially striking in light of the current revival of antitrust in the US, where the law’s historical origins and its former application are being used to legitimize ambitious reforms targeted at large technology companies (Stoller 2019; Lynn 2020; Waller and Morse 2020). This study argues that there are important insights to be learnt from the first generation of ordoliberals on how to tame the economic and political power of Big Tech. Their distinctive approach to competition law, which took into account how concentrations of economic power can affect the political order and the population’s welfare, differed significantly from contemporary attitudes towards competition and forms an important pillar of a “contemporary ordoliberalism” (in the sense of Dold and Krieger 2019, 243) that can guide competition law enforcement in the digital age.

As is often the case in the history of economic thought, the starting point of ordoliberalism can only be understood when analyzing the historical context in which its scholars lived, worked, and developed their theory. During the interwar period, the University of Freiburg became home to a group of like-minded Protestant economists and lawyers who came together to develop a reformed economic liberalism (Kolev 2019b). Amongst others, this “Freiburg School” included the influential Walter Eucken ([1940] 1989, [1952] 1955, see Heuß 1989) and his wife Edith Eucken-Erdsieck, Franz Böhm, and Leonhard Miksch. Together with the “sociological ordoliberals,” Wilhelm Röpke and Alexander Rüstow (Meier-Rust 1993; Commun and Kolev 2018) these scholars aimed to identify the “legal framework for a *productive* market economy (i. e., seeking to overcome scarcity problems) that was at the same time *humane* (i. e., enabling a self-determined life for all citizens)” (Dold and Krieger 2019, 249). Their search led them to propose a “third way” between the *laissez-faire* thinking of the nineteenth century and the fiscal and monetary interventions of the interwar period that combined strong competition policy and price stability with traditional social values.

Ordoliberalism distinguishes itself from other ideologies of the twentieth century, such as communism or fascism, in building its thought on past experiences and

contemporary political exigencies rather than a deterministic future (Koselleck 1973; Hoffmann 2020). It can therefore be understood as a set of specific lessons from the past (Küsters 2020a). Taking inspiration from this, this study aims to transfer some of the lessons learnt in inter- and post-war Germany to the global and contemporary setting of the digital age. Above all, this concerns the concepts that ordoliberals developed as a reaction to the, at that time, unprecedented spread of cartels, syndicates, and monopolies (Joerges 1972, 436; Schröter 1994; Beater 1995; Jovović 2012). The dominant economic opinion at that time was supportive, though not completely uncritical of cartels, and described the emergence of giant enterprises as the necessary consequence of free market competition (Krüger 1983, 109). For example, Gustav Cohn, an influential Prussian economist at the time, usually counted among the *Kathedersozialisten*, i. e. the “socialists of the chair,” declared at the 1905 debate of the *Verein für Sozialpolitik* that: “Giants have been born from the freedom of competition” (quoted in Weippert 1960, 159). In this context, ordoliberals painted a much more critical picture of concentrated economic power and its detrimental effects on society (Diemer 2019, 238).

In the over one hundred years that have passed since Cohn’s remark, the notion of “giants” has become common rhetoric among scholars to denote large undertakings that possess significant power over the market (e. g., Vallindas 2006, 658; Jensen-Eriksen 2020). The current debate focuses on “digital giants” such as Amazon or Facebook, which appear to be threatening democracy, equality, and freedom. However, reflecting arguments used in the 19th and 20th century, these powerful firms are also said to be born out of technological necessities such as network effects and economies of scale, and thus their overall impact on society remains unclear. In line with the methodological field of “contextual economics” that encourages broad analytical frameworks (Goldschmidt, Grimmer-Solem and Zweynert 2016; Kolev 2019a), this study utilizes the holistic ordoliberal analysis of competition to inform the contemporary debate on digital giants. A similar remark was made by Kolev and Goldschmidt (2020, 233) who noted that Röpke’s cultural pessimism allows for a fruitful provocation of the debate on digitalization. We aim to extend this point by asking what can be learned from the first generation of ordoliberals and their understanding of economic concentration, welfare, and competition for analyzing the challenges presented by the digital economy.¹

To do so, this study identifies three parallels between the historical circumstances in which ordoliberalism emerged and the socio-economic and political trends of today. The first parallel pertains to growing concentration of economic and political power (Section 2), the second concerns potential reductions in consumer welfare (3), and the

¹ Whilst writing this paper, a special issue of the *Journal of Contextual Economics*, 139 (2019) 2–4, was published that reflected on several of the structural parallels between the interwar period and the contemporary liberalism that we ourselves explore. This paper enriches this debate by providing a more structured comparison between these two periods, by connecting the developments with underlying attitudes towards competition, and by using this context to derive concrete proposals for a reform of European competition policy.

third reflects on the respective understandings of competition (4). On this conceptual basis, it is then possible to explore how the theoretical and practical solutions developed by ordoliberals as a reaction to these problems can provide insights on reforming European competition law, which faces similar challenges in the digital age (5). It is argued that with the use of ordoliberal concepts such as “complete competition,” “interdependence of orders,” and *Vitalpolitik*, a renewed focus on structural remedies and per se rules, as well as a historical interpretation of the European competition norms can contribute to a reformed competition policy approach that effectively addresses the power of Big Tech.

2. Economic Power and the Political Order

After the Second World War, the role played by cartels in supporting the emergence and preservation of fascist regimes became an increasingly popular topic of debate (Wells 2002; Connor 2008). With a growing awareness of the economic dominance of digital companies and their effects on democratic systems, the renewed scholarly attention to this topic in the past two decades therefore comes as no surprise (Rollings and Warlouzet 2018). Specifically, the question of whether, and to what extent, industrial monopolies and cartels enabled Hitler’s rise to power remains popular (Wu 2018, 80; Tepper 2019). Since ordoliberalism emerged during this period, it may be informative to ask which lessons ordoliberal scholars drew from the developments of economic and political concentration and power at the time (2.1) and whether some of these developments and lessons have relevance for today’s digital age (2.2).

2.1 Economic and Political Power at the Time of the Early Ordoliberals

Germany’s interwar economy saw a dramatic increase in industrial concentration, which had started as early as the 1860s and 1870s in the primary sector industries (Jovović 2012, 240) and can partly be traced back to the legal support given to cartels by the German Supreme Court at the time (Möschel 1995, 22). The number of cartel agreements in Germany rose from 4 in 1865 to about 600 at the eve of the First World War, reaching 1,000 prior to the hyperinflation in the 1920s and eventually 2,100 in 1930 (Crane 2020, 1335). These cartels covered many relevant sectors such as coal, iron and steel, steel processing, machinery, building materials, chemicals, textiles, paper, and food (*ibid.*). Reacting to the economic volatility and disorganization brought about by the end of the controlled war economy and later the Great Depression, many of these cartels and syndicates eventually developed, not least with the help of German banks, into monopolies. For example, from 1925 onwards the chemical industry was dominated by the conglomerate *I.G. Farben* (*ibid.*). The 1,600 new cartel agreements forced by the Nazis between 1933 and 1936 further blurred the

line between these two anti-competitive market forms, as the resulting coercive cartels (*Zwangskartelle*) were no longer cartels in the original sense but rather “monopolistic formations” that were under strict state supervision (Jovović 2012, 241).

This in turn opened up the possibility for an endemic interdependence between large firms, banks, and far-right politicians. At the time, numerous legal and economic observers across the political spectrum realized that the “privatization of the state and the nationalization of the private” became an epochal sign of the transforming economy (Hederer and Priemel 2021, 95). While not all firms participated equally in the Nazi regime (Wells 2002), several dominant firms secured implicit future protection by providing organizational resources and undermining democratic features within their firms (Crane 2018; 2020). Moreover, existing cartel structures were easily appropriated by the Nazis, and agreements between German cartels and foreign firms weakened the Allies’ war readiness (*ibid.*). Overall, the German experience with cartelization and monopolization, culminating in the horror of Nazism, gave credence to the argument that concentrations of economic power eventually lead to a distortion of the political order, and vice versa (McGill 1945, 23; Wegmann 2008, 23).

The ordoliberals also drew these lessons from their experiences of economic and political concentration in Germany in the first half of the twentieth century. In *The German Question*, Röpke explores how Germany moved from free trade to protectionism and consequently “conditions were first created for the growth of cartels and syndicates, of the neo-German monopoly capitalism and the imperialism bound up with it” (1946, 168). Similarly, Eucken ([1952] 1955, 34) made clear how unrestrained *laissez-faire* competition during the industrial epoch had enabled the concentration of economic power. In such a context, he argued, prices could no longer function as efficient allocation signals, leading to increased state interventions, which in turn fueled the desire for special privileges that further disturbed the price mechanism. Eucken therefore did not consider competition to be a uniform and homogeneous occurrence, but rather a multifaceted mechanism that required careful curation (see Section 4). Based on their shared insight regarding the connection between economic concentration and political privileges, ordoliberals developed concepts and policy proposals that envisioned a return to a more competitive market order, not least through competition law (Böhm [1933] 2010; Nörr 1994, 112 ff; Murach-Brand 2004). After the war, Röpke opposed the plans that were being drawn up for the nationalization of key industries, as this “hyperconcentration” would facilitate the economy’s instrumentalization for warfare purposes in the hands of the next power-hungry leader (Wegmann 2008, 29 f). Though ordoliberals recognized the need to nationalize certain key industries, such as essential utilities, their vehement anti-nationalization rhetoric can be understood in the wake of Hitler’s abuse of power.

2.2 Economic and Political Power in the Digital Age

Current studies on economic concentration and mark-ups show that many global markets have, once again, become more concentrated and less competitive over the past decades (Gutiérrez and Philippon 2017; de Loecker, Eeckhout and Unger 2020; Díez, Leigh and Tambunlertchai 2018). Specifically, the digital “surveillance economy” is dominated by a few powerful companies known as GAFAM (Google, Amazon, Facebook, Apple, and Microsoft), which are exposed to limited competition and exert an increasing impact on other sectors and the economy (Zuboff 2019; Falch 2021). As a result, these companies take up the position of gatekeepers for access to multiple markets, as an increasing number of public authorities responsible for the implementation of competition laws recognize (ACCC 2019; Crémer, de Montjoye and Schweitzer 2019). In theory, the significant growth of venture capital and support for start-ups over the last decade should have facilitated the establishment of new companies that could become future competitors (Nicholas 2019; Heller 2020). However, frequent acquisitions ensured that despite the efflorescence of new start-ups, power in tech still flows toward the giants, who created and maintain a “killer zone” around their area of economic activity (Kamepalli, Rajan, and Zingales 2020). The COVID-19 pandemic, by fueling “predatory acquisitions” (Macrae 2020) and releasing unequal amounts of state aid (Hornkohl and Klooster 2020), has worsened this trend.

If the state is “negligent in its duties as policeman of the market,” Rüstow remarked during the interwar period, then competition “degenerates” and can be “abused by robber knights” (quoted in Reinhoudt and Audier 2018, 124). Similarly, competition in the digital economy no longer corresponds to the ordoliberal conception of an atomistic market structure but has resorted to a form of “toxic competition” that reflects a more centralized market structure, whereby dominant suppliers can dictate the rules of the game (Stucke and Ezrachi 2020). Echoing the observations made by ordoliberals almost a century earlier, we can discern how the accumulated power of these digital monopolists and the concentrated markets in which they operate have repercussions for the political order. This includes their impact on privacy and free speech, the non-transparency of their underlying algorithms that make far-reaching decisions (O’Neil 2016), their selection of information and spreading of “fake news” that lead to the emergence of self-contained filter bubbles, their potential influence on political agendas and even elections (Zittrain 2008; 2014; Bond *et al.* 2012; Epstein 2014), their usage of “hyper-nudging” (Gerbrandy 2019, 134), and their far-reaching networks of lobbyists that extend into the academic world (Corporate Europe Observatory and Lobby Control 2021). Especially the last point is to be emphasized, since the economic literature identifies lobbying as significant barrier to entry (Gutiérrez and Philippon 2018) and since it echoes the ordoliberal criticism of the “weak” state of Weimar that became overrun by “special interests” and could therefore no longer protect fair competition.

Taken together, these concerns illustrate the increasing potential of a small number of powerful, digital companies to guide, directly and indirectly, global collective behavior (Bak-Coleman *et al.* 2021), with significant repercussions for the political order. Even if these companies were never to use this power themselves, their systems can be readily exploited for undemocratic political purposes (Kruschinski and Haßler 2017). Algorithms themselves might unintentionally drive such a development: A recently published internal study by Twitter researchers, who had conducted a long-running, massive-scale randomized experiment on the platform, showed how its automatic algorithmic amplification favors right-leaning news sources (Huszár *et al.* 2022). If reforming competition law for the digital age necessitates linking market freedom more closely with democracy (as suggested by Gerbrandy 2019, 135), ordoliberal lessons from the past might thus be useful.

3. Consumer Welfare in Broad Perspective

Another structural parallel between the situation of early ordoliberals and the situation of today relates to the wide-ranging effects of economic concentration on the general welfare of the population. This concern could be termed “consumer welfare,” and we employ the term here deliberately to later contrast it with the narrower and more technical understanding of consumer welfare that is used in contemporary competition law (Section 5). A key goal of this study is to show that modern competition law in the digital age must be concerned with a broader conceptualization of consumer welfare (3.3) that transcends traditional quantitative measures like price, quality, or efficiency (3.2). Again, ordoliberal ideas might provide fruitful conceptual stimulation, as their adherence to competition transcended economic means to address social and ethical problems in the market and beyond (3.1). This is captured by their notion of an “interdependence of orders,” which makes clear that a comprehensive approach, including redistributive elements, is required for an equal society (Dold and Krieger 2019).

3.1 Welfare at the Time of the Early Ordoliberals

Without a doubt, Weimar Germany saw important improvements in the welfare system, such as the introduction of social rights to the new constitution, unemployment insurance, and municipal welfare policies (Hong 1998; Leisering 2001). Nevertheless, ordoliberals were critical of the Weimar Republic, seeing it as a state torn apart by politicized pluralism and “vested interests” leading to “an economic policy of planned chaos that pushed society towards tyranny” (Bonefeld 2013, 109). The cartelization of the German economy during this time enabled powerful market actors to dictate the “rules of the game” in the economy, thereby restricting the wants and freedoms of others in favor of their own (Eucken [1952] 1955, 53–5), while the

hyperinflation of the 1920s epitomized, in their view, the generaleconomic and political instability of the time (Abelshauer 2009; Mee 2019; Küsters 2020a). Coinciding with the rise in cartels and concentration discussed in section 2, German society also experienced a strong increase in economic inequality (Bartels 2019; Gómez León and de Jong 2019; Galofré-Vilà *et al.* 2021). Finally, ordoliberals like Eucken (1932, 306; for a recent translation, see: Biebricher and Vogelmann 2017, 51–72) linked societal disintegration to the increasing secularization of society (Krarup 2019), while other members of the school drew inspiration from Nietzschean and Weberian disillusionment theories (Röpke [1958] 1960; [1948] 1979; Gane 2012; Kolev 2018; Oakes 2020).

Overall, the political, economic, and societal turmoil resulted in a collapse of confidence in the state, which the ordoliberals sought to remedy by conceptualizing a “strong state” that was inherently linked to a competitive economy embedded in the legal order (Bonefeld 2012). Following the Second World War, these ideas were increasingly connected to the term “Social Market Economy,” coined by Alfred Müller-Armack and popularized by Ludwig Erhard (Grossekettler 1989; Nicholls 1994; Dietzfelbinger 1998), which summarized the ordoliberal objective to provide “prosperity for everyone” through measures like rigorous competition policy that would strengthen, rather than contain, the operation of the market (Abelshauer 1996; Ptak 2004, 278 ff). Crucially, tackling the issue of inequality was at the very core of these ideas (also noted by Stones 2018, 74), especially in the understanding of competition held by the “sociological ordoliberals” Rüstow and Röpke. They sought to integrate their economic policies into a social and moral framework that provided equal opportunity and just conditions within society (Rüstow 1942, 281; Röpke [1958] 1960, 289; [1937] 1963, 184). Similarly, Eucken ([1952] 1955, 300–1) sought to remedy problems of inequality and discrimination through progressive taxation within a competitive framework, as long as it did not hinder the market mechanism. Seeking solutions that lay beyond the economic orthodoxy of the time, these ordoliberals aimed to ensure equal starting conditions for all through better educational access, inheritance laws, and, above all, a system of “complete competition” that ensured equal distribution of market power.

3.2 Consumer Welfare in the Digital Age

At first glance, one may think that today’s consumerist society has left the socioeconomic problems of the interwar period and the immediate post-war years behind it and that the numerous, previously unimaginable digital gadgets have significantly improved people’s welfare. However, to paraphrase Hellwig (2006, 246), the problem is not that customers do not profit from the digital monopolists’ services, but that they in fact profit a lot – and that the monopolists know how to extract this economic rent. While the services of many Big Tech companies are ostensibly “free,” consumers are in fact paying by providing personal content and data (Stucke and Ezrachi 2020, 216).

As previously detailed, the digital economy is heavily concentrated and organized hierarchically, implying that some dominant companies can easily “charge” a large amount of private data and discreetly downgrade the quality of their services. While there is certainly some truth to the argument that after many years of data accumulation by GAFAM, the marginal damage of giving new data to these platforms has decreased, an important feature of GAFAM’s dominance in data and AI consists in the fact that they can update their datasets much faster – in near real time – than their smaller competitors, which further entrenches market power in dynamic markets (Graef 2015, 488; Küsters 2020b, 112, 117). Hence, data protection constitutes an important element of price-free competition that should be taken into account by competition authorities more thoroughly. For instance, if a merger leads to a decrease in data protection by combining different datasets or by removing a competitor with a higher level of data protection, this could be interpreted as a reduction in product quality or variety and thus a reduction in consumer welfare (Schepp and Wambach 2016, 123). Still, it needs to be acknowledged that there are limits to which such concerns can be integrated, as an increase in competition can have different effects on the level of privacy, depending on the market situation (*ibid.*, 124), and since individual consumers place different values on privacy (Tucker 2015, 3).

When thinking about consumer interests in the digital age, it is also crucial to understand its multidimensional quantity (Hellwig 2006, 265), which is not always easy to define intuitively. Big Tech companies link different customer segments with different interests, and these platform markets are difficult to delineate through traditional market definition (Graef 2015). Given the “free” nature of many digital services, it becomes particularly necessary to compare consumer interests in today’s markets with consumer interests in future markets. According to Möschel (2006, 364), efficiency-inspired approaches to competition law, such as the MEA surveyed in section 5, usually fail to adequately capture this time dimension since there is no commonly agreed upon theory of dynamic competition. Consider, for example, forms of predatory abuse in which an attractive offer today crowds out the dominant firm’s competitors and lays the groundwork for future consumers to be exploited (Hellwig 2006, 265). Applied to the digital age, the concern is that the free services provided by today’s incumbents enable the large-scale collection of data that later renders it impossible for third parties to offer competitive products (Küsters 2020b). Computer science research has shown that the volume and variety of data that forms the input is much more crucial than the chosen algorithm (Banko and Brill 2001, 27; Halevy, Norvig and Pereira 2009). Simply put, a mediocre algorithm with 100 million words of training data outperforms the best algorithm with 1 million words (Russell and Norvig [1995] 2009, 28). In terms of competition policy, this means that future competitors might have an innovative idea for developing a welfare-enhancing algorithm, but do not have a comparable amount of data to appropriately train the algorithm. This is worrying not least from an ordoliberal perspective of “complete competition,” which stresses the role of having as many competitors as possible to reduce political dependencies and to maximize the welfare benefits for society.

At first sight, the non-rivalrous nature of data *in theory* seems to imply that this concern should not be overrated, but *in practice* there are several problems with this commonly heard assertion. To begin with, the costs associated with the collection, storage, and regular updating of data pose a significant barrier to entry for smaller companies (Graef 2015, 488; Ezrachi and Stucke 2016, 176), and third parties can be excluded from using certain data, meaning that big data cannot be considered a pure public good (Schepp and Wambach 2016, 121). More generally, data differs according to its substitutability, complementarity, and scale (Hu *et al.* 2014, 652), which is why a thorough analysis requires looking at the data value chain and assessing the closeness of substitution between big datasets (Maier 2019). Finally, and most importantly, while some basic data such as name or address can indeed be acquired through data traders or web scraping, the specific information that Big Tech companies like Google or Facebook need to run their services is not easily purchased or obtained (Graef 2015, 483; Grunes and Stucke 2015, 7). Big Tech companies are extremely protective of their large datasets, which is why the AI community was enthusiastic when researchers in 2020 unveiled LAION-400M, currently the world's largest openly available dataset consisting of image and text pairings crawled from the internet. Open access to these data finally promised SMEs the opportunity to develop competitive products and services alongside the established giants. However, a recent paper found that models trained on such a massive, but unfiltered, dataset based on the general internet resulted in outcomes characterized by misogyny, violent pornography, and racist stereotypes (Birhane, Prabhu and Kahembwe 2021). One of the researchers involved in this study noted that there might be some technical fixes, but that they are "expensive and only possible for companies such as Google" (Heikkilä 2021). This implies that forcing SMEs to create their own large datasets through web scraping is no viable route to establish credible competitors to Big Tech, but rather risks increasing existing problems of algorithmic discrimination; a point to which we return below. Again, the resulting lack of future contestability and likely persistence of data-based economic power are key concerns in an ordoliberal competition framework. Based on these practical insights into today's digital economy, we argue that access to the unique datasets of Big Tech is "indispensable" to keep future markets across the whole economy open. They therefore constitute an "essential facility" in the sense of European competition law (Graef 2016), and modern ordoliberal competition policy should consequently rely on this doctrine or other types of regulation to enforce a mandated access to increase competition (section 5).

When pointing towards these potential negative effects on consumers' welfare through privacy infringements or crowding out of future welfare-enhancing competitors, it is important also to acknowledge the benefits of economies of scale and scope as well as the significant network effects of digital platforms, whose existence is, by now, widely recognized by competition lawyers (Crémer, de Montjoye and Schweitzer 2019; Furman *et al.* 2019; Stigler Center 2019). By allocating more customers and more data to the same company, algorithms will, in theory, work more smoothly and result in better products and services. Moreover, there might by syn-

ergies that promote innovation (Shapiro 2012, 365). These efficiencies would need to be balanced, for instance, with the data protection concerns mentioned above (Schepp and Wambach 2016, 124). However, without a clear standard for conducting this balancing act, the outcome will often reflect idiosyncratic opinions of the relevant competition authority (Tucker 2015, 4), which is certainly not in line with rules-based, ordoliberal competition policy.

However, taking these advantages in efficiency as a premise for starting the discussion misses the important point that we do not have viable *counterfactuals*. While a wide range of innovations certainly took place in the digital economy, there is no way of precisely determining whether there might have been innovations of an even higher quality or with less “selling” of data in a more decentralized economy (House Committee on the Judiciary 2020; Hubbard 2020). While the influential “inverted-U hypothesis” suggests that a certain level of concentration might even be beneficial for innovation (Aghion *et al.* 2005), as firms have enough funds as well as the incentives to innovate, other authors suggest that monopolists are not as dependent on innovating as firms in a competitive market (Ahn 2002; Shapiro 2012). A good example from the digital age is the smart speaker market, where the oligopolistic environment has hindered the emergence of more innovative, interoperable products (Fowler 2021). Given this ambiguity and complexity of the relationship between market concentration and innovation, it is crucial to develop a better intuition in which concrete digital markets one should expect overall welfare increases from more decentralization. Developing concrete counterfactuals is also a legal prerequisite, as most relevant competition law interventions targeting digital giants, such as mandating changes in their business models or products, require that anti-competitive effects like decreased innovation are not only established in the abstract (Ibáñez Colomo 2021).

3.3 A Broader Conception of Welfare: Vitalpolitik for the Digital Age

The harmful effects of modern Big Tech monopolies become even clearer when one extends the analysis beyond classic competition law variables such as price, quality, contestability of markets, or innovation. Much of the work in the gig economy is precarious, and digital tools are increasingly used by employers to monitor their employees’ every move (Zuboff 2019). In this way, digital platforms might erode the communal values of reciprocity and trust without which a market economy cannot function in the long run (Horton 2011, 500; see also McCarragher 2019; Lynn 2020). Moreover, the “attention economy” constructed by digital companies decreases the quality of our attention to the natural world and other human beings (Crary 2014; Odell 2019). Further abstracting from a narrow understanding of consumer welfare, one should note that the underlying mathematical models on which modern digital platforms are based are not only opaque and unregulated but, amongst other things, reinforce discrimination and inequality (O’Neil 2016). While the ordoliberals placed

significant weight on ensuring equal societal starting positions, as noted above, these contemporary models might enable a situation in which a student with a low-income background is refused a loan due to her zip code (see the examples in O’Neil 2016). Through the process of so-called “granulation,” i.e. the tailor-made adaptation of legal requirements to personality traits, this development now even threatens to take hold of the law itself (Sunstein 2013; Porat and Strahilevitz 2014). Overall, the downstream effects of large datasets as utilized by Big Tech companies are, due to biases in the underlying data, “likely to be devastating on marginalized communities” (Birhane, Prabhu and Kahembwe 2021, 14; see also Bullock 2021). From a legal perspective, this points to the need for “algorithmic neutrality” (Mehra 2016, 1326), protection against algorithm-based attribution (Broemel and Trute 2016, 55; Schweitzer, Fetzer and Peitz 2016, 12 f), and the prohibition of algorithms that allow companies to set prices for certain individuals above the competitive equilibrium price (Harrington 2018).

As global income and wealth inequality have recently reached their highest levels for the past half century (Volscho and Kelly 2012; Piketty 2014; Piketty and Zucman 2014; Saez and Zucman 2016; Milanovic 2016; Taylor and Ömer 2020), one might wonder whether this is related to the fact that there are only a few companies worldwide that dominate the digital economy (Ezrahi and Stucke 2020, 229; see also Stiglitz 2012). It is important to note that these companies often offer their services for “free,” which does help reduce inequalities especially in the Global South by improving access to much of human knowledge and news or by providing micro-banking and other financial apps. Certainly, links between digital giants and aggregate inequality are both more indirect and hypothetical than the algorithmic-driven personal inequality mentioned above, but recent work claims that the volume of market power, which GAFAM companies possess, contributes to both economy-wide inequality (Baker 2017) and wage inequality (Furman and Orszag 2015). Some have thus argued that the reduction of inequality should be adopted as an explicit antitrust goal (Baker and Salop 2015; Hsu 2018). While competition law might not be the best tool for targeting economic inequality in general (Crane 2016), the notable increases in the capital-labor ratio in technological industries with digital giants might indicate a suppression of wages and industrial concentration and suggest that competition law can be a useful complementary tool against inequality in the specific context of the digital economy (Hsu 2018). As ordoliberal lessons from the past would suggest, the economic success of digital incumbents goes hand in hand with important privileges such as private ownership of knowledge (Pagano 2014, 1420; Haskel and Westlake 2018), special protection against foreign competition (Pistor 2019, 79, 118), and the conscious breaking of the law (Pollman and Barry 2017), which are areas that might in certain contexts fall under the scope of competition law, too.

Thus, digital companies’ actions do not only transcend traditional competition measures like price but also affect more general welfare measures such as communal trust, quality of life, and equal starting opportunities. Clearly, such a broader perspective of consumer welfare is outside the current scope of a purely economics-based

competition law, but it could be included in a reformed approach to European competition law that conceptualizes “markets as being embedded in society” (in the sense of Gerbrandy 2019, 135). Again, such an approach could take inspiration from ordoliberal scholars like Rüstow and Röpke, who supported a market conception that upheld the communal values of reciprocity and trust which ultimately increase the efficiency of free markets (Wörsdörfer and Dethlefs 2016, 143; Slobodian 2018, 85; Küsters 2019a). This manifested itself in the ordoliberal concept of *Vitalpolitik* (“vital” or “organic policy”), which aimed to maintain a *humane* economy and encompassed all qualitative factors existing outside the market which influenced an individual’s quality of life, such as family, nature, working environment, and equal educational opportunities (Meier-Rigaud 2016, 12).

With *Vitalpolitik*, ordoliberals like Rüstow (1942, 282) and Röpke (1942, 158) sought to re-root markets in family-orientated, parochial, and de-centralized communities that maintained the vitality of an entrepreneurial society “in the face of a socially and morally disintegrating market logic” (Bonefeld 2013, 107–8). Again, this disintegration was, according to Röpke (1946, 3), triggered by Bismarck’s creation of a highly centralized Germany and further driven by the failures of the “weak” Weimar Republic and the subsequent Nazi period (section 2). Constructing a *Vitalpolitik* for the 21st century does not necessarily require the reinstatement of the bourgeois ideal of the 19th century, but allows us to question traditional institutions based on how they restrain or enable individual development (Dekker 2019, 219). Such “organic” social structures also reflect positively on economic structure, making it more robust and unsusceptible to economic shocks and depressions than concentrated markets (Röpke 1942, 5; see also Gregg 2010, 109), a point illustrated by the COVID-19 pandemic. The ordoliberal model of a decentralized way of life for products and consumers might even help combat climate change (Biebricher 2021, 72), a point discussed in section 5.

In sum, the socio-economic considerations discussed in this section further explain the vehement ordoliberal critique of concentrations of economic power. Monopolies not only violated their economic principle of “complete competition,” but also infringed on their vision of a communitarian society (Röpke 1987, 28) and resulted in a deterioration of trust in the market which prevented the integration of the community around it (Gerber 1994, 38). When thinking about current challenges in the digital age, such as Big Tech’s infringements of privacy, its hoarding of large and distinctive datasets that foreclose multiple future markets, its deliberate construction of “attention” and “surveillance” economies, and its potential to contribute to discrimination and inequality, one may benefit from complementing the “complete competition” model with the priorities suggested by the idea of *Vitalpolitik*. These broader considerations of consumer welfare could be weighed against the technical benefits of having large, centralized platforms, such as scale economies and network effects (Section 5).

4. Framing Competition

A final parallel, which pertains less to socio-economic structural features than discourse analysis, concerns the respective attitudes towards and understandings of competition itself, which in turn guide policy formulation and enforcement. The concept of competition is like “a sponge, which absorbs and reflects the moral, ethical, economic, political, and societal values of its time and place” (Stucke and Ezrachi 2020, 233). When facing growing economic concentration, political turmoil, and the social problems of their time, ordoliberals deviated from popular opinion by insisting on the essential role of competition in the working of markets and society (4.1). Today’s Big Tech entrepreneurs, numerous politicians, and even the European Commission itself have once again started, albeit from different angles, to explicitly question this framing, thereby reinstating negative perceptions of competition back into general discourse (4.2). To legitimize a stricter application and reform of competition law (section 5), it is necessary to draw on the more nuanced, positive understanding of *Leistungswettbewerb* as developed by ordoliberals as an antipode to contemporary discourse.

4.1 Views on Competition at the Time of the Early Ordoliberals

Ordoliberals’ views on the different economic, political, and social challenges described in previous sections were based on what they viewed as “proper” competition (Ptak 2004, 290). Eucken (1938) repeatedly argued that only “complete competition,” in which no corporate entity possessed the authority to coerce the action of others, would allow for favorable market conditions. Moreover, he differentiated between *Leistungswettbewerb* (“performance competition” or “competition on the merits”) and *Behinderungswettbewerb* (“prevention competition”), the former of which improved efficiency and performance and the latter impeding freedom on the market (Eucken 1949; Gerber 1998: 252–253; see also Vanberg 2004; Vatiello 2015). Through restructuring the market and stringent regulation, supporting *Leistungswettbewerb* would secure an equal distribution of market power as well as the prevention of unfair market advantages and thus symbolizes the ultimate expression of freedom on the market and beyond. Rather than merely ensuring the efficient allocation of scarce resources, as in the textbook conception of perfect competition, maintaining *Leistungswettbewerb* through competition law ensured general welfare and democracy, hence being elevated to a moral authoritative status.

At the time, this ordoliberal conception of competition differed significantly from erstwhile public discourse, which often legitimized anti-competitive behavior and concentration (Möschel 1989; Bertilorenzi 2016; Diemer 2019). This prevailing negative understanding of competition can be traced back to the Panic of 1873, which triggered two decades of stagnation known as the “Long Depression” and caused a

widespread loss in confidence in the capitalist system (Jürgens 1980, 59). Instead of thinking about the benefits of free competition, as described by classical national economists, competition was now considered “ruinous” or “cut-throat” and cartels were painted as “children of necessity,” a classical coinage that can be traced back to Friedrich von Kleinwächter, a contemporary of the famous Austrian economist Carl Menger (Weippert 1960; Kaiser and Schot 2014, 195 f). Reparations, currency chaos and currency fluctuations, and finally the Great Depression reinforced the contemporary view that controlling this turbulent economic environment exceeded the powers of private enterprise, and that competition therefore had to be curtailed; as a result, critics of cartels and monopolies remained in the minority (Jovović 2012, 240; Hederer and Priemel 2021, 102 f). The rising concentration of economic power in interwar Germany described earlier (section 2) was therefore supported by contemporary academics and business leaders – and not seen as a fundamental problem, as pointed out in ordoliberal theory. Though the criticism of unregulated competition was certainly justified, cartels were not the ideal alternative, as became clear as the twentieth century progressed.

4.2 Views on Competition in the Digital Age

The economic concentration brought about by the digital era and its detrimental effects on the political order, and some aspects of welfare as well, have been accompanied by attacks on the concept of competition. Just as in the interwar era, today’s Tech entrepreneurs negate the benefits of regulated free competition when claiming that “competition is for losers” or “allegedly necessary, supposedly valiant, but ultimately destructive” (Thiel and Masters 2015, 37). Peter Thiel, a co-founder of PayPal, actively promotes such discourse, and his prominence has been critically discussed recently by Chafkin (2021) and Runciman (2021). He advises aspiring entrepreneurs that “as you craft a plan to expand to adjacent markets, don’t disrupt: avoid competition as much as possible” (Thiel and Masters 2015, 57). His claim that capitalism and competition are opposites in the digital age (*ibid.*, 25) clearly deviates from the evidence discussed in section 3, which suggests, in line with ordoliberal theory, that there are market situations in the digital economy where more competition could actually increase the economic benefits accruing to consumers (e. g. Ezrachi and Stucke 2016).

The negative discourse on competition propagated by Thiel (2014), Andreessen (2011), and others goes beyond questions of economic efficiency and aims to shape the political order based on a de-politicized, “minimal government” concept (Thiel 2009). The locus of power is “hidden” in this political vision (as argued by Odell 2019, 49) because the latter is not based on the free will between individuals, but reduced to questions of technological design that ultimately reduce people to mechanical beings (*ibid.*, 52). Such a completely de-politicized order would bring about “radically different positions of power” (Menke 2015, 321) that do not equate with the ordo-

liberal vision of “complete competition” characterized by the very absence of power. Far from supporting absolute “competition without sovereignty,” ordoliberalism propagated a regulated political and economic order guided by *Leistungswettbewerb* that would secure freedom by removing private power from the economy (Lösch 2000; Ptak 2004, 95 ff; Bonefeld 2012). This contrasts with Thiel’s vision to manipulate the “rules of the game” in order to extract rents from the state (Runciman 2021), and especially confirms the early ordoliberal fear of “special interests” aiming to capture a “weak state.”

The 2008 financial crisis justifiably triggered further market-critical discourse among politicians and scholars alike that sought to reduce free market competition and called for a renewed understanding of the concept that included social and industrial imperatives (Wilks 2009; Klement 2015). This echoed the reactions of ordoliberal contemporaries in face of the Great Depression. Together with the desperate state of the European crisis economies, this led to increasing pressure on the European Commission to relax state aid rules (Hornkohl and Klooster 2020) and soften policy toward large cartels (McGowan and Morgan 2012). On the semantic side, this was and still is accompanied by increasing references made by the Commission to “fair competition” (Stucke and Ezrachi 2020, 252). This is not a pre-defined legal term and could be interpreted in many ways that are very different from the idea of *Leistungswettbewerb*. When recommending changes to the current approach to competition policy, it is necessary to keep this dynamic in mind, since it suggests that reform proposals need to be accompanied by a competition theory that can combine the formulation of strict competition rules with socio-economic considerations (section 5).

In line with this competition-critical discourse, politicians of large EU member states now hope to redesign the European competition norms in order to protect “national champions” (Räthling 2021, 98). The debate came to its climax in 2019 after the European Commission declined the proposed merger of the rail divisions of Siemens and Alstom, when 18 EU Member States issued a joint declaration calling for the European competition rules to be reformed. The French Minister of Economy and Finance, Bruno Le Maire, concluded that “European competition law is obsolete,” adding: “It dates back to the 20th century, but today it is confronted with the industrial giants of the 21st century” (Fockenbrock *et al.* 2019). Even the Commission itself is not completely immune to these ideas, as the increasing pressure from Chinese companies, which are subsidized or even owned by the government, renders it difficult to apply the European “rules of the game” of competition coherently (Zhang 2021). Again, it is important to keep this political context in mind when formulating reform proposals for European competition law, as the concerns about global competitiveness suggest that such reforms need to be accompanied by a concept of competition that describes the advantages of having a more decentralized market structure (section 5).

While coming from a different angle than the self-interested anti-competitive arguments of contemporary Tech entrepreneurs, the framing of competition as a mere tool for creating “fair” market outcomes or “national champions” likewise differs from ordoliberalism’s understanding of competition as *Leistungswettbewerb*, which aimed to minimize the influence of power on the economic and political order. As will be elaborated in the next section, it is this ordoliberal understanding of competition that can assist the formulation and implementation of key reforms that might be necessary for taming the digital giants of the 21st century.

5. Goal and Tools of a Modern Ordoliberal Competition Law

Since the implementation of a set of reforms in the early 2000s known as the “More Economic Approach” (MEA), the European Commission’s competition authority, DG COMP, has increasingly focused on protecting “consumer welfare” (Mestmäcker 2000; Möschel 2006, 365; Kerber and Schwalbe 2008, 13–4).² The consumer welfare standard has its intellectual origins in US antitrust law, where influential Chicago School members argued that monopolies should only be broken up if they raise prices for consumers, and not simply because they are too big or anti-competitive (Bork 1978; Posner 1979; for a critique: Fox 2009). Compared to the American “original,” European competition law is certainly much less rigid and goes beyond a policy on prices (Medema 2010). Much focus has been given to quality (e. g. merger cases in the hospital sector) and innovations (e. g. merger cases in the pharmaceutical industry), and the concept of “consumer” is understood in a broad sense. Nonetheless, in practice, most EU competition law cases still focus on the price interests of final consumers (according to Körber, Schweitzer and Zimmer 2019, 529) and the Commission now regularly stresses that competition is not protected for its own sake, but only if it leads to more favorable results for consumers than its limitation.

This section identifies two main reasons why, when tackling digital power, competition authorities should shift from a consumer welfare approach that gives much weight to efficiency considerations to a more structuralist, modernized ordoliberal approach that is based on the use of ordoliberal concepts like “complete competition,” “interdependence of orders,” and *Vitalpolitik*. Accompanying this would be a historical interpretation of the European competition norms and a renewed focus on structural remedies and per se rules (5.2). Explicitly connecting these reforms with ordoliberalism has advantages from a political, legal, and normative point of view (5.3).

² Welfare is the standard concept in economics for measuring performance in a given market, with consumer welfare being the aggregate surplus of all consumers.

5.1 Criticism

The first reason why competition authorities should shift away from a consumer welfare approach pertains to problems with measuring “consumer welfare” in the digital age and thus represents a model-internal criticism. The second reason is the inclusion of extra-economic concerns like Big Tech’s influence on the political order and society, as discussed in the previous sections, which would necessitate a broader paradigm change. Still, it needs to be acknowledged that in theory, a flexible, individual analysis of the concrete economic effects of certain market behaviors and constellations leads to greater case-by-case justice, while the consideration of efficiencies promises greater total welfare gains, especially in digital markets with scale and network effects. These legitimate concerns, which motivated the MEA in the first place, illustrate a more general conflict between legal certainty and ease of application on the one hand and economic efficiency and case-by-case justice on the other (Stones 2018). In this sense, the following remarks should not be understood in absolute terms, but rather as a call for a changing focal point.

First, the digital economy has certain implications for how the consumer welfare standard can be applied (Khan 2017). If the price of digital products or services comes close to zero and instead consumers “pay” with their personal data or attention (section 3), most people will not correctly assess the welfare change caused by the transaction (Stigler Center 2019, 45). For a long time, the current understanding of consumer welfare has not included data privacy, despite its inclusion in the design of remedies being necessary to ensure that the harms to privacy do not outweigh the benefits to consumers from more competition (Douglas 2020). Only recently has this started to change, e. g. with the *Bundeskartellamt*’s case against Facebook. In addition, the *sole* focus on consumer welfare takes attention away from the fact that low consumer prices might be part of a deliberate crowding out strategy by the dominant digital company (Khan 2017). As previously outlined, computer science literature suggests that the free services provided by today’s incumbents enables the large-scale collection of data that later renders it virtually impossible for other firms to offer competitive products (Küsters 2020b). Such behavior should be classified as *Behinderungsmisbrauch*. Finally, for many products and services in the digital age, perceptions of quality are hard to measure objectively (Brekke, Siciliani and Straume 2010, 471; OECD 2013, 121) and further distorted through the presence of “hyper-nudging” elements. Incremental lowering of this quality can probably not be detected by consumers (Ezrachi and Stucke 2016, 58 f). If “free” prices and “inherent” quality issues are difficult to analyze objectively in the digital age, competition law has to shift its focus from market outcomes, as emphasized by the MEA approach, to market structures, i. e. assessing which companies possess the power to distort these competition parameters in the first place. This changed agenda would correspond to the ordoliberal model of “complete competition,” where there is no power to distort prices or quality for a significant portion of products.

However, even if prices or quality could be more appropriately included in the consumer welfare standard model, this would not be enough to counter the power of digital monopolists and their effects on the political order and social lives as described in sections 2 and 3. In the current approach, these effects would be branded as external political or social values that should be excluded from proper competition law analysis. We thus have to move from a model-internal critique to an external perspective advocating for a paradigm change. While contemporary economics usually reduces social aspects to a question of material inequality, an alternative paradigm could treat economics as a form of social theory that captures both the material and the moral qualities of societies (Wagner 2019). As previously discussed, ordoliberal competition theory reflected, not least due to its interdisciplinary orientation, both dimensions and thus helps us move beyond a purely economics-based consumer welfare approach.

5.2 Goals and Measures of a Modernized Ordoliberal Competition Law Approach

Before turning to individual measures of a modernized ordoliberal competition law approach, one needs to formulate the underlying goal that should drive this law's application. In a classic article criticizing the consumer welfare standard, Pitofsky argued that it is "bad history, bad policy, and bad law to exclude certain political values in interpreting the antitrust laws" (Pitofsky 1979). Above all, he reinforced the argument that monopolies threatened democratic values – a stance that ordoliberals had already taken after their personal experiences during the late *Kaiserreich*, Weimar, and Nazi periods (section 2). Emphasizing the political dimension of competition law's task to create and protect complete competition, as ordoliberals have done, is not as new as the success of the Chicago School view would suggest (Katz 2020). Given that the relationship between monopoly and democracy has once again reached popular debate (Orbach 2019; Kraffert 2020) and that questions about the "proper" goal of competition law in the digital era have now also reached the Commission (Crémer, de Montjoye and Schweitzer 2019, 40 f), one could re-apply Pitofsky's argument and connect the application of competition law in the digital age with a political goal inspired by ordoliberalism. Specifically, this would mean minimizing the potential of digital giants to distort political discourse and democratic systems.

Formulating the European competition law's political objective in this ordoliberal way would re-align it with its legal-historical origins and subsequent application, since Gerber (1998; 1994) has convincingly shown how ordoliberal ideas have influenced the drafting and early application of EU competition law. His account has been supported by other authors (Küsters 1982; Maher 1999, 725; Kerber and Schwalbe 2015). This does not rule out certain US influences during the various drafting stages (Leucht 2009, 56). However, it is clear that these drafters, as well as early European competition officials, were not only guided by considerations of al-

locative or economic efficiency but also pursued distinctively European ideas of market integration and individual freedom (Chiriță 2014), which can be interpreted as a constitutional “choice” in favor of an ordoliberal regulatory framework (Mestmäcker 1965; Teubner 2014, 733). In light of this, it is not surprising that case law has rejected a sole orientation towards the consumer welfare standard (Ezrachi 2018) and that the meta-principles of free and undistorted competition still possess great normative relevance for EU law (Klement 2015). One does not need to resort to the recent critical US literature, as recently attempted by Kraffert (2020), to sensitize modern EU competition law to issues such as economic and political power of digital monopolists and a healthy competition order. As shown above, these are issues that were already at the heart of early ordoliberal theory, which in turn contributed to the foundation and early development of European competition law.³

So far, this discussion has been rather abstract, focusing on the normative underpinning of a modern European competition law approach that is able to challenge the power of digital giants. However, which *concrete* measures should be associated with such an ordoliberal approach? To begin with, structural remedies that are particularly popular in US discourse (Khan 2017, 710; Wu 2019) and are also mentioned as a possibility in the currently drafted Digital Markets Act are in line with the ordoliberal approach centered on an atomistic market structure. While a mandated breakup conflicts with the ordoliberal emphasis of the value of property rights, Böhm (1937, 101) made clear that “[i]n a conflict between freedom and order, the point of view of order has absolute priority.” Nevertheless, where structural remedies to increase the number of competitors are not feasible, or significantly welfare-reducing, market players with economic power should face legal consequences, as ordoliberals like Böhm ([1933] 2010, 20) have argued again and again (Nörr 1994, 103). From this perspective, economic or social responsibility is a consequence of the possession of power by the monopolist (*ibid.*, 58), which is reminiscent of the “special responsibility” to guarantee *Leistungswettbewerb* that EU competition law can place upon the market behavior of dominant companies, but not on smaller competitors (Hellwig 2006, 255 ff). Since today’s digital markets have clearly “tipped” (Geroski 2003, 152), digital giants should qualify for legal treatment in this category, which might legitimize behavioral interventions that alter digital monopolists’ business models or products (Ibáñez Colomo 2021).

Above all, our previous discussion of the data economy suggests this special responsibility of Big Tech firms should be related to their possession of large datasets. While we have noted that data is not always an indispensable or rivalrous input, our discussion of foreclosure incentives and network effects made it clear that Big Data

³ This argument has been developed further in the PhD project of one of the authors. See Küsters, Anselm. 2022. *The Making and Unmaking of Ordoliberal Language: A Digital Conceptual History of European Competition Law*. Doctoral Thesis, University of Frankfurt. Forthcoming in the series “Studien zur europäischen Rechtsgeschichte”, published by Klostermann (2023). Accessed Sep. 5, 2022. <https://www.lhlt.mpg.de/phd-project/making-and-unmaking-of-ordoliberal-language?c=2117134>.

can be an insurmountable barrier to entry (section 3). Since the data used could be a unique input needed to run certain machine learning applications, a certain big dataset can be compared to a knowledge monopoly that may be an essential component to entering a certain market (Hoffmann and Johannsen 2019, 56, fn. 169). Since exclusive information can thus amount to an “essential facility,” the same economic and legal considerations apply (Graef 2016; Lao 2009). As a result, it should therefore be possible to impose obligations on an undertaking whose data are highly important for enabling or protecting *Leistungswettbewerb* to share them under objective, transparent, and non-discriminatory conditions, either through the classic “essential facility” doctrine or the specific “gatekeepers” rules that are currently being envisioned as part of the Digital Markets Act (Vezzoso 2021). In line with ordoliberal theory, European competition law would thus impose a positive duty on a dominant company to help its competitors to compete effectively. Since this is a drastic interference with commercial freedom and can lead to a free-rider problem (Nazzini 2015, 308 f), such mandated data access should be granted in cases of non-exclusive data only when “data asymmetry” and a “relative barrier to entry” are additionally present (Hoffmann and Johannsen 2019, 60).

This shift towards a more market-based, structuralist framework could be complemented with more bright-line rules to simplify enforcement, corresponding to the ordoliberal emphasis on per se rules in competition law (Mestmäcker 1965; Hoppmann 1967). These rules minimize discretionary space in the law’s application, reduce the burden of proof, and provide legal certainty to businesses (Stones 2018, 220). Besides addressing the dual-role problem of platforms both owning and acting as a participant in the marketplace, clear per se rules could help structure markets with respect to mergers or “killer-acquisitions” in the digital economy. For example, not a single one of the over 400 acquisitions GAFAM made in total between 2008–18 was blocked by competition authorities (Furman *et al.* 2019, 12). A recent in-depth analysis of the 90 acquisitions completed by Facebook, including the widely criticized acquisitions of Instagram and WhatsApp, shows that the current competition approach is ill-equipped to handle such “killer-acquisitions” (Glick and Ruetschlin 2019). It also argues that an empirically tractable structural approach to potential competition mergers, not unlike the ordoliberal one, could have put these acquisitions into question, or even prevented them from happening (*ibid.*). Another reason why a more form-based approach based on per se rules, similar to the design of early European competition law (Joliet 1967), seems appropriate in the digital age is that the current MEA approach would require a balancing review of the economic effects of individual algorithms by competition authorities, which, in practice, is impossible to achieve (Schwalbe 2018, 599).

Nevertheless, when formulating such bright-line rules and categories, their innovation-inhibiting effects need to be taken into account (Bernhardt and Dewenter 2020, 335–38). If these effects and the lowered accuracy of the decision in individual cases is outweighed by increased legal certainty and better possibilities for the law’s application in the digital age, per se rules might be regarded as appropriate tool

(Hellwig 2006, 261). At the same time, retaining efficiency concerns in a *limited* way is certainly sensible, not least since a literal interpretation of Art. 101 (3) TFEU suggests that this is the only factor which can be used to grant exemption (Monti 2002, 1092). However, efficiency should no longer be the focal point of competition law, as it was during the heyday of the MEA.

More generally, the idea of *Ordnungspolitik* as setting the “rules for the game” and the ordoliberal notion of the “interdependence of orders” suggest that this modified approach taken up by European competition law should be complemented with other policy tools that adapt the institutional framework for the market economy and society to the new economic and technological conditions of the digital economy but are still guided by the ordoliberal understanding of competition. An example of this would be revitalizing local journalism through the use of a refundable tax credit (Waldman 2020), since ordoliberal theory emphasizes “how the power to control one’s own news and cultural consumption should have empowering effects” (Dekker 2019, 221). Another example concerns the Commission’s efforts to tackle climate change. From a free market perspective, competition would be the right stimulus for inducing sustainability efforts (Schinkel and Treuren 2020). While maintaining the integrity of relative prices as the main coordinative mechanism is certainly important from an ordoliberal perspective, the notions of *Vitalpolitik* and “interdependence of orders” suggest that the Commission needs to go beyond purely economic evidence when evaluating proposals for green antitrust or similar measures.⁴ From an ordoliberal perspective, the perceived protectionism-induced disintegration of the global market into regional or even national markets in the present day becomes particularly damaging to a society. This is another parallel to the 1930s and 1940s context of the early ordoliberals, whose texts on competition theory also criticized that the “exclusion of foreign competition through highly-protectionist trade policy has in many countries given a major boost to the development of monopolies” (Eucken cited in Biebricher and Vogelmann 2017, 93).

5.3 Why These Reforms Should Be Connected to Ordoliberal Theory

Explicitly connecting these various reform proposals with ordoliberal thought, as attempted above, has advantages from a political, a legal, and a normative point of view. First, uniting these heterogenous, scattered reform proposals under an ordoliberal understanding of competition that centers around the issue of economic and political power will ensure that these reforms are understood as a coherent set of

⁴ One of the authors is currently working on as PhD project that aims to investigate the relationship between ordoliberal theory and green politics. Oakes, “A History of the Eco-Social Market Economy.” For the view that liberalism can provide a constructive framework through which climate change responses can be understood, see Novak 2019.

measures that do not threaten the integrity of EU competition law. As previously discussed, today's digital giants raise a plethora of problematic issues that only a broad understanding of competition law as a fundamental "economic constitution," in the ordoliberal sense, can account for.⁵ Furthermore, the fact that this set of measures is understood as rule-bound is particularly important in a time when trade tensions in the globalized economy raise the suspicion that the application of stringent EU competition law may be politically motivated.⁶ Ordoliberalism with its focus on rule-bound political measures is predestined to address this skepticism, but to do so, it needs to be defined precisely (in terms of vocabulary and common policy positions) in order to avoid an overly broad conception of ordoliberalism that might ultimately lead to an arbitrary collection of reforms.

Moreover, linking these reform proposals with the ordoliberal background of EU competition law's genesis might be helpful in securing the legal acceptance of these measures. Initially, the European Courts adopted a "teleological" approach that interpreted the competition norms in such a way that furthered the integrationist goals of the Treaties. As a cause of this, the Court has for a long time ignored arguments of legislative history and has not utilized a "historical interpretation," as is common in German constitutional law. Nevertheless, this seems to be changing, albeit at a slow pace (Schönberg and Frick 2003, 149; Lenaerts and Gutiérrez-Fon 2013, 21). In its case law, the Court has stressed that its interpretation cannot be arbitrary but needs to reflect the intention of the parties to the Treaties and the *ratio legis* of the text, which is also relevant for competition law considerations (Akman 2009, 272). This opens up the possibility for legitimating a reformed competition policy approach, as previously discussed, through appeal to the norms' historic origins in ordoliberalism. As the literature surveyed above suggests, the European competition norms *can* be applied with an ordoliberal goal, i. e. the intent of the drafters provides both the Commission and the Courts with strong grounds to accept an ordoliberal assessment of power in the digital age – should they wish to do so. The need for such a legal-historical legitimation becomes particularly clear when considering the fate of the earlier MEA reforms, whose sole focus on consumer welfare was later rejected by the Court (Ezrachi 2018).

A final, admittedly normative, point concerns the observation that ordoliberalism has been an influential and successful narrative in the German discourse for a long time, not least since it shaped inclusive expressions such as "Social Market Economy" or *Ordnungspolitik* (Kutzner 2019; Küsters 2019b). By contributing to a similarly successful narrative on the EU level that emphasizes European competition law's political and societal benefits, the inclusion of references to ordoliberal thought in competition law reforms might help to counter current negative perceptions of

⁵ This term originated in the writings of Schmitt but was employed in a specific ordoliberal way by Böhm and later Mestmäcker, who then transferred the concept to the European level (Slobodian 2018).

⁶ This is a prominent fear in the US, which goes back to Baumol and Ordovery (1985).

competition (as discussed in section 4) and of the EU as an “imperium” or a “technocracy” (Junge 2018a; 2018b; Thiele 2019). Again, this is also helped by the promotion of simple per se rules in the ordoliberal sense, since these can be easily understood by the general public. This is a welcome contrast to the extremely technical, but nevertheless normatively charged, calculations favored by Chicago School members or MEA proponents. In a further difference to the MEA approach, the application of clear per se rules also reduces susceptibility to lobbyism, which is an increasing problem in the field of European digital politics (Corporate Europe Observatory and LobbyControl 2021) and a further bone of contention in the public eye.

6. Conclusion

In early October 2021, Frances Haugen, a Facebook whistleblower, told the US Congress that Facebook’s platforms “stoke division and weaken our democracy,” detailing how these platforms deliberately used algorithms that encouraged the spread of divisive misinformation for commercial reasons. In a bizarre coincidence, the company suffered from a global network outage on the same day. Consumers whose Facebook account were suddenly inaccessible could not switch to other digital means of communication such as WhatsApp or Instagram, as both applications are owned by Facebook as well. While for some this might have been a mere inconvenience, there are many consumers, especially in developing countries, for whom these applications are their only means of communicating with relatives, accessing the internet, or transferring money. While it is important to keep in mind that there are valid economic reasons for concentration in the digital age, such as economies of scale and network effects, this recent story reinforces the main point of this study, namely that overall, the current digital market structure is too centralized and that its influence transcends the economic sphere.

To remedy this situation, one might look at the solutions that the early ordoliberals developed in the realm of competition law based on their experiences in the interwar period, as they faced similar problems and similarly powerful “giants.” Comparing the historical circumstances in which ordoliberalism emerged with the socio-economic trends of our present age, this study has identified several parallels. These parallels pertain to how the growth of data-based economic concentration leads to negative spillovers onto the political order, certain aspects of consumer welfare, the contestability of future markets, and the prevailing conception of competition itself. Assuming that a modern form of ordoliberalism can play a positive role as a critical, stimulating theory for the 21st century (following Dold 2021), this study has argued that the use of ordoliberal concepts such as “complete competition,” “interdependence of orders,” and *Vitalpolitik*, a renewed focus on structural remedies and per se rules, and a historical interpretation of the European competition norms might contribute to a reformed approach to competition policy that can address power in the digital age more effectively.

There are some recent rhetorical and conceptual changes that could support these reforms. For instance, in a speech at the Munich Security Conference, Margrethe Vestager (2020), the current EU Competition Commissioner, told the audience: “To preserve our social market economy, it will be fundamental to ensure that the key decisions that shape our digital future are taken in our European democracy, and not by authoritarian governments or corporate board rooms.” This evokes both the ordoliberal model of a social market economy as well as the focus of ordoliberal competition policy on minimizing the effect of concentrated power on the political order. In another recent speech, Vestager (2021) noted that strong competition policy can also foster “social cohesion” and help combat “widening inequalities,” echoing the welfare-considerations outlined above and the notion of *Vitalpolitik*. At the time of writing, the Commission indeed presented two proposals, the Digital Services Act and the Digital Markets Act, that include new rules for digital platforms, promise to ensure that small businesses can freely and fairly compete online, and echo the “restorative” remedies that are suggested by the ordoliberal focus on market structure. Particularly the proposed data-related obligations for gatekeepers reflect a “sophisticated understanding of the extensive data governance/regulatory ‘plumbing’ necessary to ensure open and fair markets in the digital sector” (Vezzoso 2021, 394). This is in line with the reforms proposed by this study, namely clear per se rules and special obligations for Big Tech companies to regulate their privileged market position in line with the ordoliberal understanding of competition.

On a more general level, this study has dealt with two different views on how economic progress can be achieved: on the one hand, industrialists and economists in Weimar, just as modern Big Tech entrepreneurs and certain politicians and scholars, believed that competition is ultimately destructive, and that real progress depends on centralization, monopoly power, or industrial policy. On the other hand, ordoliberal scholars and modern critics like Odell (2019) emphasize the need for decentralization, which in turn requires a positive understanding of competition and freedom. Similarly, the two lines of argumentation differ with respect to their attitude towards the role of technology. For Thiel, “technology is the one way for us to escape competition in a globalizing world” (Thiel and Masters 2015, 144). Ordoliberals, by contrast, would have probably argued that “[t]echnology can be harnessed to facilitate local interactions” (following Stross 2012). In this perspective, technology might actually help decentralize the economy, as Röpke and Rüstow envisioned it, for instance through a mandated access to the unique and distinctive large datasets accumulated by GAFAM. Ultimately, shifting the balance towards a more decentralized digital economy might also enhance, rather than endanger, the economic system’s overall dynamic and adaptive efficiency, as Facebook’s recent problems illustrate.

Many of the developments discussed in this study, such as heightened concentration and market power, inequality, and reduced welfare, have been intensified by the COVID-19 pandemic. While many SMEs were struggling to stay afloat during lockdowns, dominant corporations such as Amazon profited. At the same time, the resilience of centralized supply chains became increasingly undermined. These de-

velopments are not irreversible. In order to tame the economic, political, and social power of digital giants, the numerous studies that are currently being drafted for reforming European competition law might also take inspiration from the law's historic origins and investigate whether the specific historic lessons developed by ordoliberal scholars in the interwar period could be productively repurposed for today's challenges. Of course, competition is not a goal in itself, and the rigorous enforcement of competition law along the lines suggested by the fairly static "complete competition" model should not end in stasis – challenges like climate change make clear that the world needs innovative companies more than ever. The task is to find the right middle ground and it is in this sense that this study has called for a re-orientation from economic efficiency considerations and consumer welfare trade-offs, as described in the MEA reforms, to a more structuralist, modernized ordoliberal competition approach that might be better suited for the digital age.

References

- Abelshauer, W. 1996. "Erhard oder Bismarck? Die Richtungsentscheidung der deutschen Sozialpolitik am Beispiel der Reform der Sozialversicherung in den Fünfziger Jahren." *Geschichte und Gesellschaft: Zeitschrift für Historische Sozialwissenschaft* 22 (3): 376–92.
- Abelshauer, W. 2009. *Des Kaisers neue Kleider? Wandlungen der Sozialen Marktwirtschaft*. Munich: RomanHerzogInstitut.
- ACCC. 2019. "Digital Platforms Inquiry: final report." Accessed August 15, 2022. <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>.
- Aghion, P., N. Bloom, R. Blundell, R. Griffith, and P. Howitt. 2005. "Competition and Innovation: An Inverted-U Relationship." *Quarterly Journal of Economics* 120 (2): 701–28.
- Ahn, S. 2002. *Competition, Innovation and Productivity Growth: A Review of Theory and Evidence*. Economics Department Working Papers No. 317. Paris, OECD Publishing.
- Akman, P. 2009. "Searching for the Long-Lost Soul of Article 82 EC." *Oxford Journal of Legal Studies* 29 (2): 267–303.
- Andreessen, M. 2011. "Why software is eating the world." *Wall Street Journal*, August 20, 2011. <https://www.wsj.com/articles/SB10001424053111903480904576512250915629460>.
- Autorité de la concurrence/Bundeskartellamt. 2016. "Competition Law and Data." Accessed April 16, 2021. https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2.
- Autorité de la concurrence/Bundeskartellamt. 2019. "Algorithms and Competition." Accessed April 16, 2021. https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Algo_rithms_and_Competition_Working-Paper.pdf?__blob=publicationFile&v=5.
- Bak-Coleman, J. B., M. Alfano, W. Barfuss, C. T. Bergstrom, M. A. Centeno, I. D. Couzin, J. F. Donges, M. Galesic, A. S. Gersick, etc. 2021. "Stewardship of global collective behavior." *Proceedings of the National Academy of Sciences* 118 (27): 1–10.

- Baker, J. B. 2017. "Market power in the U.S. economy today." Accessed October 4, 2021. <https://equitablegrowth.org/market-power-in-the-u-s-economy-today/>.
- Baker, J. B. and S. C. Salop. 2015. "Antitrust, Competition Policy, and Inequality." Accessed August 15, 2022. <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=2474&context=facpub>.
- Banko, M. and E. Brill. 2001. "Scaling to Very Very Large Corpora For Natural Language Disambiguation." Accessed August 15, 2022. <https://aclanthology.org/P01-1005.pdf>.
- Bartels, C. 2019. "Top Incomes in Germany, 1871–2014." *Journal of Economic History* 79 (3): 669–707.
- Baumol, W. J. and J. A. Ordover. 1985. "Use of Antitrust to Subvert Competition." *Journal of Law & Economics* 28 (2): 247–65.
- Beater, A. 1995. *Nachahmen im Wettbewerb: Eine rechtsvergleichende Untersuchung zu § 1 UWG*. Tübingen: J. C. B. Mohr (Paul Siebeck).
- Bernhardt, L. and R. Dewenter. 2020. "Collusion by code or algorithmic collusion? When pricing algorithms take over." *European Competition Journal* 16 (2–3): 312–42.
- Bertilorenzi, M. 2016. "Legitimising Cartels: The joint roles of the League of Nations and of the International Chamber of Commerce." In *Regulating Competition: Cartel registers in the twentieth-century world*, edited by S. Fellman and M. Shanahan, 30–47. Abingdon: Routledge.
- Biebricher, T. 2021. *Die politische Theorie des Neoliberalismus*. Berlin: Suhrkamp.
- Biebricher, T. and F. Vogelmann, eds. 2017. *The Birth of Austerity: German Ordoliberalism and Contemporary Neoliberalism*. London: Rowman & Littlefield.
- Böhm, F. (1933) 2010. *Wettbewerb und Monopolkampf: Eine Untersuchung zur Frage des wirtschaftlichen Kampfrechts und zur Frage der rechtlichen Struktur der geltenden Wirtschaftsordnung*. Baden-Baden: Nomos.
- Böhm, F. 1937. *Die Ordnung der Wirtschaft als geschichtliche Aufgabe und rechtsschöpferische Leistung*. Stuttgart: Kohlhammer.
- Bond, R., C. J. Fariss, J. J. Jones, A. D. I. Kramer, C. Marlow, J. E. Settle, and J. H. Fowler. 2012. "A 61-million-person experiment in social influence and political mobilization." *Nature* 489 (7415): 295–98.
- Bonefeld, W. 2012. "Freedom and the Strong State: On German Ordoliberalism." *New Political Economy* 17 (5): 633–56.
- Bonefeld, W. 2013. "Human economy and social policy: On ordo-liberalism and political authority." *History of Human Sciences* 26 (2): 106–25.
- Bork, R. H. 1978. *The Antitrust Paradox: A Policy at War with Itself*. New York: Basic Books.
- Brekke, K. R., L. Siciliani, and O. R. Straume. 2010. "Price and quality in spatial competition." *Regional Science and Urban Economics* 40 (6): 471–80.
- Broemel, R. and H.-H. Trute. 2016. "Alles nur Datenschutz?" *Berliner Debatte Initial* 27 (4): 50–65.

- Bullock, B. B., F. L. Nascimento, and S. A. Doore. 2021. "Computing Ethics Narratives: Teaching Computing Ethics and the Impact of Predictive Algorithms." *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education (SIGCSE '21)*: 1020–26.
- Chafkin, M. 2021. *The Contrarian: Peter Thiel and Silicon Valley's Pursuit of Power*. New York: Penguin Press.
- Chiriță, A. D. 2014. "A Legal-Historical Review of the EU Competition Rules." *International & Comparative Law Quarterly* 63 (2): 281–316.
- Commun, P. and S. Kolev, eds. 2018. *Wilhelm Röpke (1899–1966): A Liberal Political Economist and Conservative Social Philosopher*. Cham: Springer.
- Connor, J. M. 2008. *Global Price Fixing*. Berlin: Springer Verlag.
- Corporate Europe Observatory and LobbyControl. 2021. "The Lobby Network: Bit Tech's Web of Influence in the EU." Accessed October 4, 2021. <https://corporateeurope.org/en/2021/08/lobby-network-big-techs-web-influence-eu>.
- Crane, D. A. 2016. "Antitrust and Wealth Inequality." *Cornell Law Review* 101 (5): 1171–228.
- Crane, D. A. 2018. "Antitrust and Democracy: A Case Study from German Fascism." Accessed January 26, 2022. https://repository.law.umich.edu/cgi/viewcontent.cgi?article=1266&context=law_econ_current.
- Crane, D. A. 2020. "Fascism and Monopoly." *Michigan Law Review* 118 (7): 1315–70.
- Crary, J. 2014. *24/7: Late Capitalism and the Ends of Sleep*. London: Verso.
- Crémer, J., Y.-A. de Montjoye, and H. Schweitzer. 2019. *Competition policy for the digital era*. Luxembourg: Publications Office of the European Union.
- De Loecker, J., J. Eeckhout, and G. Unger. 2020. "The Rise of Market Power and the Macroeconomic Implications." *Quarterly Journal of Economics* 135 (2): 561–644.
- Dekker, E. 2019. "Is There an Agenda of Neoliberal Emancipation?" *Journal of Contextual Economics—Schmollers Jahrbuch* 139 (2–4): 213–23.
- Diemer, A. 2019. "The Colloque Walter Lippmann: How to Rebuild the Foundations of Liberalism?" *Journal of Contextual Economics—Schmollers Jahrbuch* 139 (2–4): 225–41.
- Dietzfelbinger, D. 1998. *Soziale Marktwirtschaft als Wirtschaftsstil: Alfred Müller-Armacks Lebenswerk*. Gütersloh: Christian Kaiser.
- Díez, F. J., D. Leigh, and S. Tambunlertchai. 2018. *Global Market Power and its Macroeconomic Implications*. IMF Working Paper No. 2018 (137).
- Dold, M. F. and T. Krieger. 2019. "The 'New' Crisis of the Liberal Order: Populism, Socio-economic Imbalances, and the Response of Contemporary Ordoliberalism." *Journal of Contextual Economics—Schmollers Jahrbuch* 139 (2–4): 243–58.
- Dold, M. F. and T. Krieger. 2021. "The ideological use and abuse of Freiburg's ordoliberalism." *Public Choice*. Accessed April 16, 2021. <https://doi.org/10.1007/s11127-021-00875-0>.
- Douglas, E. 2020. "Monopolization Remedies and Data Privacy." *Virginia Journal of Law and Technology* 24 (2): 1–88.
- Eichengreen, B. J. 2015. *Hall of Mirrors: The Great Depression, the Great Recession, and the Uses – and Misuses – of History*. New York: Oxford University Press.

- Epstein, R. 2014. "How Google could end democracy." *U.S. News & World Report*, June 9, 2014. <https://www.usnews.com/opinion/articles/2014/06/09/how-googles-search-rankings-could-manipulate-elections-and-end-democracy>.
- Eucken, W. 1932. "Staatliche Strukturwandlungen und die Krisis des Kapitalismus." *Weltwirtschaftliches Archiv* 36 (2): 297–321.
- Eucken, W. 1938. *Nationalökonomie – Wozu?* Leipzig: Felix Meiner Verlag.
- Eucken, W. (1940) 1989. *Grundlagen der Nationalökonomie*. Berlin: Springer Verlag.
- Eucken, W. 1949. "Die Wettbewerbsordnung und ihre Verwirklichung." *ORDO – Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* 2: 1–99.
- Eucken, W. (1952) 1955. *Grundsätze der Wirtschaftspolitik*. Tübingen: J.C.B. Mohr (Paul Siebeck).
- Ezrachi, A. 2018. "EU Competition Law Goals and the Digital Economy." Accessed April 16, 2021. https://www.beuc.eu/publications/beuc-x-2018-071_goals_of_eu_competition_law_and_digital_economy.pdf.
- Ezrachi, A. and M.E. Stucke. 2016. *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy*. Cambridge: Harvard University Press.
- Falch, M. 2021. "Surveillance capitalism – a new techno-economic paradigm?" Accessed August 22, 2022. <https://www.econstor.eu/bitstream/10419/238019/1/Falch.pdf>.
- Fockenbrock, D., D. Heide, A. Höpner, and T. Hoppe. 2019. "Siemens und Alstom: Zug-Fusion wird zum Testfall für Europa." *Handelsblatt*, January 11, 2019. <https://www.handelsblatt.com/politik/international/wettbewerb-mit-china-siemens-und-alstom-zug-fusion-wird-zum-testfall-fuer-europa/23849458.html?ticket=ST-8134970-ZBzdeKlJ3EoFvPdaS1sR-ap6>.
- Fowler, G. A. 2021. "How Big Tech monopoly made smart speakers dumber." *Washington Post*, September 29, 2021. <https://www.washingtonpost.com/technology/2021/09/29/smart-home-monopoly/>.
- Fox, E. M. 2009. "The Efficiency Paradox: How the Chicago School Overshot the Mark: The Effect of Conservative Economic Analysis on U.S. Antitrust." *NYU Law and Economics Research Paper* 09 (26): 77–101.
- Furman, J., D. Coyle, A. Fletcher, D. McAuley, and P. Marsden. 2019. *Unlocking Digital Competition: Report of the Digital Competition Expert Panel*. London: HM Treasury.
- Furman, J. and P. Orszag. 2015 "A Firm-Level Perspective on the Role of Rents in the Rise of Inequality." In *Toward a Just Society: Joseph Stiglitz and Twenty-First Century Economics*, edited by M. Guzman, 19–47. New York: Columbia University Press.
- Galofré-Vilà, G., C. M. Meissner, M. McKee, and D. Stuckler. 2021. "Austerity and the Rise of the Nazi Party." *Journal of Economic History* 81 (1): 81–113.
- Gane, N. 2012. *Max Weber and Contemporary Capitalism*. Hampshire: Palgrave Macmillan.
- Gerber, D. J. 1994. "Constitutionalizing the Economy: German Neo-liberalism, Competition Law and the 'New' Europe." *American Journal of Comparative Law* 42 (1): 25–84.
- Gerber, D. J. 1998. *Law and Competition in Twentieth Century Europe: Protecting Prometheus*. New York: Oxford University Press.

- Gerbrandy, A. 2019. "Rethinking Competition Law within the European Economic Constitution." *Journal of Common Market Studies* 57 (1): 127–42.
- Gerroski, P. A. 2003. "Competition in Markets and Competition for Markets." *Journal of Industry, Competition and Trade* 3 (3): 151–66.
- Glick M. and C. Ruetschlin. 2019. *Big Tech Acquisitions and the Potential Competition Doctrine: The Case of Facebook*. Institute for New Economic Thinking Working Paper No. 104.
- Goldschmidt, N., E. Grimmer-Solem, and J. Zweynert. 2016. "On the Purpose and Aims of the Journal of Contextual Economics." *Schmollers Jahrbuch–Journal of Contextual Economics* 136 (1): 1–14.
- Gómez León, M. and H. J. de Jong. 2019. "Inequality in turbulent times: income distribution in Germany and Britain, 1900–50." *Economic History Review* 72 (3): 1073–98.
- Graef, I. 2015. "Market Definition and Market Power in Data: The Case of Online Platforms." *World Competition: Law and Economics Review* 38 (4): 473–505.
- Graef, I. 2016. "Data as Essential Facility: Competition and Innovation on Online Platforms." Doctor of Laws diss., KU Leuven.
- Gregg, S. 2010. *Wilhelm Röpke's Political Economy*. Cheltenham: Edward Elgar.
- Grossekettler, H. 1989. "On designing an economic order. The contributions of the Freiburg School." In *Perspectives on the History of Economic Thought*, Vol. 2, edited by D. Walker, 38–84. Aldershot: Edward Elgar.
- Grunes, A. P. and M. E. Stucke. 2015. *No Mistake about It: The Important Role of Antitrust in the Era of Big Data*. University of Tennessee Legal Studies Research Paper No. 269.
- Gutiérrez, G. and T. Philippon. 2017. *Declining Competition and Investment in the U.S.* NBER Working Paper 23583. National Bureau of Economic Research.
- Gutiérrez, G. and T. Philippon. 2018. *How EU markets became more competitive than US markets: a study of institutional drift*. NBER Working Paper 24700. National Bureau of Economic Research.
- Halevy, A., P. Norvig, and F. Pereira. 2009. "The Unreasonable Effectiveness of Data." *IEEE Intelligent Systems* 24 (2): 8–12.
- Harrington, J. E. 2018. "Developing Competition Law for Collusion By Autonomous Artificial Agents." *Journal of Competition Law and Economics* 14 (3): 331–63.
- Haskel, J. and S. Westlake. 2018. *Capitalism without Capital*. Princeton: Princeton University Press.
- Hederer, F. and K. C. Priemel. 2021. "In der Schwebe. Markt, Staat und Wettbewerb in Deutschland zwischen 1918 und 1948." *Historische Zeitschrift* 313 (1): 89–123.
- Heller, N. 2020. "Is Venture Capital Worth the Risk?" Accessed April 16, 2021. <https://www.newyorker.com/magazine/2020/01/27/is-venture-capital-worth-the-risk>.
- Hellwig, M. 2006. "Effizienz oder Wettbewerbsfreiheit? Zur normativen Grundlegung der Wettbewerbspolitik." In *Recht und spontane Ordnung. Festschrift für Ernst-Joachim Mestmäcker zum achtzigsten Geburtstag*, edited by C. Engel and W. Möschel, 231–68. Baden-Baden: Nomos.

- Heuß, E. 1989. “‘Die Grundlagen der Nationalökonomie’ vor 50 Jahren und heute.” *ORDO–Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* 40: 21–30.
- Hoffmann, J. and G. O. Johannsen. 2019. *EU-Merger Control in Big Data-Related Mergers*. Max Planck Institute for Innovation & Competition Research Paper 19 (05). Max Planck Institute for Innovation and Competition.
- Hoffmann, S.-L. 2020. “Reinhart Koselleck’s theory of history for a world in crisis.” Accessed April 16, 2021. <https://aeon.co/essays/reinhart-kosellecks-theory-of-history-for-a-world-in-crisis>.
- Hong, Y.-S. 1998. *Welfare, Modernity, and the Weimar State*. Princeton: Princeton University Press.
- Hoppmann, E. 1967. “Wettbewerb als Norm der Wettbewerbspolitik.” *ORDO–Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* 18: 77–94.
- Horn, K., S. Kolev, D. M. Levy, and S. J. Peart, eds. 2019. “Liberalism in the 21st Century: Lessons from the Colloque Walter Lippmann.” *Journal of Contextual Economics–Schmollers Jahrbuch* 139 (2): 177–88.
- Hornkohl, L. and J. v. Klooster. 2020. “With Exclusive Competence Comes Great Responsibility: How the Commission’s Covid-19 State Aid rules Increase Regional Inequalities within the EU.” Accessed April 16, 2021. <https://doi.org/10.17176/20200430-013144-0>.
- Horton, T. J. 2011. “The Coming Extinction of *Homo Economicus* and the Eclipse of the Chicago School of Antitrust: Applying Evolutionary Biology to Structural and Behavioral Antitrust Analyses.” *Loyola University Chicago Law Journal* 42 (3): 469–522.
- House Committee on the Judiciary. 2020. “Proposals to Strengthen the Antitrust Laws and Restore Competition.” Accessed April 16, 2021. <https://www.youtube.com/watch?v=-jXAdjieTo&feature=youtu.be&t=3887>.
- Hsu, S.-L. 2018. “Antitrust and Inequality: The Problem of Super-Firms.” *Antitrust Bulletin* 63 (1): 104–12.
- Hu, H., Y. Wen, T. -S. Chua, and X. Li. 2014. “Toward Scalable Systems for Big Data Analytics: A Technology Tutorial.” *IEEE Access* 2: 652–87.
- Hubbard, S. 2020. *Monopolies Suck: 7 Ways Big Corporations Rule Your Life and How to Take Back Control*. New York: Simon & Schuster.
- Huszár, F., S. I. Ktena, C. O’Brien, L. Belli, A. Schlaikjer, and M. Hardt. 2022. “Algorithmic amplification of politics on Twitter.” Accessed January 6, 2022. <https://www.pnas.org/content/119/1/e2025334119>.
- Ibáñez Colomo, P. 2021. “Product Design and Business Models in EU Antitrust Law.” Accessed October 4, 2021. <http://dx.doi.org/10.2139/ssrn.3925396>.
- Jensen-Eriksen, N. 2020. “Creating clubs and giants: How competition policies influenced the strategy and structure of Nordic pulp and paper industry, 1970–2000.” *Business History* 62 (5): 763–81.
- Joerges, C. 1972. “Die Klassische Konzeption des Internationalen Privatrechts und das Recht des Unlauteren Wettbewerbs.” *Rabel Journal of Comparative and International Private Law* 36 (3): 421–91.

- Joliet, R. 1967. *The Rule of Reason in Antitrust Law: American, German and Common Market Laws in Comparative Perspective*. Dordrecht: Springer.
- Jovović, T. 2012. “Deutschland und die Kartelle – eine unendliche Geschichte.” *Economic History Yearbook* 53 (1): 237–73.
- Junge, O. J. 2018a. *Imperium: die Rechtsnatur der Europäischen Union im Vergleich mit imperialen Ordnungen vom Römischen bis zum Britischen Reich*. Tübingen: Mohr Siebeck.
- Junge, O. J. 2018b. “Vielfalt und Einheit von Recht und Verfassung in der Europäischen Union und imperialen Ordnungen.” *Jahrbuch des öffentlichen Rechts der Gegenwart. Neue Folge* 66: 43–84.
- Jürgens, U. 1980. *Selbstregulierung des Kapitals: Erfahrungen aus der Kartellbewegung in Deutschland um die Jahrhundertwende. Zum Verhältnis von Politik und Ökonomie*. Frankfurt a. M.: Campus Forschung.
- Kaiser, W. and J. Schot. 2014. *Writing the Rules for Europe: Experts, Cartels, and International Organizations*. Basingstoke: Palgrave Macmillan.
- Kamepalli, S. K., R. Rajan, and L. Zingales. 2020. *Kill Zone*. NBER Working Paper No. 27146. National Bureau of Economic Research.
- Katz, A. 2020. “The Chicago School and the Forgotten Political Dimension of Antitrust Law.” *University of Chicago Law Review* 87 (2): 413–58.
- Kerber, W. and U. Schwalbe. 2008. “Economic Principles of Competition Law.” In *Competition Law: European Community Practice and Procedure*, edited by G. Hirsch, F. Montag, and F. J. Säcker, 202–393. London: Sweet & Maxwell.
- Kerber, W. 2015. “Einleitung.” In *Münchener Kommentar Europäisches und Deutsches Wettbewerbsrecht*, edited by J. Bornkamm, F. Montag, and F. J. Säcker, 1–12. Munich: C. H. Beck.
- Khan, L. M. 2017. “Amazon’s Antitrust Paradox.” *Yale Law Journal* 126 (3): 564–907.
- Klement, J. H. 2015. *Wettbewerbsfreiheit: Bausteine einer europäischen Grundrechtstheorie*. Tübingen: Mohr Siebeck.
- Kolev, S. 2018. *The Abandoned Übervater: Max Weber and the Neoliberals*. Center for the History of Political Economy Working Paper Series No. 2018–21, Duke University.
- Kolev, S. 2019a. “James Buchanan and the ‘New Economics of Order’ Research Program.” In *James M. Buchanan: A Theorist of Political Economy and Social Philosophy*, edited by R. E. Wagner, 85–108. London: Palgrave Macmillan.
- Kolev, S. 2019b. “Ordoliberalism’s Embeddedness in the Neoliberalisms of the 1930 s and 1940 s.” In *Ordoliberalism and European Economic Policy: Between Realpolitik and Economic Utopia*, edited by M. Dold and T. Krieger, 23–38. Abingdon: Routledge.
- Kolev, S. and N. Goldschmidt. 2020. “Kulturpessimismus als Provokation. Wilhelm Röpkes Ringen mit der Moderne.” *ZfP Zeitschrift für Politik* 67 (2): 214–34.
- Körper, T., H. Schweitzer, and D. Zimmer. 2019. “Einleitung.” In *Wettbewerbsrecht*, Vol. 1, edited by T. Körper, H. Schweitzer, and D. Zimmer, 1–88. Munich: C. H. Beck.
- Koselleck, R. 1973. *Kritik und Krise: Eine Studie zur Pathogenese der bürgerlichen Welt*. Frankfurt a. M.: Suhrkamp.

- Kraffert, F. 2020. "Should EU competition law move towards a Neo-Brandeis approach?" *European Competition Journal* 16 (1): 55–95.
- Krarup, T. 2019. "German political and economic ideology in the twentieth century and its theological problems: The Lutheran genealogy of ordoliberalism." *European Journal of Cultural and Political Sociology* 6 (3): 317–42.
- Krüger, D. 1983. *Nationalökonomien im wilhelminischen Deutschland*. Göttingen: Vandenhoeck & Ruprecht.
- Kruschinski, S. and J. Haßler. 2017. "Die Instrumentalisierung partizipativer Öffentlichkeit durch die AfD bei der rheinland-pfälzischen Landtagswahl 2016." *MedienJournal* 41 (2): 97–112.
- Küstern, A. 2019a. "Die Freiburger Schule und der Stadt-Land-Gegensatz." *Journal für Kultur* 2: 54–9.
- Küstern, A. 2019b. *In Search of Ordoliberalism: Evidence from the Annual Reports of the German Council of Economic Experts, 1964–2017*. Max Planck Institute for European Legal History Research Paper Series No. 2019–12.
- Küstern, A. 2020a. *Warum eine gute Geschichte nicht immer gut sein muss: Zur wirtschaftspolitischen Wirkmächtigkeit von Narrativen aus verhaltensökonomischer Perspektive*. DNGPS Working Paper A-02–2020 A: 1–17. Accessed Apr. 16, 2021. <https://doi.org/10.3224/dngps.v6i1.02>.
- Küstern, A. 2020b. "Wasser oder Öl? Big Data in der europäischen Fusionskontrolle." *Berliner Debatte Initial* 31 (3): 110–23.
- Küstern, A. 2022. "Applying Lessons from the Past? Exploring Historical Analogies in ECB Speeches through Text Mining, 1997–2019." *International Journal of Central Banking* 18 (1): 277–329.
- Küstern, H. J. 1982. *Die Gründung der Europäischen Wirtschaftsgemeinschaft*. Baden-Baden: Nomos.
- Kutzner, M. 2019. *Marktwirtschaft schreiben. Das Wirtschaftsressort der Frankfurter Allgemeinen Zeitung 1949 bis 1992*. Tübingen: Mohr Siebeck.
- Lao, M. 2009. "Networks, Access, and 'Essential Facilities': From Terminal Railroad to Microsoft." *SMU Law Review*. 62 (2): 557–96.
- Leisering, L. 2001. "Germany – Reform from Within." In *International Social Policy: Welfare Regimes in the Developed World*, edited by P. Alcock und G. Craig, 161–82. Basingstoke: Palgrave.
- Lenaerts, K. and J. A. Gutiérrez-Fon. 2013. *To Say What the Law of the EU Is: Methods of Interpretation and the European Court of Justice*. EUI Working Paper AEL 2013/9. Academy of European Law. European University Institute.
- Leucht, B. 2009. "Transatlantic Policy Networks in the Creation of the First European Anti-Trust Law: Mediating between American Anti-Trust and German Ordo-Liberalism." In *The History of the European Union: Origins of a Trans-and Supranational Polity 1950–72*, edited by W. Kaiser, B. Leucht, and M. Rasmussen, 56–73. Abingdon: Routledge.
- Lösch, D. 2000. "Das Dilemma mit der Rolle des Staates in der Wettbewerbsordnung. Zum 50. Todestag von Walter Eucken" *Wirtschaftsdienst* 80 (3): 185–92.

- Lynn, B. C. 2020. *Liberty from All Masters: The New American Autocracy vs. the Will of the People*. New York: St. Martin's Press.
- Macrae, T. 2020. "Economic Nationalism and Merger Control: Impact of COVID-19." *Competition Policy International*, May 19, 2020. <https://www.competitionpolicyinternational.com/economic-nationalism-and-merger-control-impact-of-covid-19/>.
- Maher, I. 1999. "Competition Law Modernization: An Evolutionary Tale?" In *The Evolution of EU Law*, edited by P. Craig and G. De Búrca, 717–41. New York: Oxford University Press.
- Maier, N. 2019. "Closeness of Substitution for 'Big Data' in Merger Control." *Journal of European Competition Law & Practice* 10 (4): 246–52.
- McCarragher, E. 2019. *The Enchantments of Mammon: How Capitalism Became the Religion of Modernity*. Cambridge: Harvard University Press.
- McGill, V. J. 1945. "Cartels and the Settlement with Germany." *Science & Society* 9 (1): 23–54.
- McGowan, L. and E. J. Morgan. 2012. "Today's Softness is Tomorrow's Nightmare": Intensifying the Fight against Cartels in Brussels and Bonn." *Journal of European Integration* 34 (6): 603–22.
- Medema, S. G. 2010. "Chicago law and economics." In *The Elgar Companion to the Chicago School of Economics*, edited by R. B. Emmett, 160–74. Cheltenham: Edward Elgar.
- Mee, S. 2019. *Central Bank Independence and the Legacy of the German Past*. Cambridge: Cambridge University Press.
- Mehra, S. K. 2016. "Antitrust and the Robo-Seller: Competition in the Time of Algorithms." *Minnesota Law Review* 100 (4): 1323–75.
- Meier-Rust, K. 1993. *Alexander Rüstow: Geschichtsdeutung und liberales Engagement*. Stuttgart: Klett-Cotta.
- Menke, C. 2015. *Kritik der Rechte*. Berlin: Suhrkamp.
- Mestmäcker, E.-J. 1965. "Offene Märkte im System unverfälschten Wettbewerbs in der Europäischen Wirtschaftsgemeinschaft." In *Wirtschaftsordnung und Rechtsordnung – Festschrift zum 70. Geburtstag von Franz Böhm am 16. Februar 1965*, edited by H. Coing, H. Kronstein, and E.-J. Mestmäcker, 345–91. Karlsruhe: C. F. Müller.
- Mestmäcker, E.-J. 2000. "The EC Commission's Modernization of Competition Policy: A Challenge to the Community's Constitutional order." *European Business Organization Law Review* 1 (3): 401–44.
- Milanovic, B. 2016. *Global Inequality: A New Approach for the Age of Globalization*. Cambridge: Harvard University Press.
- Monti, G. 2002. "Article 81 EC and Public Policy." *Common Market Law Review* 39 (5): 1057–99.
- Möschel W. 1989. "Competition Policy from an Ordo Point of View." In *German Neo-Liberals and the Social Market Economy*, edited by A. Peacock and H. Willgerodt, 142–59. London: Palgrave Macmillan.
- Möschel, W. 1995. "Law and Market Organization: The Historical Experience in Germany From 1900 to the Law Against Restraints of Competition (1957): Comment." *Journal of Institu-*

- tional and Theoretical Economics (JITE) / Zeitschrift Für Die Gesamte Staatswissenschaft* 151: 21–5.
- Möschel, W. 2006. “Wettbewerb zwischen Handlungsfreiheit und Effizienzzielen.” In *Recht und spontane Ordnung. Festschrift für Ernst-Joachim Mestmäcker zum 80. Geburtstag*, edited by W. Möschel and C. Engel, 355–70. Baden-Baden: Nomos.
- Murach-Brand, L. 2004. *Antitrust auf deutsch. Der Einfluß der amerikanischen Alliierten auf das Gesetz gegen Wettbewerbsbeschränkungen (GWB) nach 1945*. Tübingen: Mohr Siebeck.
- Nazzini, R. 2015. “Google and the (Ever-stretching) Boundaries of Article 102.” *Journal of European Competition Law & Practice* 6 (5): 301–11.
- Nicholas, T. 2019. *V.C.: An American History*. Cambridge: Harvard University Press.
- Nicholls, A. J. 1994. *Freedom with Responsibility – The Social Market Economy in Germany, 1918–1963*. Oxford: Clarendon Press.
- Nörr, K. W. 1994. *Die Leiden des Privatrechts: Kartelle in Deutschland von der Holzstiftkartellentscheidung zum Gesetz gegen Wettbewerbsbeschränkungen*. Tübingen: Mohr Siebeck.
- Novak, M. 2019. “Climate Change: What Should Liberals Do?” *Journal of Contextual Economics–Schmollers Jahrbuch* 139 (2–4): 325–48.
- Oakes, I. 2020. “Max Weber and Ordoliberalism: How Weber’s Kulturkritik Contributed to the Foundation of Ordoliberal Socio-Economic Thought.” *Journal of Contextual Economics–Schmollers Jahrbuch*. 140 (2):177–204.
- Odell, J. 2019. *How to Do Nothing: Resisting the Attention Economy*. London: Melville House.
- OECD. 2013. “The Role and Measurement of Quality in Competition Analysis.” Accessed April 16, 2021. <http://www.oecd.org/competition/Quality-in-competition-analysis-2013.pdf>.
- O’Neil, C. 2016. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. New York: Crown Publishing Group.
- Orbach, B. 2019. “The Present New Antitrust Era.” *William & Mary Law Review* 60 (4): 1439–63.
- Pagano, U. 2014. “The crisis of intellectual monopoly capitalism.” *Cambridge Journal of Economics* 38 (6): 1409–29.
- Piketty, T. 2014. *Capital in the Twenty-First Century*. Cambridge: Harvard University Press.
- Piketty, T. and G. Zucman. 2014. “Capital is back: wealth-income ratios in rich countries 1700–2010.” *Quarterly Journal of Economics* 129 (3): 1255–310.
- Pistor, K. 2019. *The Code of Capital: How the Law Creates Wealth and Inequality*. Princeton: Princeton University Press.
- Pitofsky, R. 1979. “The Political Content of Antitrust.” *University of Pennsylvania Law Review* 127 (4): 1051–75.
- Pollman, E. and J. M. Barry 2017. “Regulatory Entrepreneurship.” *Southern California Law Review* 90 (3): 383–448.
- Porat, A. and L. J. Strahilevitz, 2014. “Personalizing Default Rules and Disclosure with Big Data.” *Michigan Law Review* 112 (8): 1417–78.

- Posner, R. A. 1979. "The Chicago School of Antitrust Analysis." *University of Pennsylvania Law Review* 127 (4): 925–48.
- Ptak, R. 2004. *Vom Ordoliberalismus zur Sozialen Marktwirtschaft: Stationen des Neoliberalismus in Deutschland*. Opladen: Leske + Budrich.
- Räthling, S. G. 2021. *Die Kartellrechtsregelungen in den Freihandelsabkommen der Europäischen Union: Eine Analyse im Kontext der Internationalisierung des Kartellrechts*. Baden-Baden: Nomos.
- Reinhoudt, J. and S. Audier. 2018. *The Walter Lippmann Colloquium: The Birth of Neo-Liberalism*. London: Palgrave Macmillan.
- Rollings, N. and L. Warloutzet. 2018. "Business history and European integration: How EEC competition policy affected companies' strategies." *Business History* 62 (5): 717–42.
- Röpke, W. (1937) 1963. *Economics of the Free Society*. Translated by P. M. Boorman. Chicago: Henry Regnery.
- Röpke, W. 1942. *International Economic Disintegration*. London: William Hodge.
- Röpke, W. 1946. *The German Question*. Translated by E. W. Dickies. London: George Allen.
- Röpke, W. (1948) 1979. *Civitas Humana*. Bern: Haupt.
- Röpke, W. (1951, 1957) 1987. *2 Essays By Wilhelm Röpke: The Problem of Economic Order, Welfare Freedom and Inflation*, edited by J. Overbeek. Lanham: University Press of America.
- Röpke, W. (1958) 1960. *A Humane Economy: The Social Framework of the Free Market*. Chicago: Henry Regnery.
- Runciman, D. 2021. "Competition is for losers." *London Review of Books* 43 (18): 3–4.
- Russell, S. and P. Norvig, (1995) 2009. *Artificial Intelligence: A Modern Approach*. Hoboken: Prentice Hall.
- Rüstow, A. 1942. "Appendix: General Sociological Causes of the Economic Disintegration and Possibilities of Reconstruction." In *International Economic Disintegration*, by W. Röpke, 267–83. London: William Hodge.
- Saez, E. and G. Zucman, 2016. "Wealth inequality in the United States since 1913: evidence from capitalized income tax data." *Quarterly Journal of Economics* 131 (2): 519–78.
- Schenk, C. R. 2021. "The Past as Practice or Parable: Anticipating Financial Crisis in the 1960s and 1980s." In *Remembering and Learning from Financial Crises*, edited by Y. Cassis and C. R. Schenk, 82–104. Oxford: Oxford University Press.
- Schepp, N.-P. and A. Wambach. 2016. "On Big Data and Its Relevance for Market Power Assessment." *Journal of European Competition Law & Practice* 7 (2): 120–24.
- Schinkel, M. P. and L. Treuren. 2020. "Green Antitrust: Friendly Fire in the Fight against Climate Change." In *Competition Law, Climate Change & Environmental Sustainability, Concurrences*, edited by S. Holmes, D. Middelschulte, and M. Snoep, 69–90. New York: Institute of Competition Law.
- Schönberg, S. and K. Frick. 2003. "Finishing, refining, polishing: On the use of travaux préparatoires as an aid to the interpretation of Community legislation." *European Law Review* 28 (2): 149–71.

- Schröter, H. G. 1994. "Kartellierung und Dekartellierung: 1890–1990." *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 81 (4): 457–93.
- Schwalbe, U. 2018. "Algorithms, Machine Learning, and Collusion." *Journal of Competition Law & Economics* 14 (4): 568–607.
- Schweitzer, H., T. Fetzter, and M. Peitz, 2016. *Digitale Plattformen: Bausteine für einen künftigen Ordnungsrahmen*. Discussion Paper 16–042. Zentrum für Europäische Wirtschaftsforschung.
- Shapiro, C. 2012. "Competition and Innovation: Did Arrow Hit the Bull's Eye?" In *The Rate and Direction of Inventive Activity Revisited*, edited by J. Lerner and S. Stern, 361–404. Chicago: University of Chicago Press.
- Slobodian, Q. 2018. *Globalists: The End of Empire and the Birth of Neoliberalism*. Harvard: Harvard University Press.
- Stigler Center for the Study of the Economy and the State. 2019. "Report of the Committee for the Study of Digital Platforms: Markets Structure and Antitrust Subcommittee." Accessed April 16, 2021. <https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms-committee-report-stigler-center.pdf>.
- Stiglitz, J. E. 2012. *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York: W. W. Norton.
- Stoller, M. 2019. *Goliath: The 100-Year War Between Monopoly Power and Democracy*. New York: Simon & Schuster.
- Stones, R. R. 2018. "EU Competition Law and the Rule of Law: Justification and Realisation." Phd diss., The London School of Economics and Political Science.
- Stross, R. 2012. "Meet Your Neighbors, If Only Online." *New York Times*, May 12, 2012. <https://www.nytimes.com/2012/05/13/business/on-nextdoorcom-social-networks-for-neighbors.html>.
- Stucke, M.E. and A. Ezrachi. 2020. *Competition Overdose: How Free Market Mythology Transformed Us from Citizen Kings to Market Servants*. New York: Harper Collins.
- Sunstein, C. R. 2013. "Deciding by Default." *University of Pennsylvania Law Review* 162 (1): 1–57.
- Taylor, L. and Ö. Ömer. 2020. *Macroeconomic Inequality from Reagan to Trump: Market Power, Wage Repression, Asset Price Inflation, and Industrial Decline*. Cambridge: Cambridge University Press.
- Tepper, J. 2019. *The Myth of Capitalism: Monopolies and the Death of Competition*. Hoboken: Wiley.
- Teubner, G. 2014. "Transnationale Wirtschaftsverfassung: Franz Böhm und Hugo Sinzheimer jenseits des Nationalstaates." *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* 74: 733–61.
- Thiel, P. 2009. "The Education of a Libertarian." *Cato Unbound*, April 13, 2009. <https://www.cato-unbound.org/2009/04/13/peter-thiel/education-libertarian/>.
- Thiel, P. 2014. "Competition Is for Losers." *Wall Street Journal*, September 12, 2014. <https://www.wsj.com/articles/peter-thiel-competition-is-for-losers-1410535536>.

- Thiel, P. and B. Masters. 2015. *Zero to One: Notes on Startups, or How to Build the Future*. London: Virgin Books.
- Thiele, A. 2019. *Die Europäische Zentralbank: Von technokratischer Behörde zu politischem Akteur?* Tübingen: Mohr Siebeck.
- Tucker, D. 2015. "The Proper Role of Privacy in Merger Review." *CPI Antitrust Policy* May (2): 1–7.
- Vallindas, G. 2006. "New Directions in EC Competition Policy: The Case of Merger Control." *European Law Journal* 12 (5): 636–60.
- Vanberg, V. J. 2004. *The Freiburg School: Walter Eucken and Ordoliberalism*. Discussion Paper 04/11. Freiburg Discussion Papers on Constitutional Economics, Walter Eucken Institut.
- Vatiero, M. 2015. "Dominant Market Position and Ordoliberalism." *International Review of Economics* 62 (4): 291–306.
- Vestager, M. 2020. "Speech by Executive Vice-President Margrethe Vestager, Munich Security Conference, 26 October 2020" Accessed April 16, 2021. https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/speech-munich-young-leaders-around-world_en.
- Vestager, M. 2021. "A new Europe: Competition, Industrial Policy, Taxation." Accessed January 6, 2021. https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/speech-esp-m-vestager-fondazione-la-collaborazione-tra-i-popoli-romano-prodi-new-europe-competition_en.
- Vezzoso, S. 2021. "The dawn of pro-competition data regulation for gatekeepers in the EU." *European Competition Journal* 17 (2): 391–406.
- Volscho, T. W. and N. J. Kelly. 2012. "The Rise of the Super-Rich: Power Resources, Taxes, Financial Markets, and the Dynamics of the Top 1 Percent, 1949 to 2008." *American Sociological Review* 77 (5): 679–99.
- Wagner, R. E. 2019. "Economic Theory and the Social Question: Some Dialectics Regarding the Work-Dependency Relationship." *Journal of Contextual Economics—Schmollers Jahrbuch* 139 (2–4): 407–20.
- Waldman, S. 2020. "The Coming Era of 'Civic News.'" *Washington Monthly*, October 25, 2020. <https://washingtonmonthly.com/magazine/november-december-2020/the-coming-era-of-civic-news/>.
- Waller, S. W. and J. Morse. 2020. "The Political Face of Antitrust." *Brooklyn Journal of Corporate, Financial, and Commercial Law* 15 (1): 75–95.
- Wegmann, M. 2008. *Der Einfluss des Neoliberalismus auf das Europäische Wettbewerbsrecht 1946–1965. Von den Wirtschaftswissenschaften zur Politik*. Baden-Baden: Nomos.
- Weippert, G. 1960. "Die wirtschaftstheoretische und wirtschaftspolitische Bedeutung der Kartelldebatte auf der Tagung des Vereins für Socialpolitik im Jahre 1905: Ein Beitrag zum Schmollerbild." *Jahrbuch für Sozialwissenschaft* 11 (2): 125–83.
- Wells, W. 2002. *Antitrust and the Formation of the Postwar World*. New York: Columbia University Press.

- Wilks, S. 2009. “The Impact of the Recession on Competition Policy: Amending the Economic Constitution?” *International Journal of the Economics of Business* 16 (3): 269–88.
- Wörsdörfer, M. and C. Dethlefs. 2016. “Homo oeconomicus oder Homo culturalis? – Aktuelle Herausforderungen für das ordoliberalen Menschenbild.” *ORDO–Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* 63: 135–57.
- Wu, T. 2018. *The Curse of Bigness: Antitrust in the New Gilded Age*. New York: Columbia Global Reports.
- Zhang, A. H. 2021. *Chinese Antitrust Exceptionalism: How the Rise of China Challenges Global Regulation*. Oxford: Oxford University Press.
- Zittrain, J. 2008. *The future of the Internet and how to stop it*. New Haven: Yale University Press.
- Zittrain, J. 2014. “Facebook could decide an election without anyone ever finding out – the scary future of digital gerrymandering – and how to prevent it.” *New Republic*. Accessed April 16, 2021. <https://newrepublic.com/article/117878/information-fiduciary-solution-facebook-digital-gerrymandering>.
- Zuboff, S. 2019. *The Age of Surveillance Capitalism*. New York: PublicAffairs.