Justice in the Global Digital Economy

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1 Introduction

On stock markets, in politics, and in business, the digital economy receives a fair amount of attention. This chapter first proposes to understand the digital economy as about infrastructure, then describes some of the problems of justice raised by the global digital economy and sketches potential reforms.

2 Digital Economy as Digital Infrastructure

A first step is to get clear on what we are talking about: What is meant by "digital economy"? For the purposes of this chapter, the digital economy is understood as consisting of those companies that produce infrastructure goods, which are provided or accessed online.[1] In a slogan, the digital economy is the *digital infrastructure*.[2]

Consider some examples. Amazon is not only a retail operation but an online marketplace and fulfilment company. Facebook, in addition to the social network, provides communication services and technologies, such as video telephony and virtual reality devices. Apple's Appstore brings together developers and users. Google and Facebook, through their advertising networks, allow companies to track and influence customers. Cloud computing companies offer backend services like database hosting, fraud detection, code analysis, or budget management. Finally, end-consumers now consume digital products like they buy electricity or running water. Microsoft and others sell

[1] On the one hand this definition is relatively narrow. It excludes companies that produce the hardware and software that powers the digital infrastructure. It also excludes content creators—influencers—or more generally enterprises that offer consumtion products via digital infrastructure. For a discussion of different definitions see OECD (2019, 34–70).

[2] On the other hand, this definition is relatively broad. Often the digital economy is defined as platforms (cf. Khan 2017, 754, 802–3; Rahman 2018), which are one kind of infrastructure (Plantin et al. 2018).

their software "as a service". Whether it is office apps, Youtube, Netflix, Spotify, or Apple Music—the digital economy provides diverse resources for business' backend operations and the private production of leisure.

In short, the digital economy should be thought of as *infrastructure that is provided or accessed online*. The digital economy fits the three conditions of what it means for a resource to be an "infrastructure" (Frischmann 2013, 61). First, the resources can be consumed non-rivalrously. Second, the "demand for the resource is driven primarily by downstream productive activity that requires the resource as an input." Third, the "resource may be used as an input into a wide range of goods and services, which may include private goods, public goods, and social goods." Moreover, the digital economy exhibits key features of infrastructures as they are investigated by infrastructure studies. The digital economy is ubiquitous, users can rely on it, the resources provided become invisible, and, in case of a breakdown, the effects are profound (Plantin et al. 2018, 294).

The "digital economy" could instead be understood as consisting of those companies whose business model "critically depends on the utilization of large amounts of data" (see the companion chapter by Hett and Schwab). This definition emphasizes the growing importance of intangible assets. However, the assets of companies like Amazon, Google, Apple, or Facebook include crucial physical ones: data centers, networks of high-bandwidth cables, specialized chips, and power generation facilities (to meet their high demands for electricity). Moreover, insofar as data is crucially important for most economic activity, this definition risks including "in modern economies, the entire economy" (IMF 2018, 7).

Yet, regardless of whether "digital economy" is defined as being about data or about infrastructure, the economic analysis is similar: Search and transaction costs are very low and data travels for free (Goldfarb and Tucker 2019). When the infrastructure is not only accessed electronically—as in online shopping— rather the infrastructure goods are delivered or consumed online—as with cloud computing services—then the infrastructure has global reach. To make matters worse, because of high fixed costs and economies of scale, the digital economy tends to give rise to natural monopolies (see Hett and Schwab).

Notwithstanding this overlap in economic analysis, emphasizing the infrastructure aspects of the digital economy over its dependence on data has two advantages.

First, it narrows the aperture and thereby brings certain aspects into focus. This invites researchers to use approaches and tools that were developed for infrastructures and platforms specifically (e.g. Plantin et al. 2018). For normative analyses, the topic of privacy moves into the background: privacy, of course, matters because digital infrastructures harvest and exploit data. But harvesting and exploiting data is something that, these days, most enterprises do. Privacy is a broad set of issues that intersects with many industries and many spheres of public and private life—online and offline.

Second, seeing the digital economy as digital infrastructure makes clear why the digital economy matters for justice. The digital economy provides powerful resources. It enables the production of goods across all aspects of life. It lubricates economic activities, such as setting up new businesses; but it also provides resources for political goods—facilitating participation, spreading misinformation, or building solidarity—as well as social goods, such as maintaining friendships. In short, in virtue of being an infrastructure, the digital economy is an ingredient for economic, political, and social goods. Giving individuals access to it is a matter of justice.

To keep things short, this survey about justice in the global digital economy is selective and schematic. It is geographically selective in that I concentrate mostly on America, Europe, and Africa, and it is topically selective in that I leave aside issues of domestic socio-economic justice as well as racial and gender justice. The survey is schematic in that, by dividing the world into the global north and south, I omit important distinctions within and between these two groups.

3 Justice in the Global Digital Economy

The global digital economy raises problems of justice on many fronts. I will focus on three: On the front of socio-economic justice, the digital economy increases global inequality. On the front of inter-generational justice, one generation may give up their data at the expense of the next (see Hett and Schwab for both points). On the front of political justice, the global digital economy raises four potential problems: It (1) abridges state power, (2) degrades political relations, (3) supports authoritarian politics, and (4) exacerbates American global political power.

These problems are largely familiar. Some of them even come in familiar proportions: Global inequality is a long-standing and persistent problem; so is shifting burdens onto later generations.[3] One thing is different, however: Issues in political justice that are familiar domestically—such as antitrust and corporate power—now scale up to global proportions. *The global digital economy thus opens a new chapter of colonialism*. Already earlier chapters of colonialism told a story of economic interests and corporate power mixing (Zingales 2017). Resembling such earlier chapters, both Chinese and the US multinational companies today are seen as colonial powers in the Global South—because of their control of the digital infrastructure (Kwet 2019; Gravett 2020). One difference, of course, concerns the resource that the economic enterprises extract: the dominance is based not in the acquisition of territory but in power over data (Mann 2018). Yet the bigger picture that emerges from the injustices described below, especially the political ones, may still be this: Colonialism—at least recognized by its mark of denying members of a political association "equal and reciprocal terms of cooperation" (Ypi 2013)—is back.

3.1 Global Monopolies, Global Inequality

Socio-economically, the digital economy leads to an unjust distribution. The monopolies of the digital economy will reside in the global north, which, consequently, will *on average* likely see greater income, greater welfare, and better access to resources and opportunities (see the companion piece to this chapter). This is a matter of distributive justice. To start with, this is a matter of *equality*—or, rather, lack thereof. Even if philosophers disagree about the equality of what—income, welfare, resources, opportunities—equality, at least within some measure, is widely taken to be one component of justice. But moreover, this global disparity could also be a matter of *sufficiency*. The issue would then be not that some have too much, but that others do not have enough (Frankfurt 1987). Insofar as the digital economy is a basic good, individuals have strong claims to get enough of it.

Of course, inequality is not always unjust—in fact, there can be justice-based reasons for inequality—and equality is not the only value that matters. But distributive justice is still of paramount importance in the digital economy. The relevant things to look at, the *distribuenda*, may not be income or opportunities, but instead *standing* (whether individuals relate to each other as equals) or *power* (whether one can impose their will

[3] Much of the global justice debate concerns the former, and much of the ethics of climate change the latter.

on another). Even if everyone had sufficient access to the digital economy, the *way* in which this access is provided might be unjust. Equality can be provided in a way that is demeaning (Anderson 1999); and power asks not only what you have and how you got it, but whether somebody could take it away (cf. Pettit 1997; List and Valentini 2016).

Power over infrastructures might be the harder problem than *access* to them. Because the digital economy is a business, and because the Global South is a market, there is a buck to be made. Thus, given the existing economic regimes, the Global South will get access to the digital infrastructure—and pay for it. And those who own the digital economy will have power over those who merely get to use it.

3.2 Price Discrimination Against Future Generations

The companion piece identifies a potential problem of inter-generational justice: Today, consumers pay for digital services with their data. These data are valuable to companies because they contain information not only about present but also about future consumers—and their willingness to pay.[4] Present consumers hence "benefit from low prices" while "future consumers suffer from the intensified price discrimination" (Hett and Schwab in draft of companion chapter) (cf. Steinberg 2020).

Price discrimination is a less pressing problem than it may seem—yet it is interesting to consider why: To start with, even if present generations disadvantage future generations in this way, future generations may still benefit on balance, all other things being equal.[5] Just as future generations inherit cultural and technological capital, they inherit whatever good comes from the digital economy. Price discrimination on future generations might be a way in which these generations compensate the present generations for the things the present generations leave behind.[6]

Moreover, price discrimination is not wrong (Marcoux 2006; Elegido 2011; Coker and Izaret 2020). Price discrimination is when a seller charges different people different prices for the same product. Price discrimination is very common: Discounts for students and senior citizens; travel tickets that get more expensive over time; journals to

[4] Genetic data have the same property—and raise an analogous externality intra-generationally.

[5] Whatever amount of goods the digital economy may transfer between generations, this amount might be negligible when compared to magnitude of future harms of climate change.

[6] The average considerations here mask that part of that inheritance may be an increase inequality.

which university libraries can subscribe only in bundles; university tuition support that varies with household income; and hardcover books are examples. Price discrimination can lead to greater welfare and efficiency (Steinberg 2020, 99–104; but see Huang 2005), it makes industries with high fix costs profitable (Elegido 2011, 637), and hence enables products that otherwise might not exist. It allows monopolists—instead of maximizing profit by restricting supply—to offer as much of their product as they would on a competitive market (Steinberg 2020, 103).

The problem is, or so some might think, that price discrimination offends against a norm of equality: Equality demands that everyone pays the same. Not quite. In fact, price discrimination may make things equal: It allows that each consumer gets the equal surplus value for some good (Marcoux 2006). The fact that someone gets more welfare out of a product and can afford to pay more, is a reason that they should pay more. By the same principle, global pharmaceutical companies charge higher prices in rich countries, and thereby—in addition to making significant profit—fund the development of new medication.[7]

In short, price discrimination is perhaps not as severe a problem of justice as it may initially seem. Because the arguments above should not be taken as decisive, I will later consider how price discrimination could be addressed. But for now, I will turn to problems of political justice.

3.3 Abridgment of State Power

At the beginning of the SARS-CoV2 pandemic, Apple and Google developed low-level software that could have been used for contact tracing. But the companies allowed to use the software only for exposure notifications. The companies legally barred public health authorities from using the gathered information to identify individuals in a chain of transmissions.[8] In this way, the companies took an important public health policy option off the table.[9]

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[7] Some argue that price discrimination offends against relational equality (Steinberg 2020), or the idea of fair competition (Moriarty 2021). But given that the relation between present and future generations is already bedeviled with asymmetries, considerations of relational equality seem out of place. And whether present individuals owe fair terms of competition to non-existent possible future individuals is, at least, an open question.

[8] I am indebted to Seth Lazar for a helpful discussion on this topic.

[9] This decision is not unreasonable, considering some countries' weak data protection regimes.

This illustrates a general problem: Companies in the digital economy have power over states. The companies control how their infrastructure is used—in this case: phone operating systems. In addition to such direct control, when digital infrastructure is critical, companies wield significant indirect bargaining power. Companies can threaten to restrict infrastructure access and thereby influence policy options that are not under their direct control.

This is an example of how state power is suffocated by corporate power (cf. Claassen and Herzog 2021). To put corporate power in perspective, one can think of it either as a matter of market concentration or of size.[10] *Market concentration* is measured by the Herfindahl–Hirschman Index (HHI) and has been rising in the public cloud computing market. Concentration is nearing the US Department of Justice' highest category.[11] Going by *size*—by market valuation—digital economy companies are the largest companies in the world. As of early 2021, Microsoft is valued at $1.76tn, followed by Amazon at $1.59tn, followed by Alphabet at $1.41tn.[12] In terms of revenue, they dwarf states. Apple's annual revenue in 2020 approached $300bn, Amazon's was over $380bn.[13] For comparison, the median annual total GDP is Afghanistan's at around $19bn.[14]

Of course, size and power are not as such morally problematic. But when companies are powerful enough to escape or profoundly limit the jurisdiction and governance of

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[10] Conceiving of corporate power as a matter of market share stands in the tradition of neoclassical economics, which concentrates on avoiding monopolies. But market concentration may not be problematic as such (DeMarco 2001). The problems of corporate size has been neglected in economic and normative theorizing (Zingales 2017, 117; Claassen and Herzog 2021).

[11] Goldman Sachs, in a report from 2016, projected that by 2020, the public cloud market would "further concentrate into a moderately concentrated market, with a HHI of 2,235" (Bellini et al. 2016, 59). In fact, this market has a HHI of 2,345 in 2019 (own calculations). A market is considered highly concentrated when the HHI is greater than 2,500 (U.S. Department of Justice and Federal Trade Commission 2010).

[12] "Quotes For NASDAQ-100 Index." Accessed February 24, 2021. https://www.nasdaq.com/market-activity/quotes/nasdaq-ndx-index.

[13] See https://www.macrotrends.net/stocks/charts/AAPL/apple/revenue, https://www.apple.com/newsroom/pdfs/FY20_Q4_Consolidated_Financial_Statements.pdf, https://www.macrotrends.net/stocks/charts/AMZN/amazon/revenue.

[14] The distribution of GDP approximates a normal distribution. See https://www.wolframalpha.com/input/?i=median+of+gdp+of+all+countries+in+2020++in+usd/. All last accessed on March 20, 2021.

states, the companies yield their power illegitimately and without proper authority (Lazar 2022). Regardless of what they decide and why, companies are just not the right agents to make policy decisions—they lack authority—and they do not do so in the right way—they act illegitimately. And, because power consists in possibility, this problem of political justice persists, even if companies do not actually influence policymaking.

This abridgment of state power is particularly acute on the global scale. Power likely correlates with existing advantages. Those states that are already victims of injustice may come to live under the shadow of the digital economy.

3.4 Degradation of Economic Opportunities and Political Relations

Global corporate power has effects for economies domestically. For one, corporate power can degrade economic opportunities by stifling competition and innovation (Khan 2017; 2018). Large companies in the digital economy have *gatekeeper power*. Large corporations can keep competitors out of markets, for example, by acquiring them—think of Facebook and Instagram. Second, large corporations have *leveraging power*, that is, they can establish an advantageous position in ancillary markets. For example, the Amazon retail platform may have given its own book publishing division an advantage in its competition with other publishers. Third, large corporations have *information exploitation* power to practice forms of price discrimination.[15] Finally, the digital economy can degrade economic opportunities on labor markets—salaries diverge, workers are made contingent, and unions are busted.[16]

Secondly, the power of the digital economy moreover negatively affects political relations. This starts at work: Labor relations are political relations because they transfer authority over important aspects of an individual's life. Because the workplace is rife with oppression, these relations are already defective (Anderson 2017; Coyle 2017). As the political power of employers increase—not only through institutions but also through technologies, such as, workplace surveillance—these relations are bound to degrade further. Corporate power moreover degrades political equality between citizens also outside of the workplace. Large corporations influence legislative, regulatory, or judicative processes and outcomes. With the digital economy, this old story of regulatory capture is now told anew (Dal Bó 2006; Shughart and Thomas 2019).

[15] These terms are due to Khan (2018).

[16] This is likely also driven by near-zero transportation costs for data (Goldfarb and Tucker 2019).

Finally, large corporations can escape the "ordinary mechanisms of political accountability" (Rahman 2018, 1629).

To return to a global outlook, corporate power can degrade political relations between countries. History offers drastic lessons: The East India Company managed to extend its initially time-limited monopoly from 15 to more than 200 years. During this time, it established itself as a de facto ruler of Bengal, contributed to a famine that killed more than 10 million people, and helped incite the so-called opium wars (Zingales 2017, 115–16). Many of the circumstances driving this—winner-take-all markets and economies of scale—are the same today. Notably, the rise in widespread corporate power seems to coincide with democratic backsliding, support for authoritarianism, and even fascism (Wu 2018).

When the digital economy is placed before this backdrop of colonialism, two problems of political justice on a global scale stand out: how the digital economy supports authoritarian politics and subsequently exacerbates American global political power.

3.5 Support of Authoritarian Politics

The digital economy can be a force for democracy (Himmelreich 2022). Social media lubricated civil society movements in the Philippines in 2001, in Ukraine in 2004 (the Orange Revolution), in Lebanon in 2005 (the Cedar Revolution), in Tunisia, Egypt and others during the Arab Spring, as well as during the Gezi Park and Occupy protests around 2010-11 (Diamond 2010, 78; Howard and Hussain 2011; 2013; Tufekci 2017).[17]

However, the digital economy can also be a force in the opposite direction—and support authoritarianism. One example for this is Facebook's role in Myanmar's humanitarian crisis in 2018. For many of Myanmar's 18 million internet users, Facebook is indistinguishable from the internet (Mozur 2018). Facebook, hence, was the ground on which the Myanmar military rolled out an Astroturf ultranationalist Buddhist movement that spread misinformation and vilified the Muslim Rohingya minority in Rakhine State (Fink 2018). This lead to a "textbook example of ethnic cleansing" according to an UN report (quoted in Mozur 2018). In the eyes of one member of a civil society group, Facebook had a responsibility "to take proper actions to avoid becoming

[17] The causal role of the technology is contested (Howard and Hussain 2013, 24; Lim 2018, 95).

an instigator of genocide"; Facebook "acknowledged it had been too slow to act" (Mozur 2018).

Whereas Facebook's involvement here may have been unintentional, elsewhere the company seemed to cooperate deliberately. In Vietnam, Facebook "agreed to restrict access to dissident political content deemed illegal [by the government] in exchange for the government ending its practice of disrupting Facebook's local servers, which had slowed the platform to a crawl" (Horwitz and Newley 2020). Likewise, in India—where Facebook has more users (280m) than in any other country, including the US (190m)—Facebook may have engaged in "a broader pattern of favoritism … toward Mr. Modi's Bharatiya Janata Party and Hindu hard-liners." (Horwitz and Newley 2020). Even as members of Modi's party called for Rohingya Muslim immigrants—from Myanmar—to be shot and threatened to raze mosques, thereby violating Facebook's own policies, a Facebook executive reportedly admonished employees that "punishing violations by politicians from Modi's party would damage the company's business prospects in the country" (Horwitz and Newley 2020).

These cases, since they are anecdotical evidence, do not show the problem's extent, but they suggest its magnitude. They illustrate how companies in the digital economy can prop up authoritarian politics. That social media are "tilting dangerously towards illiberalism" because they offer regimes means of surveillance and control, has been observed systematically in other contexts (Shahbaz and Funk 2019). And what goes for social media goes, likewise, for cloud services. China, for example, requires "foreign firms … to submit source code, undergo security audits, and localize data and equipment" (Parasol 2018, 86). Even if these requirements help to foster innovation and cybersecurity, fears about surveillance and authoritarian abuse loom large; especially, since the Cyber Security Association of China, which plays a central role in China's internet governance, is chaired by the "'Father of the Great Firewall', China's censorship and surveillance system" (Parasol 2018, 74).

The structural problem in these cases is that the business interests of companies in the digital economy align with the interests of authoritarian regimes: to stifle opposition and political competition and to consolidate their power. The companies and these

authoritarian interests support each other. Authoritarian powers enable companies to stay in business, and these companies help the regimes to stay in power.[18]

Whether through inattentiveness or incompetence, or whether through malicious neglect or opportunism—the digital economy risks being complicit in supporting authoritarian politics. Next to abridging state power and to degrading political relationships broadly, this is a third problem of political justice of the global digital economy.

3.6 Exacerbation of American Global Power

Finally, the global digital economy affects political justice in that it indirectly increases the US' international power. Because many large players in the digital economy are US companies, they are under direct jurisdiction of, or are at least politically beholden to, the US government. In fact, as of 2019, US companies control around 68% of the worldwide public cloud market.[19] To the extent that these companies provide critical infrastructure to other countries, this increases effect of potential sanctions, and hence the bargaining power of the US.

This is not a hypothetical concern. Even without sanctions, US domestic politics has restricted foreign access to digital infrastructure. On July 25, 2019 GitHub started blocking Iranian nationals from accessing their code repositories and, reportedly, their pages (Motamedi 2019a). Just weeks later, Iranians users had been locked out of Amazon's cloud products, Amazon Web Services (AWS). Because AWS powers virtual private networks—which are crucial for circumventing governmental internet surveillance and restrictions—this move by Amazon may have adversely affected the Iranian civil society (Motamedi 2019b). These restrictions were only the latest additions after other companies, such as Google, Apple, and Slack, had reportedly already restricted their services in Iran (Motamedi 2019b). Although the US Office of Foreign Assets Control (OFAC) had *allowed* companies to export services to Iran in 2014, according to reports from Al Jazeera, Iranian citizens are effectively still "locked out" from many internet services. The US-based digital economy tends to "overcomply" with US

[18] This phenomenon is in tension with the earlier—but equally plausible—claim that companies wield indirect power over states with the threat of withholding access to their infrastructure.

[19] With AWS (45%) leading Microsoft's Azure (17.9%), followed by Google Cloud (5.3%). Only one non-US cloud computing service has significant market share: Alibaba Cloud (9.1%). The data is by Gartner and reported in Eide (2020).

sanctions against the Iranian government—be it for political reasons or because of the administrative burden associated with exporting services (Motamedi 2019b; 2019a).

The digital economy hence leverages the international political power of those states that are their primary political home—generally, this means often: the power of the US. Without adjudicating this particular instance of US sanctions, this power leverage raises concerns for political justice. In the digital economy, export restrictions of can affect the economic and social opportunities of citizens in distant countries directly. Such international power might be illegitimate or substantially unjust.

4 Conclusion

The digital economy, as discussed here, combines infrastructure and data. It grafts the logic of platforms and network goods onto the data economy trunk. The digital economy has burgeoned—its individual players as well as the industry—sprawling out from China and the global north. It is bound to grow further as the global digital divide narrows. But problems of justice arise already today. Insofar as these problems are problems due to companies' size, the digital economy and its threats to justice will grow in concert.

This chapter outlined a framework for thinking about justice in the global digital economy. The framework consists of three main points. First, the digital economy should be thought of as digital infrastructure. Second, the digital economy compounds existing concerns of socio-economic injustice—issues of global inequality and insufficiency. Third, the digital economy raises four problems of political justice. The power wielded by the digital economy restricts what states can do, it deepens defects in domestic economic participation, political representation, and labor relations, it finds itself contributing to anti-democratic currents, and exacerbates the diplomatic power of already powerful states.

The point of identifying problems of justice is to do something about them. What can be done?

To fix price discrimination, a first route goes via competition. On a perfectly competitive market, price discrimination would be impossible. If Amazon charges you more for premium cat litter because they know your willingness to pay, Amazon's competitors might try to make you a better offer—given that the competitor knows about

Amazon's offer. So, price discrimination can be addressed by lowering search costs (via price transparency or via the dissemination of technology that predicts consumers' willingness to pay). Moreover, price discrimination could be addressed by distinguishing between permissible and impermissible price discrimination and enforcing a ban on the latter. However, given the difficulty of drawing this distinction, this latter avenue seems less promising.

The problems of socio-economic injustice, as suggested in the companion piece to this chapter, could be addressed through a digital services tax. On such a tax, each country has the right to tax a digital services company's global income proportional to the revenue that the company generated in this country. Normative arguments for such a policy and proposals for a global tax regime are being developed (Dietsch 2015; Kern 2020). The process of setting up such a tax may entail—that is, it may either presuppose or lead to the situation—that the balance of power shifts from economic interests to states.

The problems of political justice play out both domestically and internationally. Domestically, states should renew their efforts to reign in economic power. The powers that the digital economy wields domestically are not novel and may be hemmed in with known tools of antitrust and competition regulation. Internationally, the picture is different. A relatively easy start would be for the US to use its domestic power over the digital economy to shape how the companies behave abroad. This, of course, exploits the potential injustice of American global power instead of addressing it. But this may be a first step towards a recommendation that has to be—unfortunately—as vague as it is trite: Effective global governance is needed.

Thus, even though key problems of the digital economy have been identified and potential reforms sketched, the hard work remains yet to be done—intellectually, to articulate the procedural and substantive norms that injustices violate; and practically, to develop specific reforms and organize for their implementation.

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