DATA AND DEMOCRACY

Privacy, Autonomy, and the Dissolution of Markets

By Kiel Brennan-Marquez & Daniel Susser

KNIGHT
FIRST AMENDMENT
INSTITUTE at
COLUMBIA UNIVERSITY

In October 2020, the Knight First Amendment Institute at Columbia University convened a virtual symposium, titled "Data and Democracy," to investigate how technological advances relating to the collection, analysis, and manipulation of data are affecting democratic processes, and how the law must adapt to ensure the conditions for self-government. This symposium was organized by the Institute's 2019-2020 senior visiting research scholar, Yale Law Professor Amy Kapczynski, and co-sponsored by the Law and Political Economy Project at Yale Law School.

The essays in this series were originally presented and discussed at this two-day event. Written by scholars and experts in law, computer science, information studies, political science, and other disciplines, the essays focus on three areas that are both central to democratic governance and directly affected by advancing technologies and ever-increasing data collection: 1) public opinion formation and access to information; 2) the formation and exercise of public power; and 3) the political economy of data.

The symposium was conceptualized by Knight Institute staff, including Jameel Jaffer, executive director; Katy Glenn Bass, research director; Amy Kapczynski, senior visiting research scholar; Alex Abdo, litigation director; and Larry Siems, chief of staff. The essay series was edited by Glenn Bass and Kapczynski with additional support from Lorraine Kenny, communications director; A. Adam Glenn, writer/editor; Madeline Wood, research coordinator; Chand Rajendra-Nicolucci, research fellow; Kushal Dev, research fellow; and interns Nathaniel Low, Hana Kaur Mangat, and Ashwin Pillai.

The full series is available at knightcolumbia.org/research/

ABSTRACT

Throughout the 20th century, market capitalism was defended on parallel grounds. First, it promotes freedom by enabling individuals to exploit their own property and labor-power; second, it facilitates an efficient allocation and use of resources. Recently, however, both defenses have begun to unravel—as capitalism has moved into its "platform" phase. Today, the pursuit of allocative efficiency, bolstered by pervasive data surveillance, often undermines individual freedom rather than promoting it. And more fundamentally, the very idea that markets are necessary to achieve allocative efficiency has come under strain. Even supposing, for argument's sake, that the claim was true in the early 20th century when von Mises and Hayek pioneered it, advances in computing have rekindled the old "socialist calculation" debate. And this time around, markets—as information technology—are unlikely to have the upper hand.

All of this, we argue, raises an important set of governance questions regarding the political economy of the future. We focus on two: How much should our economic system prioritize freedom, and to what extent should it rely on markets? The arc of platform capitalism bends, increasingly, toward a system that neither prioritizes freedom nor relies on markets. And the dominant critical response, exemplified by Shoshana Zuboff's work, has been to call for a restoration of market capitalism. Longer term, however, we believe it would be more productive to think about how "postmarket" economic arrangements might promote freedom—or better yet, autonomy—even more effectively than markets, and to determine the practical steps necessary to realize that possibility.

INTRODUCTION

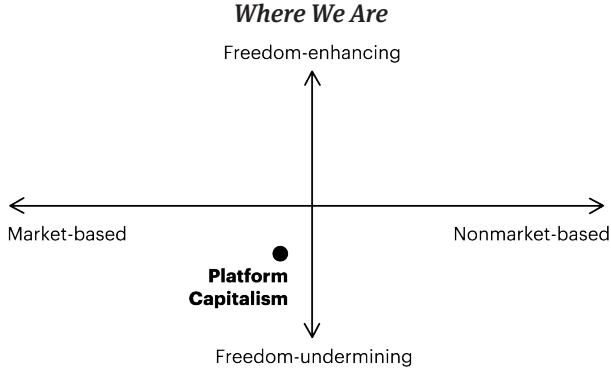
SINCE THE LATE 19TH CENTURY, "the market"—as a mechanism for determining the production and consumption of goods, and thereby organizing social life—has been justified primarily on two grounds. The first justification centers on freedom. By contrast to other modes of economic organization, the argument goes, markets allow individuals to act out their will through the unconstrained disposition of property, including human capital.[1] The second justification centers on efficiency. According to this view, markets are essentially an information technology—one that is capable, in a manner untrue of central planning, of solving the (essentially computational) problem of resource allocation.[2]

Historically, these justifications have been thought harmonious, even mutually reinforcing. For it is the same core feature of markets—the prioritization of individual choice—that facilitates liberal freedom and unleashes their computational power. By the time neoliberalism came to bloom in the late 1970s, this dyad verged, in many circles, on orthodoxy. The pro-market argument seemed overdetermined. Whether one's sensibilities gravitated toward utility or toward rights, the endgame was the same: deregulated exchange.[3]

Today, however, both justifications have come under strain. The freedom story, which has long met with skepticism from different factions of the left,[4] is now an object of mainstream critique. In a world marked by information companies that, in Julie E. Cohen's words, thrive on the "propertization, datafication, and platformization" of human behavior,[5] the capacity of individuals to self-determine—and the capacity of polities to self-govern—is under threat.[6] Meanwhile, the efficiency story has also started to unravel. The notion that markets are necessary to determine the optimal allocation of resources is, in the end, a claim about information processing. From this perspective, markets are simply a tool, no better or worse, in theory, than any other—making them susceptible to displacement by "algorithmic planning."[7] In other words, the old "socialist calculation" debate has returned. And this time around, markets seem less likely to prevail.[8]

In what follows, we explore the governance implications of these developments. To do so, we develop an analytic model for charting the nature and trajectory of different political-economic arrangements along two dimensions: how much they prioritize freedom and how much they rely on markets. Importantly, as we discuss below, "freedom" can mean many things, and the kind of freedom that markets promise may not be the same as that sought by proponents of planning. We suggest, however, that these conceptions of freedom are not wholly distinct either, and we aim, in part, to highlight their connections.

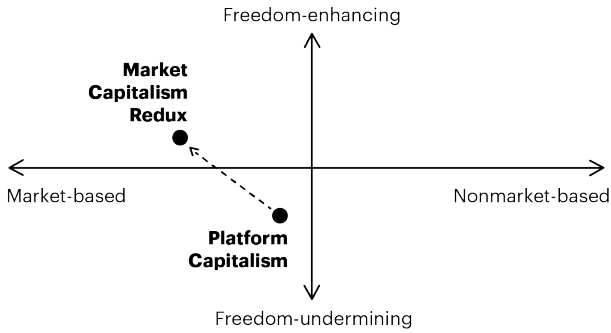
Platform capitalism today still relies, at least in part, on markets. But for the reasons explored at length by others, it undermines freedom.[9]



Our argument, broadly speaking, is that this combination—"yes" to markets, "no" to freedom—is unstable, so it is unlikely to persist. Rather, platform capitalism is poised to evolve (and in fact, may already be evolving) along one of three trajectories captured by the empty quadrants above. And the key questions for governance will be: (1) which trajectory do we prefer, and (2) what are the best political and legal mechanisms for realizing that trajectory?

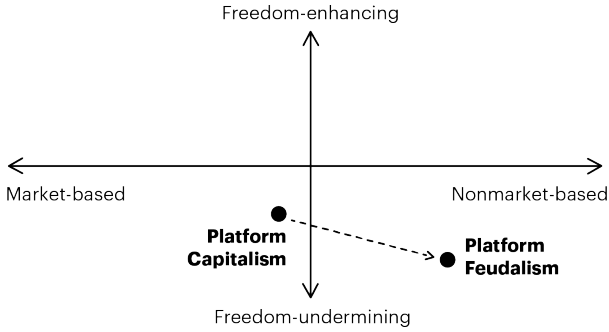
First, platform capitalism could be subject to newfound controls, designed to recover an older (gentler?) mode of market capitalism. This is the route that much existing scholarship, one way or another, tends to favor. Shoshana Zuboff's recent work on "surveillance capitalism" is only the flashiest example.[10] Legal scholars, and privacy scholars in particular, have long championed the view that somewhere along the way, postindustrial capitalism cut anchor with its pro-privacy—and freedom-enhancing—roots.

Choose Your Own Adventure, Political Economy Edition: Route No. 1



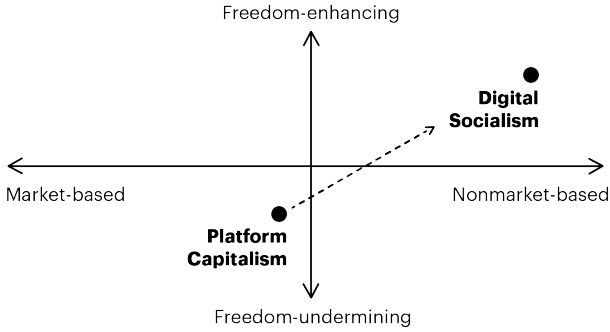
Second, platform capitalism, left unchecked, could metastasize into a social order that is neither freedom-enhancing nor market-based, something rather more like feudalism. This view has fewer champions (at least in public), but it certainly represents a viable future—particularly if we take seriously the risk, as Przemysław Pałka recently put it, that if recent techno-social trends continue, "mov[ing] from a market economy to an algorithmically planned economy" might occur "[a]lmost by accident."[11]

Choose Your Own Adventure, Political Economy Edition: Route No. 2



Third, platform capitalism could give way to its inverse: a social order that is no longer market-based, but that, by the same token, enhances freedom rather than undermining it. Evgeny Morozov recently described this possibility as "digital socialism,"[12] a label that echoes the work of numerous heterodox economists over the last decade.[13]

Choose Your Own Adventure, Political Economy Edition: Route No. 3



Here, our goal is neither to make any firm predictions between these three routes nor to take credit for the theories that underlie them. The idea is more modest. We wish to offer an organizing frame for thinking about the different routes: how they relate to one another and the conditions of possibility for each.

By the end, we hope to establish that the most difficult obstacle to route No. 3—digital socialism—is not computational, but social. The truly hard problem is not, technically speaking, how to devise a functional planning system (though that may be plenty hard). It is how to get people to furnish the planning system with necessary information in the absence of (1) market transactions or (2) extreme surveillance. Attention to this problem is especially important, we argue, because it suggests that efforts to realize route No. 3 run the risk, in practice, of instead bringing about route No. 2—platform feudalism. In fact, that too often seems to characterize our current trajectory.[14]

At a normative and policy level, moreover, it may also turn out that we do not wish to pursue any of the outlined trajectories fully. It could be, instead, that we wish to stop somewhere along the way—a political-economic system that combines the properties of more than one. After exploring distinctions between the various ideal-types traced above, the essay concludes by outlining avenues for further research into what such "hybrid" arrangements might involve, and what political, legal, and institutional mechanisms might encourage their fruition.

I. MARKETS AND FREEDOM

HISTORICALLY, THE DEFENSE OF MARKETS—and market capitalism—has taken many forms.[15] Some have approached the question through a deontological lens, arguing that the right to engage in market transactions simply follows from more fundamental rights, such as the right to own private property and to do with it what one wishes.[16] Others appeal to virtue, celebrating the alleged "civilizing" effect of markets on their participants. Marion Fourcade and Kieran Healy trace the notion of "doux commerce"—the gentle manner and spirit of cooperation engendered by material exchange—from Montesquieu to the present day.[17] But the strongest and most enduring defenses of markets are consequentialist. According to these accounts, markets do not just facilitate the exercise of more basic freedoms; they protect freedom itself. They do not merely enculturate gentle, cooperative exchange; they optimize it for maximum efficiency.

That markets are especially conducive to freedom is an idea familiar from

18th and 19th century liberal philosophy, but achieved its most enthusiastic expression in the mid-20th century.[18] Alarmed at rising support in the United States for democratic socialism—if not socialism outright—economists like Friedrich Hayek, Milton Friedman, and Rose Friedman felt compelled to make the case for markets, against the specter of central planning.[19] According to this view, the reason markets are conducive to freedom (and that central planning is inimical to it) is twofold. First, markets enable the expression of economic freedom—the ability to produce, consume, and exchange as one wishes—which, they contend, "in and of itself, is an extremely important part of total freedom."[20] Second, economic freedom in turn safeguards political freedom, "because it separates economic power from political power and in this way enables the one to offset the other."[21]

The conception of freedom motivating this account is a "negative" one.[22] To be free, for the Friedmans and their intellectual neighbors, is simply to be uncoerced—to be left alone to satisfy one's needs and desires as one chooses. Markets facilitate economic freedom, so understood, by ensuring that in production, consumption, and exchange no one is wholly reliant on—and thus beholden to—anyone else. "The consumer," the Friedmans once wrote, "is protected from coercion by the seller because of the presence of other sellers with whom he can deal. The seller is protected from coercion by the consumer because of other consumers to whom he can sell. The employee is protected from coercion by the employer because of other employers for whom he can work, and so on."[23] Where there are markets there are options, and where there are options there is freedom to choose.[24]

For its proponents, this account of negative freedom embeds an important political dimension. For political freedom, too, can be understood "negatively," i.e., as the absence of coercion by government.[25] And to the same extent that negative political freedom enables corresponding economic freedom—by eliminating the possibility of most (governmental) coercion—the arrow of influence also runs the other way. Negative economic freedom promotes political freedom by decentralizing power, or at any rate, depriving government of control over the economic sphere.[26]

Of course, every element of this story has detractors. Despite the appearance of voluntary exchange, critics argue that markets can be highly coercive when set against background conditions of severe inequality.[27] Rather than

enabling people to satisfy their desires, markets—and *marketing*—create them.[28] Far from "offsetting" political power, economic power amplifies it.[29] Instead of free choice unleashing productivity and allocative efficiency, cultures of consumption lead to greed and untold waste.[30]

Pitched so grandly, the theoretical dispute between market capitalism's enthusiasts and its detractors is unlikely to abate. But in recent years, a new set of worries has emerged in response to the rise of "platform capitalism."[31] Namely, even if market capitalism once *did* vindicate the freedoms described above—or even just assuming so for argument's sake—it no longer does. Having transitioned to its "platform" phase, capitalism is now alienated from (and perhaps even in tension with) the idea of individual freedom that originally grounded its appeal.

Platform capitalism describes a set of economic and social arrangements that took shape at the turn of the 21st century, as industrial manufacturing declined in the West and investors began shifting capital to the telecommunications sector—especially, the newly commercialized internet.[32] At the heart of these transformations is the rise of a particular type of firm—the platform—which, rather than making and selling goods, builds digital infrastructures designed to support a wide variety of interaction and commerce. Think Amazon, Uber, and Facebook. These companies are digital intermediaries; their business is connection. Amazon connects sellers to buyers. Uber connects drivers to riders. Facebook connects friends and family (and more importantly, advertisers to eyeballs).

But platforms are hardly run-of-the-mill infrastructures. They are designed, as Cohen puts it, for "data-based surplus extraction."[33] Which is to say, connection comes at a cost: In exchange for facilitating social interaction, commerce, and countless other activities, platforms "monopolise, extract, analyse, and use the increasingly large amounts of data" generated about those activities as they unfold.[34] Communicating on Facebook means making oneself and one's relationships objects of intense scrutiny for Facebook's algorithms; likewise, when making purchases on Amazon or hailing rides with Uber. For these companies, information about people's behaviors, preferences, relationships—anything at all that can be recorded by digital systems—is a kind of raw material, waiting to be appropriated. To use Cohen's term, information about our lives is treated, both by the firms that capture it and the legal structures

that sanction such capture, as a "biopolitical public domain."[35]

The rise of platform capitalism raises two issues for those concerned about freedom. First, if—as we saw above—markets are conducive to freedom because they generate options from which free individuals can voluntarily choose, then platforms are antithetical to it, because they tend toward market concentration and create high barriers to exit. The tendency toward concentration derives from "network effects"—the more people choose to interact on one platform, the more desirable that platform becomes. This dynamic "generates a cycle whereby more users beget more users," Srnicek explains, "which leads to platforms having a natural tendency toward monopolisation."[36] Yet even where there are options and there is the will to choose a different one, platforms make it difficult to leave. They are, as Cohen puts it, "disciplining infrastructures" that "operate with the goal of making clusters of transactions and relationships stickier—sticky enough to adhere to the platform despite participants' theoretical ability to exit and look elsewhere for other intermediation options."[37] To understand why, one need only entertain for a moment the hypothetical effort required to leave Apple's product ecosystem for Microsoft's, or (in the corporate sphere) to leave Salesforce's customer relations management infrastructure for a competitor's. Thus, in platform capitalism there are fewer, rather than more options, and the mere existence of options does not ensure the unfettered freedom to choose.

Second, an economy dominated by platforms is, in a literal sense, a surveillance economy—organized around the production, consumption, and exchange of personal information—and surveillance is a means of control. There are vast literatures exploring each dimension of this claim, but their significance and interconnection are given especially vivid expression in Zuboff's recent work on "surveillance capitalism."[38] In developing the business model discussed above, platforms like Google, Facebook, and their internet ilk not only created a new source of profit, Zuboff argues, they inaugurated a new kind of power—what Zuboff terms "instrumentarian power."[39] Fueled by information about people's beliefs, desires, behaviors, and relationships, which is often captured without their awareness (let alone consent), digital advertising, content recommender systems, AI voice assistants, and related technologies are more than new tools for selling. They are, as Zuboff puts it, "a pervasive and unprecedented means

of behavioral modification" that is, in its pursuit of efficiency, "radically indifferent" to human agency and autonomy.[40] In other words, beyond structuring exchange in a way that diminishes options and thwarts choice, platforms aim, in many cases, to exert influence over human decision-making and behavior, posing a threat to freedom understood not in the "negative" sense, explored above, but in the richer, "positive" sense of individual self-determination.[41]

The response to these developments, put forward by scholars and advocates, has largely been to encourage a return to old-fashioned market capitalism by way of strengthened privacy protections. Zuboff, for example, though noncommittal in her written work about paths forward out of surveillance capitalism, has indicated as much in interviews, arguing that bringing this "rogue capitalism" to heel requires outlawing the surveillance practices that power it.[42]

Some may find this approach disappointing—perhaps radical problems like those described above deserve a more radical response. For present purposes, what is valuable about these proposals is that they highlight another virtue of markets, underexplored by market capitalism's traditional defenders—namely, markets are (or, at least, they can be) *privacy-preserving*. Unlike platforms, which capture and consolidate personal information, markets distribute and anonymize it, coordinating economic activity via prices. Their beauty, as Hayek wrote, lies in the fact that markets need no centralized, panoptic view:

> The whole acts as one market, not because any of its members survey the whole field, but because their limited individual fields of vision sufficiently overlap so that through many intermediaries the relevant information is communicated to all. The mere fact that there is one price for any commodity … brings about the solution which (it is just conceptually possible) might have been arrived at by one single mind possessing all the information which is in fact dispersed among all the people involved in the process.[43]

Or, as Ryan Calo puts it: "markets furnish the theoretical means by which to distribute resources in society without having to know everything about everyone."[44]

As we discuss in the next part, this, for Hayek, is an epistemic and logistical triumph. But it is also a triumph for privacy. This matters, because—as Zuboff's argument illustrates in the negative—privacy is necessary for the exercise of autonomy. Beyond arguments that markets are conducive to freedom in a thin, Friedmanian sense—freedom as the ability to choose among options—this reveals that they could also be freedom-promoting in a positive sense—freedom as independent, autonomous decision-making. How we might put this insight to work is the subject of Part IV.

II. MARKETS AS (OBSOLETE?) INFORMATION TECHNOLOGY

THE SECOND DEFENSE OF MARKETS—often articulated alongside the freedom rationale—focuses on logistical capacity. On this view, markets are essentially an information technology: a "distributed system" for collecting and analyzing the enormous quantities of complex, multifarious data associated with production and consumption.[45] And the core achievement of markets, accordingly, is coherent distillation. From an otherwise unmanageable morass of information emerges, as though by magic, easily understood outputs—prices—that allow for (1) economic coordination between diffuse actors with divergent incentives and preferences, as well as variant levels of sophistication,[46] and (2) efficient allocation of resources across the board.[47]

Like many of the arguments explored above, this one has a long vintage. Inaugurated in the early 20th century by Ludwig von Mises, and developed more systematically thereafter by Hayek and his disciples,[48] the focus on the *capacity* of markets, rather than any particular outcome or set of outcomes they produce, has considerable appeal. At some level, it reframes the whole debate. According to von Mises and Hayek, the key question is not whether markets process information perfectly—since, of course, they do not—but rather, whether they process information better than every conceivable alternative.

In this sense, the logistical argument in favor of markets finds a rough analogy in Churchill's famous quip about democracy: Lamentable as any

specific result may seem, we have solid grounds to grant the mechanism's general superiority, at least compared to other practicable options. And in both settings, political and economic, the fundamental problem is the same: We lack an Archimedean vantage point from which to evaluate the quality of outcomes. This gives the selection process—voting in the political realm, and transacting in the economic—a self-referential quality. Outcomes become desirable *insofar* as they are voted or transacted for; the fact of their selection is, at least in part, what makes them valuable. In the economic sphere, the relevant outcomes are not officeholders and policies, but costs, prices, and organizational arrangements. As Hayek put it:

> [T]hough we are in the habit of arguing in theory as if costs were a 'datum,' that is, given knowledge, the lowest costs at which a thing can be produced are exactly what we want competition to discover. They are not necessarily known to anyone but [the producer] who has succeeded in discovering them—and even [that producer] will often not be aware what it is that enables [cheaper production] ... [Indeed, even the question of optimal firm size] is as much one of the unknowns to be discovered by the market process as the prices, quantities, or qualities of the goods to be produced and sold.[49]

Formally speaking, it is easy to see why this argument is vulnerable to empirical critique. Because it depends on a claim about relative (rather than absolute) superiority, the advent of any new logistical mechanism for allocating resources might, in principle, undercut the argument. And to some observers, that is just what contemporary computing—especially machine learning and AI—seems to offer: a logistical mechanism that will soon claim (and in some domains, may already be able to claim) allocative superiority over markets.

To evaluate the necessity of markets for allocative efficiency—the viability of the Hayekian account—it will be useful to decompose the logistical defense of markets into two component strands. The strands are complementary; both have to do, in a broad sense, with information. But they diverge analytically and invite distinct empirical considerations.

The first strand is computational. The idea is, to borrow Eric Posner and Glen Weyl's formulation, that markets are essentially one grand

parallel-processing device.[50] "In some sense," they write, "the 'market' is ... a giant computer composed of ... smaller but still very powerful computers [in the form of human minds]."[51] Using prices as their key signaling mechanism, "[m]arkets elegantly exploit distributed human computational capacity,"[52] even when—as is often the case—individual humans know extremely little about the substance and provenance of the goods and services for which they are transacting moment to moment. Prices serve as a proxy for these more intricate variables. And misalignments work themselves out through further signaling over time.

The second strand is about how markets encourage the dissemination of information. Here, the focus is not on markets as informational gristmills, but as producers of grist; market structures encourage people to behave economically in ways that supply useful information to other actors in the system. Sometimes, this dynamic is emergent or epiphenomenal. For example, simply by transacting for goods and services as normal, consumers and producers release valuable information to the market writ large; other consumers and producers can modify their own conduct in response.[53] Other times, the dynamic involves a more conscious and explicit commodification of information: Parties with exclusive access to valuable information reveal it to others in exchange for something else of value. For example, a financial analyst might perform research into firms that are operating subefficiently and then supply that information to financiers scouting takeover opportunities.[54] Likewise, Consumer Reports—or consumer-focused branches of mainstream media companies, like Wirecutter—may test different products and monetize the resulting insights.[55]

Of course, markets do not always succeed at encouraging dissemination of the right kind of information. But the exceptions—informational market failures that require legal intervention, typically in the form of disclosure obligations[56]—only underscore the norm. That is, the fact that we sometimes need to compel market participants to share information is, if anything, a reminder of how effortlessly the process normally occurs. For example, publicly traded companies are required to disclose certain aspects of their operations, but for the most part, information about such companies is generated by voluntary transactions—the prices they charge for goods, the information they share in the course of collaborating with other firms, and so on.[57]

Of the two strands, the computational turns out to pose the much easier problem. In fact, the idea that computers may soon be able to replicate, and plausibly surpass, the decentralized processing capacity of the market runs deep. It dates back at least as far as Oskar Lange's seminal 1965 essay, "The Computer and the Market,"[58] which theorized "the market process ... as a computing device of the pre-electronic age,"[59] which could be supplanted, in theory, by actual computers, breathing life back into the idea of central planning. Indeed, Lange's theory was so compelling, it inspired the Allende regime in Chile to implement an ambitious computer-driven planning project called Cybersyn, a sort of proto-internet designed to network all aspects of the Chilean economy (but cut short by the 1973 coup).

Since then, the idea has resurfaced cyclically in academic commentary,[60] with particular energy in the last five years as the computational strides of machine learning have become more apparent.[61] Among technology-focused leftists, there is a growing sense that "digital socialism" has become a genuine possibility; the dream of a democratically planned economy may finally ripen to fruition. Debate exists about when, precisely, computers will reach the point of replicating the market's computational power—if they have not already done so.[62] But there can be little doubt that the problem falls within the formal reach of current computing techniques.[63] It is only a matter of time.

The second strand poses the harder problem: In the absence of markets, what facilitates the production and dissemination of the right sort of information—on an ongoing, dynamic basis—across the economy? The difficulty of this question stems from its social quality. The question involves what engineers and entrepreneurs often describe as the most unwieldy variable of all: the user.[64] Given that, how can planners ensure the dynamic updating of relevant information over time?

This difficulty has plagued the "socialist calculation" debate since its inception. In response to the optimism of Lange—and other leftists who thought computers would purify central planning—the rejoinder from skeptics like Hayek was precisely to emphasize the difficulties of dynamic updating. As Hayek saw it, "[T]he problem for planners was not in the 'how'—[which] equations to use—but in the 'what'—the data that goes into the equations."[65] That is, "only the market can bring together the information

that is normally isolated in the heads of different individuals."[66] Or as contemporary economist Jesús Fernández-Villaverde recently put it: In the end, the most devastating "objection ... to central planning" is not computational, but rather, "that the information one needs to undertake [such planning] is dispersed and, in the absence of a market system, agents will never have the incentives to reveal it or even to create new information through entrepreneurial and innovative activity."[67] In other words:

> The fundamental barrier to planning is that information is dispersed and agents do not have incentives (and often not even the capabilities) to disclose such information to a central planner. The trouble with the Soviet Union was not that its computers were not powerful enough (although they were not) or that its planning algorithms were poor (they were terrible), it was that central planning is, as medieval scholastics loved to say, inefficient *in essentia sua.*[68]

Morozov has proposed a helpful label for this problem: "feedback infrastructure."[69] The viability of economic planning depends, ultimately, on the capacity to determine how allocative needs evolve over time: tracing "the hyper-complexity of social organization in fast-changing environments."[70] And in practice, all environments of interest will be—or be on the verge of becoming—"fast-changing."[71]

The feedback infrastructure problem, which harks back to Hayek's original writings on the subject,[72] is not one that more data can solve by itself. Nor, moreover, is it enough to simply imagine alternate channels of feedback. That would be straightforward enough; after all, humans engage in nonmarket forms of informational feedback all the time.[73] But the question is not whether humans can be inspired to share information in ways that do not involve commercial exchange—of course they can. The question is whether a nonmarket system of feedback can be configured to replicate, or even surpass, the feedback capacity of the market.

This is largely, if not entirely, an issue of incentives. In the absence of market-based incentives, what would inspire people, at scale, to share (1) the sort of information (willingness to pay and so on) that they automatically share in the course of their transactional lives, and (2) monetizable information that has to be produced or discovered at cost—and, in many instances,

only exists because of the promise of an eventual return.[74] So when, for example, Daniel Saros imagines "a General Catalogue, something of a mix between Amazon and Google, where producers … list their products and services … [and where consumers] register their needs … at the beginning of each production cycle,"[75] the question is how to ensure that producers and consumers do so accurately.[76] The more the system employs levers that tie actors' economic well-being to the quality of information they produce, the more marketesque its operation is likely to become. [77]

III. FREEDOM WITHOUT MARKETS?

THE FEEDBACK INFRASTRUCTURE question is especially important today, because in some sense, we already live in—or at least find ourselves rapidly approaching—a post-market social order. And in terms of feedback infrastructure, it is a social order built on surveillance. That is, instead of requiring or incentivizing individuals to continually provide relevant information to (corporate) planners, the information is collected directly, often as the epiphenomenal result of platform interactions.

Information companies have realized, in other words, that surveillance has the capacity to circumvent the feedback infrastructure problem.[78] As it becomes easier to pry information loose without the consent—or even the awareness—of the parties who hold it, the importance of voluntary sharing wanes.[79] If, for example, information about consumer preference can be inferred from a combination of digital footprint data (search history, etc.) and biometric data like eye movement, it becomes unnecessary to actually ask people about their preferences, let alone to compensate them for the trouble.[80] In fact, as data surveillance techniques become more sophisticated, self-reported information is likely to be less reliable, on balance, than its data-inferred equivalent. The human brain is many things, but perfect information-retrieval software it is not.

To appreciate the point more concretely, consider, for example, Posner and Weyl's vision of a plausibly near-future economic order, founded on an intensified version of existing data surveillance:

> [Imagine a] central planning machine [that] could derive information from people's behavior—as well as from their physical and psychological attributes, to the extent these are observable—[just as] Netflix or Amazon does today … draw[ing] on the data traces the person has left in the world, deriving estimates of preferences based on how people who have produced similar data traces have acted in similar conditions. This is the domain of machine learning. If people's phones show they are physically active, prone to call their parents, and enthusiastic about taking photos; their Netflix account shows that they like animated movies and romantic comedies; and their search record shows an interest in climate regulation … then it may turn out that a Prius is the car for them, and [it could simply] show up at their door.[81]

In a system like this, users would simply be able to "accept goods and services sent to them by computer programs," trusting in "the collective intelligence created by digital computation and dispersed human sensory perceptions," relieved of the burden of assessing (and revealing) preferences for themselves.[82] At its limit, Posner and Weyl suggest, "[a] 'market' may no longer be the right word for [this kind of] economic organization."[83] Though, they hasten to add, "central planning might not, either."[84]

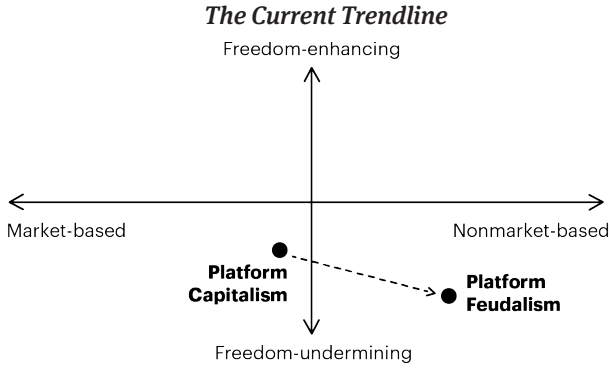
Przemysław Pałka recently sketched a similar sort of vignette, one that aims—in his words—to capture the day-to-day reality of "living a centrally planned life" in the age of powerful algorithms:

> Imagine you wake up to an alarm-clock tune that makes you happy and at the time that renders you refreshed and well-rested. You picked neither the tune nor the hour; an algorithm did, based on data about you and millions of others. You take a shower and put on comfortable and good-looking clothes. You are not sure how they got into the wardrobe, and at this point you no longer care. In the kitchen, a pre-cooked, drone-delivered breakfast waits for you. Exactly what you feel like eating. Your smart device tells you when the electric car will pick you up, and what work you will perform today. In the workplace, you feel challenged, but not exhausted. Lunch is great; you eat what you like with the people you find amusing. At the end of the day you go on a date with a person that you have never met. You go to see an interesting movie, then enjoy a delicious dinner, none of which you chose. Why do you

and your date have so much in common? Why is this such a perfect match? These questions do not cross your mind anymore. Most of the time, it is a perfect match.

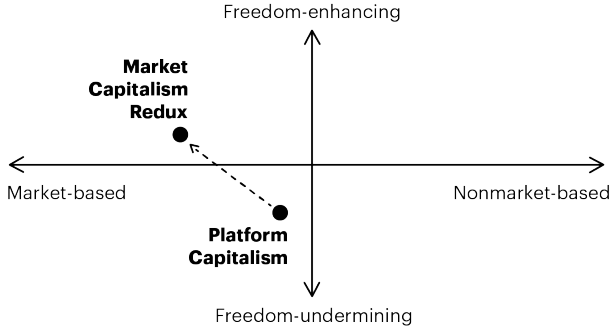
Every now and then there are glitches, of course. That is why you are asked to rate as many experiences as possible and to provide feedback along various dimensions. This feedback is taken into account. … You can express discontent as much as you like; we will make sure your life improves. You get what you want. To a degree. Sometimes, you get things you never even knew you would enjoy. There are, of course, things you cannot do. You cannot take two weeks off and fly to the tropics more often than once every few years. Then again, no one you know can do that. And from what you learn about history, most people could have never done that before, either.[85]

These snapshots are not meant to capture life today as it actually is. Rather, they are meant to project today's trends—hyperbolically—into the future: to ask what a social order founded on similar precepts might look like once its internal logic is maximally realized. Furthermore, the visions of both Posner and Weyl, and of Pałka, suggest that we may already be in the midst of transition. If "platform capitalism" can be described, broadly, as a market-based—or partly market-based—economic order that deprioritizes individual freedom, we are heading toward an economic order that involves neither freedom nor markets.[86]



From a governance perspective, the important question is whether, and why, freedom and markets—or both—should be preserved in the political-economic arrangements of the future. As we trace in Part I, there is a growing sense among concerned observers that freedom is worth recovering, even if doing so comes at the expense of allocative efficiency. For these observers, the governance priority is as follows:

The "Rescue Capitalism From Itself" Solution



This form of solution—using policy levers to limit the excess of new, especially startling modes of capitalism—has a rich pedigree. It has been the dominant mode of reform since the Progressive Era; at some level, the idea of using structural parameters to ensure the vitality of markets, and by extension, market capitalism writ large, is the animating ideal of the post-New Deal administrative state.[87] This is explicitly the case with antitrust law,[88] as well as classical labor law.[89] But it also resonates with the broader project of *regulation* as a core mode of governance.[90] Not surprisingly, the legal commentators who have called for a retrenchment of platform capitalism—pushing back in the direction of its "market" counterpart—have emphasized the use of traditional regulatory tools,[91] coupled with self-help mechanisms that harmonize with (and are readily produced by) market capitalism itself.[92] Indeed, privacy scholars have often been leaders of the charge, pointing to traditional information controls as a means of limiting the centralization of decision-making and ensuring the importance of markets.[93]

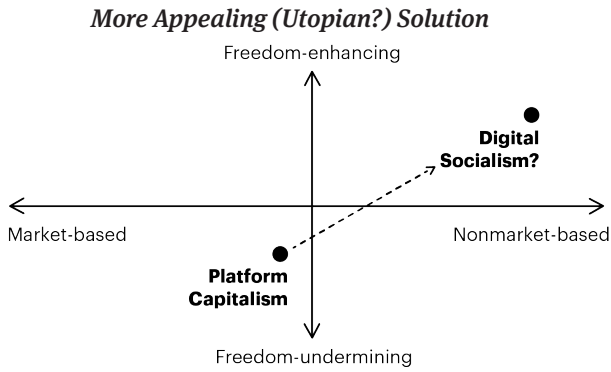
What all this underscores, ultimately, is that "market capitalism" is a porous category. It can take many forms—ranging from the regulation-heavy

welfarism associated with Europe, especially Scandinavia, to the more laissez-faire style neoliberalism associated with the United States and parts of East Asia. Indeed, there is a sense in which most mainstream governance debates in the postwar West have taken shape *within* the landscape of "market capitalism." That is, in terms of the analytic taxonomy set forth here, mainstream political positions tend to uniformly occupy the upper-left quadrant. But that is exactly the point. By grouping all (or virtually all) mainstream positions under a common banner, we do not mean to flatten all distinctions among them; many are important. Rather, the goal is to highlight other possibilities—which are becoming increasingly viable *technologically*, if not politically—that a too-narrow focus on market capitalism risks obscuring.

Likewise, just as our analysis does not mean to imply that all modes of market capitalism are equivalent, it neither means to suggest that a restoration of market capitalism—by reining in its platform counterpart—is the wrong governance strategy. It could be the right one. In any event, it is certainly easy to see the appeal of that strategy insofar as the question has been framed as a contest between restoring market capitalism, on the one hand, and pursuing the current trendline—toward platform feudalism—on the other.

That is, if the choice is framed in terms of a standoff between market capitalism and platform feudalism, it is not hard to see why someone skeptical of markets—not to mention market enthusiasts—would favor the upper-left quadrant over the bottom-right. As we move from the realm of ideal theory to the realm of practical governance, known-quantity compromises go a long way.

But the discussion of feedback infrastructure also invites speculation toward a third solution: one that facilitates freedom while looking beyond markets as the core allocative mechanism of the economy. For short, we refer to this set of solutions as "digital socialism," though we mean the label as neutrally as possible. The idea is not to assume, or advocate for, full state control over the means of planning. Rather, the idea is that, *whatever* the exact mix of private and public elements, the main mode of determining which goods and services are routed to which consumers would be something centralized—planning infrastructure—rather than decentralized transactions.



What are the necessary ingredients of this approach? At a minimum, per the analysis in Part II above, it would require a conceptually satisfying and practicable solution to the "feedback infrastructure" puzzle. That is, how can individuals be encouraged to reveal accurate information about their needs and preferences—on a dynamic, ongoing basis—in the absence of both (1) market transactions and (2) extreme surveillance?

The most promising answer, to date, comes from Saros. In *Information Technology and Socialist Construction*, Saros envisions a future in which markets give way to a "general catalog"—essentially a socialized, democratically controlled version of Amazon—into which consumers submit lists of preferences, "worker councils" submit lists of products, and algorithms are used to match the two in an optimal, dynamically updating manner.[94] There are many nuances to Saros' proposal; a full accounting would merit an essay unto itself.[95] He deserves credit for devising such an "elegant" alternative to market capitalism,[96] and many of his specific proposals—for example, giving consumers bonus-style incentives to make accurate predictions about their needs over time—would surely find their way into any plausible variant of "digital socialism."

In the end, however, Saros is forced to revert to market-style feedback infrastructure to solve the very informational problem that his "general catalog" purports to address. The reason that consumers and producers ultimately would be expected to furnish the catalog with accurate, up-to-date information is that they would derive individualized value from doing so; the system would rely on incentives in the form of "discounts" to hedge against gamesmanship in the planning process. In other words, there would

be a market for allocative entitlements—not a market dictated by commodification and monetary exchange, but an informational market designed to aggregate individual preferences and, over time, equilibrate production decisions accordingly.[97]

That is to say, Saros' proposal is limited by the way it imagines the problem of allocation—in purely technical, rather than political, terms. For Saros, the question of which products to make and how to distribute them is, at bottom, a utility-optimization problem, organized around the tastes of individual consumers. In this respect (if only this respect), his solution has something essential in common with market capitalism: Both cast individual preferences, rather than collective will, as the fundamental unit of economic salience—and the difference lies in how each system goes about measuring, weighing, and operationalizing those preferences.[98]

None of this is to say Saros' proposal is wrong on the merits. The system he envisions may indeed promise benefits over the status quo; even more than that, it may also correct for certain historical pathologies of market capitalism. (Both of those claims strike us as plausible.) In fact, there are economic-theoretical reasons to think an algorithmic planning system that nevertheless employs a price mechanism—of the kind originally envisioned by Lange—may be preferable, in concept, to an equivalent system that relies on quantity controls. In general, price controls more efficiently minimize the costs of error (at least under plausible starting assumptions) than equivalent quantity controls.[99] And the general point may carry over to algorithmic planning systems as well.[100]

Ultimately, the important takeaway from Saros' book is less the specifics of his proposal than the broader question it raises. Namely, what would a more robustly political mode of digital socialism—one that infused the planning process *itself* with greater democratic control—require? At a minimum, it would need to rely on more than just individual incentives to solve the "feedback infrastructure" problem. In other words, diffuse economic actors would likely need reasons apart from (and possibly in addition to) their own well-being to keep the planning system updated with relevant information. They would, in short, have to trust the system: to maintain faith that, whatever its inevitable disappointments, the planning process is geared toward the advancement of common, democratically chosen goals.[101]

IV. FREEDOM WITH MARKETS (AND PLANNING)?

FOR THOSE CONTENT with the sort of freedom that market capitalism promises—freedom of choice—new regulatory interventions, designed to rein in platform capitalism's worst abuses, should suffice. Vigorous antitrust action might restore competition, and the strengthening of privacy laws could curtail attempts by tech platforms to engage in the forms of "behavior modification" that Zuboff indicts. Those pursuing socialism, however, aim for something more. Freedom of choice, the negative freedom from unwanted interference, is necessary but insufficient, they argue—it is merely "formal" freedom. "Real" freedom, by contrast, is the positive freedom to formulate and enact one's aims. It is "a conception of freedom as autonomy."[102]

Freedom as autonomy (or "self-development") is, Carol Gould argues, both the absence of "constraining conditions" *and the presence* of "enabling conditions."[103] It is having options as well as the means to avail oneself of them. Although this terminology is recent, Jon Elster finds the underlying idea—that we ought not to conflate having options with the freedom to exercise them—in Marx:

> The idea that the freedom of the worker to change employer makes him free in a way not found in earlier modes of production was a commonplace one at Marx's time. … When Marx refers to it, he unfailingly adds (i) that the worker depends on capital even if he does not depend on any particular capitalist and (ii) that the independence in the latter sense hides the real dependence in the former sense.[104]

Real freedom cannot be realized, Gould says, "if the material means of well-being are lacking or are so inequitably distributed that some individuals are totally dependent on others for their livelihood."[105] Suspicion toward markets and the desire for planning follows: Though markets reliably proliferate options, they are notoriously bad at equitably distributing the material prerequisites for exercising them.

For those who see in digital technologies a renewed path toward achieving this more substantive vision of freedom, the arguments advanced in this

essay offer both reason for optimism and reason for caution. On one hand, digital technologies may yet solve one of the great logistical challenges standing in socialism's way—that of planning—and thus neutralize claims about the necessity of markets for allocative efficiency. On the other hand, unless the feedback infrastructure problem can be addressed without resorting to extensive surveillance, algorithmic planning could be a Pyrrhic victory, the drive toward digital socialism landing us in platform feudalism instead.

Yet the above discussion also suggests—perhaps counterintuitively—that while markets may not be necessary, if properly managed they can be *useful*, especially for solving the surveillance problem. Though proponents of markets typically celebrate their ability to decentralize economic coordination as a victory for efficiency, by enabling coordination without the concentration of information—which is to say, without surveillance—markets can be a valuable tool for preserving market actors' privacy too. This should be of interest to those advocating digital socialism and the positive freedom it promises, because philosophers and legal theorists have long argued that privacy is an essential ingredient—an "enabling condition"—for autonomy.[106] Formulating and enacting one's own aims requires some amount of (literal and metaphorical) space free from observation and judgment: "Why do we like having 'a room of one's own'," Beate Rössler asks, "Why do we want it to be in our hands what our colleagues know about our private life? Because all of this ... would encroach upon our autonomy. To be able to ask oneself authentically who one is and how one would like to live, it is necessary to have possibilities for withdrawing from the gaze of other people."[107]

Put differently, rather than new privacy regulations rescuing markets from platform capitalism (as Zuboff and others imagine), markets—carefully deployed and meaningfully constrained—might rescue privacy. The question is: Can the benefits of markets (more options, more privacy) and the benefits of planning (more equitably distributed material conditions for autonomy) be harnessed simultaneously, while minimizing their costs? There is a long tradition of "market socialism," some proponents of which argue that the injustices of market capitalism are not a consequence of markets per se, but rather of wage labor and private ownership of the means of production.[108] Were these other conditions altered, markets could be justly and productively utilized. Moreover, we already live, to some extent, in mixed economies.

It's just that decisions about which parts to plan and which to give over to markets are reached without consideration of the trade-offs discussed throughout this article. What if markets were treated as a tool—an optional one, useful for solving certain problems in certain circumstances, but also susceptible to misapplication and abuse—rather than an indispensable and unavoidable feature of modern life?

In this thought experiment, the notion of "market dependence" is a helpful guiding principle. Exchange via markets long predates capitalism. What changes under capitalism, Ellen Meiksins Wood argues, is that markets become totalizing and market participation compulsory. For all its promises of choices and the freedom to choose, capitalism *forces* us into markets by making us dependent on them for even the basic means of survival—food, shelter, and so on. This is the "real dependence" Elster describes above. As long as these necessities are accessible only via markets, people have no choice but to sell their labor in order to secure them, and once subject to this imperative they become subject to capitalism's other imperatives too: "This unique system of market-dependence means that the dictates of the capitalist market—its imperatives of competition, accumulation, profit-maximization, and increasing labour-productivity—regulate not only all economic transactions but social relations in general," Wood argues.[109] Or, as Mike Konczal writes, "What is unique today is how the economy has been restructured to extend and accelerate our reliance on markets to all aspects of society."[110]

A proper balance of markets and planning would likely require undoing, or at least curtailing, this dependence. Certain goods and services—like food, shelter, health care, and education—are essential to autonomy in virtually any account of that ideal, and there are good reasons, both conceptual and empirical, to be skeptical about market-based approaches to allocating them.

Other goods—certain kinds of luxury goods, for example—raise fewer concerns about universal access (and associated worries about fairness), making market-based allocation prima facie more appealing. Indeed, market-based allocation may be especially well-suited for goods that require ongoing iteration and innovation, given the ready-made mechanism of experimentation—making goods available for purchase and observing how consumers respond—that markets naturally invite.[111] Furthermore, as the discussion in previous sections suggested, there may be areas of economic

life where markets are superior to planning on privacy and/or autonomy grounds. Choices about goods closely tied to individual identity and personality—intellectual and cultural goods, for instance, like books, music, movies, and entertainment—are particularly revealing, raising special privacy concerns and making the relative anonymity of market coordination attractive. Certain aspects of labor likely fall into this category too: being able to choose, say, which firm one works for (and knowing that it is possible to switch firms) is among market capitalism's autonomy-enhancing, rather than autonomy-undermining, properties.

Ultimately, our goal is not to resolve these complexities, or even to offer abstract recommendations. In the end, the right combination of market and nonmarket allocative structures is a political question. Our aim in this final part, like in the analytic framework that preceded it, has been to give a sense of the political question's structure, and of the variables that might bear on its answer. The actual content of that answer, however, is something that requires negotiation—and judgment—in particular contexts.

CONCLUSION

THE ORTHODOX CASE for markets is losing force. In digital economies, markets do less to proliferate options—and less, accordingly, to facilitate freedom of choice—than they do to intensify capture and control. Furthermore, as computing power grows, our need to rely on markets as engines of efficiency diminishes. Absent these normative foundations, even the most enthusiastic proponents of market ordering ought to pause and take stock. (And, needless to say, those for whom the orthodox story was never persuasive now have more reason to be skeptical.)

The purpose of our argument has not been to close off conceptual space. In fact, just the opposite: We aim to enlarge the set of possibilities that, throughout the 20th century, due to the hegemony of a market-triumphalist story, remained lamentably constrained. The unraveling of that story provides an opportunity for alternatives to blossom. "Digital socialism" is one such alternative. But as we have seen, significant obstacles remain in its way—and failing to reckon with those obstacles risks sending us down the

path of digital feudalism. Going forward, then, the task will be to chart a conceptual—and practical—course through this thicket. The goal, as ever, will be to keep the promise of radical possibilities alive while ensuring the functional dangers of such promise are kept to a minimum. This is not an easy task. But it has always, at bottom, been the central task of political-economic critique.

NOTES

1 For the foundational text on this topic, see MILTON FRIEDMAN & ROSE FRIEDMAN, CAPITALISM AND FREEDOM (1962). On the point about human capital in particular, see ORLY LOBEL, TALENT WANTS TO BE FREE: WE SHOULD LEARN TO LOVE LEAKS, RAIDS, AND FREE RIDING (2013).

2 See FRIEDRICH A. HAYEK, THE USE OF KNOWLEDGE IN SOCIETY (1945); *see also* HAYEK: A COLLABORATIVE BIOGRAPHY: PART II AUSTRIA, AMERICA AND THE RISK OF HITLER, 1899–1933, at 70 (Robert Leeson ed., 2014) [hereinafter HAYEK: A COLLECTIVE BIOGRAPHY] (stating that Hayek categorized the market as "a system of the utilization of knowledge, . . . which only through the market situation leads people to aim at the needs of people who they do not know, make use of facilities for which they have no direct information, all this condensed in abstract signals, and that our whole modern wealth and production could arise only thanks to this mechanism").

3 David Harvey writes on this point succinctly. The central proposition of neoliberalism, according to Harvey, is "that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade." DAVID HARVEY, A BRIEF HISTORY OF NEOLIBERALISM 2 (2005).

4 For a concise explanation of the classical Marxist critique of the "capitalism and freedom" view, see David L. Prychitko, *Marxism and Decentralized Socialism*, 2 CRITICAL REV. 127 (1988).

5 JULIE E. COHEN, BETWEEN TRUTH AND POWER: THE LEGAL CONSTRUCTIONS OF INFORMATIONAL CAPITALISM 15 (2019). Consider a few concrete examples. Many of us do much of our shopping on Amazon. *See* TECHNOLOGY MEDIATED SERVICE ENCOUNTERS 6 (Pilar Garcés-Conejos Blitvich et al. eds., 2019) ("In 2016, 53% of internet users made an online purchase, that is roughly 1 billion users. . . . [A]ccording to Nielson reports 2010, the aspect of our lives most deeply transformed by the Internet is how we shop for goods and services."). We commute to work by Uber, order lunch through Seamless, and in the evening we turn on Netflix to relax. But that is just the visible tip of a digital iceberg. Keeping track of our diet and exercise, staying in touch with friends and relatives, going to school, buying a house—experiences that were once only incidentally, if at all, intertwined with digital technologies—are now inextricably digital. *See* EMERGING DIGITAL SPACES IN CONTEMPORARY SOCIETY (Phillip Kalantzis-Cope & Karim Gherab-Martin eds., 2010) (a collection of works with the common theme that "the digital" is encroaching, reformulating, and creating social spaces); Stephen T. Asma, *This Friendship Has Been Digitized*, N.Y. TIMES, Mar. 24, 2019, at SR10. Even things we still do largely in the "real world" (as opposed to online, through computers or smartphones)—walking around, driving a car, buying groceries—all generate vast stores of data, captured by digital systems and used to fuel powerful decision-making algorithms. *See* John R. Quain, *Your Car Is Keeping Tabs on You. So Who's It Tattling to?*, N.Y. TIMES, July 28, 2017, at B4; Ariana Eunjung Cha, *The Human Upgrade: The Revolution Will be Digitized*, WASH. POST (May 9, 2015), https://www.washingtonpost.com/sf/national/2015/05/09/the-revolution-will-be-digitized/ [https://perma.cc/7HYJ-MY4V]; Donna Ferguson, *How Supermarkets Get Your Data—and What They Do with It*, THE GUARDIAN (June 8, 2013), https://www.theguardian.com/money/2013/jun/08/supermarkets-get-your-data [https://perma.cc/F3NM-RYLB].

6 *See* Frank Pasquale, *Privacy, Autonomy, and Internet Platforms*, *in* PRIVACY IN THE MODERN AGE: THE SEARCH FOR SOLUTIONS 165–73 (Marc Rotenberg et al. eds., 2015); Amy Kapczynski, *The Law of Information Capitalism*, 129 YALE L. J. 1460 (2020) (reviewing SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER (2019) & COHEN, *supra* note 5); Lina M. Khan & David E. Pozen, *A Skeptical View of Information Fiduciaries*, 133 HARV. L. REV. 797 (2019); Colin J. Bennett & David Lyon, *Data-Driven Elections: Implications and Challenges for Democratic Societies*, 8 INTERNET POL'Y REV. 1 (2019); Julie E. Cohen, *What Privacy Is For*, 126 HARV. L. REV. 1904 (2013); John Laider, *High Tech Is Watching You*, HARV. GAZETTE (Mar. 4, 2019), https://news.harvard.edu/gazette/story/2019/03/harvard-professor-says-surveillance-capitalism-is-undermining-democracy/ [https://perma.cc/H4D3-PD74]; *see also* Michele Gilman & Rebecca Green, *The Surveillance Gap: The Harms of Extreme Privacy and Data Marginalization*, 42 N.Y.U. REV. L. & SOC. CHANGE 253 (2018) (arguing that underrepresented groups who typically remain outside mainstream data flows reside in a "surveillance gap" and go largely unnoticed, resulting in data marginalization).

7 *See* discussion *infra* Part III (describing the potential of surveillance techniques to create "algorithms," unique to the individual consumer, based on the systems' moni-

toring of consumer behavior).

8 The socialist calculation debate has been presented as a conflict between Hayek and von Mises, who "purported to show that rational economic calculation would not be possible within socialism[, and] hence, a socialist economy was not a real practical possibility," and Lange and Taylor, who formulated a socialist response to this position. John O'Neill, *Who Won the Socialist Calculation Debate?*, 17 Hist. Pol. Thought 431, 431 (1996). As early as the 1990s, when technology as we know it was in its infancy, scholars recognized that this debate "must be modified in the light of the subsequent development of the theory and technology of computation." Allin Cottrell & W. Paul Cockshott, *Calculation, Complexity and Planning: The Socialist Calculation Debate Once Again*, 5 Rev. Pol. Econ. 73, 73 (1993).

9 We explore the distinction between freedom and autonomy, and their relation to markets, in greater detail in Part I. Traditional defenses of the market focused on "negative" freedom—i.e., freedom as noninterference. However, as we explain, there is reason to believe that markets are also useful for enhancing autonomy—i.e., independent decision-making and self-determination. Since the latter will likely be more persuasive to those who are skeptical of markets, we focus in Part III on questions of autonomy in our canvassing of possible futures.

10 Zuboff, *supra* note 6.

11 Przemysław Pałka, *Algorithmic Central Planning: Between Efficiency and Freedom*, 83 L. & Contemp. Probs. 125, 126 (2020).

12 Evgeny Morozov, *Digital Socialism?*, 116–17 New Left Rev. 33 (2019).

13 *See* Leigh Phillips & Michal Rozworski, People's Republic of Walmart: How the World's Biggest Corporations Are Laying the Foundation for Socialism (2019); Daniel Saros, Information Technology and Socialist Construction (2014).

14 *See, e.g.*, Evgeny Morozov, *Critique of Techno-Feudal Reason*, 133-34 New Left Rev. 89 (2022).

15 *See generally* Lisa Herzog, *Markets*, *in* Stanford Encyclopedia of Philosophy 1 (2017); Marion Fourcade & Kieran Healy, *Moral Views of Market Society*, 33 Ann. Rev. Soc. 285 (2007); Amartya Sen, *The Moral Standing of the Market*, 2 Soc. Phil. & Pol'y 1 (1985).

16 *See, e.g.*, Robert Nozick, Anarchy, State, and Utopia (1974); *Robert Nozick's Political Philosophy*, *in* Stanford Encyclopedia of Philosophy (2018) (summarizing Nozick's view, namely, that an individuals' "state of nature rights . . . precede any social contract").

17 Fourcade & Healy, *supra* note 15.

18 John Stuart Mill, On Liberty (1859).

19 *See generally* F.A. Hayek, The Road to Serfdom: Text and Documents: The Definitive Edition (Bruce Caldwell ed., 2014); Friedman & Friedman, *supra* note 1; Milton Friedman & Rose Friedman, Free to Choose: A Personal Statement (1980).

20 Friedman & Friedman, *supra* note 1, at 9.

21 *Id.*

22 Isaiah Berlin, *Two Concepts of Liberty*, *in* Four Essays on Liberty 118 (1969). Although Berlin gave us the terminology of "negative" and "positive" liberty (or freedom), the distinction itself is much older, going at least as far back as Kant. *See* Ian Carter, *Positive and Negative Liberty*, *in* Stanford Encyclopedia of Philosophy (2016).

23 Friedman & Friedman, *supra* note 1, at 14.

24 On this point, Hayek wrote: "Our freedom of choice in a competitive society rests on the fact that, if one person refuses to satisfy our wishes we can turn to another." Hayek, *supra* note 19, at 127.

25 "Political freedom means the absence of coercion of a man by his fellow men. The fundamental threat to freedom is power to coerce, be it in the hands of a monarch, a dictator, an oligarchy, or a momentary majority." Friedman & Friedman, *supra* note 1, at 15; *see also* Berlin, *supra* note 22.

26 *See* Berlin, *supra* note 22; Friedman & Friedman, *supra* note 1, at 8–15.

27 Karl Polanyi, The Great Transformation: The Political and Economic Origins of Our Time (1944); Michael J. Sandel, What Money Can't Buy: The Moral Limits of Markets (2013).

28 "Critics of the view that markets are the best way to discover and satisfy the latent wants of individuals argue that wants are, in fact, endogenous to market processes." Fourcade & Healy, *supra* note 15, at 292.

29 *See* Lester M. Salamon & John J. Siegfried, *Economic Power and Political Influence: The Impact of Industry Structure on Public Policy*, 71 Am. Pol. Sci. Rev. 1026, 1042 (1977) (concluding that "the structure of the American corporate economy has important implications for the operations of the American political system at both state and federal

levels. Especially striking are the positive relationships discovered between firm size and industry success in avoiding both federal corporate income taxes and state excise taxes.").

30 For the classic critique on the neoclassical theory of consumption, see THORSTEIN VEBLEN, THEORY OF THE LEISURE CLASS (1899); *see also* PIERRE BOURDIEU, DISTINCTION: A SOCIAL CRITIQUE OF THE JUDGMENT OF TASTE (1984), which has been described as a "contemporary theor[y] of consumption proper" in Andrew B. Trigg, *Veblen, Bourdieu, and Conspicuous Consumption*, 35 J. ECON. ISSUES 99, 100 (2001).

31 For background on the concept of platform capitalism, see Julie E. Cohen, *Law for the Platform Economy*, 51 U.C. DAVIS L. REV. 133 (2017); Nick Srnicek, *The Challenges of Platform Capitalism*, 23 JUNCTURE 254 (2017); NICK SRNICEK, PLATFORM CAPITALISM (2017).

32 For the longer, more nuanced version of this story, see SRNICEK, PLATFORM CAPITALISM, *supra* note 31. Cohen distinguishes between a number of related, but subtly distinct, ways of conceptualizing these emerging political-economic transformations—e.g., platform capitalism, informational capitalism, surveillance capitalism, and so on. These distinctions are important. However, insofar as each designates (in part) the erosion of traditional market structures in favor of surveillance-driven digital intermediation, any of these labels suffices for the present discussion. *See* COHEN, *supra* note 5, at 5-7.

33 COHEN, *supra* note 5, at 40.

34 SRNICEK, PLATFORM CAPITALISM *supra* note 31, at 29.

35 COHEN, *supra* note 5, at 48.

36 SRNICEK, PLATFORM CAPITALISM *supra* note 31, at 30.

37 COHEN, *supra* note 5, at 41.

38 ZUBOFF, *supra* note 6. The term "surveillance capitalism," elaborated on and popularized by Zuboff, was first introduced by Vincent Mosco. *See* VINCENT MOSCO, TO THE CLOUD: BIG DATA IN A TURBULENT WORLD (2014).

39 ZUBOFF, *supra* note 6.

40 *Id.* at 376.

41 For careful discussions of the relationship between platform technologies and freedom in this sense, see, e.g., Tal Zarsky, *Privacy and Manipulation in the Digital Age*, 20 THEORETICAL INQUIRIES L. 157 (2019); Julie E. Cohen, *The Emergent Limbic Media System, in* LIFE AND THE LAW IN THE ERA OF DATA-DRIVEN AGENCY 60 (Mireille Hildebrandt & Kieron O'Hara eds., 2020); Daniel Susser et al., *Online Manipulation: Hidden Influences in a Digital World*, 4 GEO. L. TECH. REV. 1 (2019); Daniel Susser, *Invisible Influence: Artificial Intelligence and the Ethics of Adaptive Choice Architectures*, AIES '19: PROC. 2019 AAAI/ACM CONF. ON AI, ETHICS, & SOC'Y 403 (Jan. 2019); Daniel Susser & Vincent Grimaldi, *Measuring Automated Influence: Between Empirical Evidence and Ethical Values*, AIES '21: PROC. 2021 AAAI/ACM CONF. ON AI, ETHICS, & SOC'Y 242 (July 2021).

42 Mathias Döpfner, *A Harvard Business School Professor Says That It Might Be a Good Idea to Shut Down Facebook or Google for 'a Day or Week in Order to Show That It Is Democracy That Rules Here,'* BUS. INSIDER (Nov. 24, 2019, 1:19 PM), https://www.businessinsider.com/harvard-professor-shoshana-zuboff-on-big-tech-and-democracy-2019-11 [https://perma.cc/JKH8-8UNV].

43 F. A. HAYEK, INDIVIDUALISM AND ECONOMIC ORDER 86 (1948).

44 Ryan Calo, *Privacy and Markets: A Love Story*, 91 NOTRE DAME L. REV. 2, 651 (2015).

45 *See* LUDWIG VON MISES, ECONOMIC CALCULATION IN THE SOCIALIST COMMONWEALTH (S. Alder trans., 1990); *see also* HAYEK, supra note 2.

46 Hayek categorized the market as "a system of the utilization of knowledge, . . . which only through the market situation leads people to aim at the needs of people whom they do not know, make use of facilities for which they have no direct information, all this condensed in abstract signals, and that our whole modern wealth and production could arise only thanks to this mechanism . . . ." HAYEK: A COLLABORATIVE BIOGRAPHY, *supra* note 2, at 70.

47 For an especially lucid discussion of these issues, see PHILLIPS & ROZWORSKI, *supra* note 13, at 20-76.

48 This trend continues into the present. *See, e.g.*, Jesús Fernández-Villaverde, *Simple Rules for a Complex World with Artificial Intelligence* (U. Penn. Inst. for Econ. Rsch., Working Paper No. 20-010, 2020) (defending a self-consciously Hayekian view of markets).

49 FRIEDRICH A. HAYEK, LAW, LEGISLATION, AND LIBERTY 70, 78 (Vol. 3 1979).

50 *See* ERIC POSNER & GLEN WEYL, RADICAL MARKETS 277–93 (2018).

51 *Id.* at 283.

52 *Id.* at 285.

53 Something like Yelp is a good microcosm: When people post reviews, they reveal information to the market as a whole, which has lots of potential ripple effects (on the owners of the reviewed business, on other consumers, on competitors, etc.) that helps the relevant market "self-correct" over time. *See* Georgios Askalidis & Edward C. Malthouse, *The Value of Online Customer Reviews*, RecSys '16: Proc. 10th ACM Conf. Recommender Sys. 155, 155 (Sept. 2016) ("Electronic Word of Mouth" (namely, electronic reviews) is being "collected, aggregated and displayed to consumers . . . in all types of settings." These reviews are "aggregated and displayed to other users[,]" and consulted by online by shoppers. "A recent survey found that 30% of shoppers under the age of 45 consult reviews for every purchase they make, while 86% say that reviews are essential to making purchase decisions.").

54 For a particularly timely example of this practice, see Matthew Goldstein, *Investors See Opportunities in Companies Sent Reeling*, N.Y. Times, Apr. 3, 2020, at B4 (describing the new business opportunities created for hedge funds and private equity firms amid the coronavirus pandemic, namely, the ability of the "moneymakers" to lend funds to struggling firms and take over entities "showing signs of distress").

55 *See* Alyssa Bereznak, *Don't Know Which Toaster to Buy? There's a Website for That.*, The Ringer (June 13, 2019), https://www.theringer.com/tech/2019/6/13/18663462/wirecutter-strategist-recommendation-sites-amazon-reviews [https://perma.cc/CQA9-S9BR] ("Inspired by the rigorous testing of Consumer Reports and infused with the conversational tone of the internet, destinations like Wirecutter, The Strategist, and Reviewed have come to define a new era of editorial-minded shopping companions. When flustered customers come looking for the most durable umbrella or the least terrible router, recommendation sites are there to calm them, guide them, and link them to an answer.").

56 For the classic theoretical defense of this view, see George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q. J. Econ. 487 (1970). For applications of this concept to securities regulation and other compelled-warranty regimes, see, for example, Kevin S. Haeberle & M. Todd Henderson, *A New Market-Based Approach to Securities Law*, 85 U. Chi. L. Rev. 1313, 1327 (2018) (admitting that a mandatory disclosure regime "may be a logical enough way to address underproduction incentives for corporate information," but also pointing out the fundamental flaws with a government-run disclosure regime); Allen Ferrell, *The Case for Mandatory Disclosure in Securities Regulation Around the World*, 19–20 (Harv., John M. Olin Ctr. for Law, Econ., & Bus., Discussion Paper No. 492, 2004) (arguing, in part, that demanding a disclosure regime in securities regulation will reduce the cost of external finance by reducing the costs of adverse selection).

57 *See* Haeberle & Henderson, *supra* note 56, at 1320–21; *see also* Zohar Goshen & Gideon Parchomovsky, *The Essential Role of Securities Regulation*, 55 Duke L. J. 711, 713 (2006) ("Securities regulation is not a consumer protection law. Rather, scholarly analysis of securities regulation must proceed on the assumption that the ultimate goal of securities regulation is to attain efficient financial markets and thereby improve the allocation of resources in the economy."). Another source of noncompulsory information sharing—albeit sharing that many firms presumably would prefer to limit rather than encourage—is leaks from insiders. A firm's employees naturally possess a wealth of information that other actors in the system benefit from discovering. This includes everything from whistleblowing to pre-acquisition/takeover diligence to word-of-mouth systems (or their platform-based equivalent, like Glassdoor). *See* Lobel, *supra* note 1, at 40 ("Contrary to the assumptions of the Orthodox Model, a growing body of empirical evidence suggests that successful companies, particularly in high-tech industries, are more likely to increase their research and development efforts and expenditure when there are increased information spillovers within the industry.").

58 Oskar Lange, *The Computer and the Market*, *in* Socialism and the Market: The Socialist Calculation Debate Revisited 158–61 (Peter Boettke ed., 2000).

59 *Id.* at 158.

60 *See, e.g.*, Saros, *supra* note 13; W. Paul Cockshott & Allin Cottrell, Toward a New Socialism (1994). For overviews of this history, see Morozov, *supra* note 12.

61 *See* Morozov, *supra* note 12; Saros, *supra* note 13; Phillips & Rozworski, *supra* note 13. *See also* Andrew Odlyzko, The End of Privacy and the Seeds of Capitalism's Destruction (working paper) (on file with authors).

62 *Compare* Phillips & Rozworski, *supra* note 13, *with* Posner & Weyl, *supra* note 50.

63 *See* Morozov, *supra* note 12, at 36. In fact, even skeptics of the "digital socialism" vision seem to credit the reality that markets will not long be—and may already no longer be—superior to computers on the purely computational

dimension. *See, e.g.*, Fernández-Villaverde, *supra* note 48, at 4 (acknowledging that the "optimization problem" of allocating goods and services under conditions of perfect information is one "which AI or ML can do better in large dimensions than traditional . . . methods").

64 *See* Paul Michelman, *You Know What's Hard to Predict? Human Behavior*, Harv. Bus. Rev. (Nov. 5, 2008), https://hbr.org/2008/11/funny-thing-about-predictive-e.html [https://perma.cc/T52Y-ABGL] ("Funny thing about predictive financial models: they rely on human beings to prove true. Funny thing about human beings in all their emotional, irrational glory: they are hard to predict.").

65 Phillips & Rozworski, *supra* note 13, at 60 (emphasis added).

66 *Id.*

67 Fernández-Villaverde, *supra* note 48, at 12.

68 *Id.* at 4. For background on the Soviet approach to planning, see Francis Spufford, Red Plenty (2010).

69 *See* Morozov, *supra* note 12, at 65.

70 *Id.* at 36.

71 *See, e.g.*, Josh Fairfield, Can Law Keep Up? (forthcoming 2021) (manuscript on file with authors).

72 *See* Hayek, *supra* note 43.

73 See Encyclopedia of Knowledge Management 724 (Renee Davies et al. eds., 2006) (describing storytelling as a process in which the storyteller can share information and knowledge with listeners, and the listener can respond by interrupting, asking for clarification, and expressing emotions like approval or disbelief. And in light of such feedback, the storyteller might modify the story.). *See also* Alvin Roth, Who Gets What—And Why (2015) (exploring nonmarket mechanisms of feedback and allocation).

74 *See* Eric E. Johnson, *Intellectual Property and the Incentive Fallacy*, 39 Fla. St. U. L. Rev. 623, 624 (2012) (describing—and later questioning the validity of—the incentive theory of intellectual property, which reflects the idea that "people won't create or invent things without incentives. If people can just swoop in and make copies, the reasoning goes, these necessary incentives will be lacking.").

75 Morozov, *supra* note 12, at 64.

76 Aware of this problem, proponents of so-called "participatory economics" tout its ability—unlike central planning—to calibrate incentives. *See, e.g.*, Robin Hahnel, Economic Justice and Democracy: From Competition to Cooperation 221 (2005) ("[O]ne of the important ways in which [participatory economics] is different from central planning is that it is incentive compatible, that is, actors have an incentive to report truthfully rather than an incentive to misrepresent their capabilities or preferences.").

77 *See* Morozov, *supra* note 12, at 64 (explaining that Saros' vision also involves "ranking" producers according to consumer satisfaction, as well as a mechanism for adapting planned prices in response to supply-fluctuations—both of which may be wise, but both of which also replicate certain aspects of a market).

78 *See* Zuboff, *supra* note 6, at 8 (describing today's economic arrangement as one that "unilaterally claims human experience as free raw material for translation into behavioral data in which powerful companies . . . fabricat[able] into prediction products that anticipate what you will do"—and, we would add, what you will want—"now, soon, and later").

79 Of course, the ability to accomplish this in practice relies on legal and political institutions that are conducive to the enterprise. *See* Cohen, *supra* note 5; Kapczynski, supra note 6; Julie E. Cohen, *Surveillance Capitalism as Legal Entrepreneurship*, 17 Surveillance & Soc'y 240 (2019) (reviewing Zuboff, *supra* note 6); Marvin Landwehr et al., *The High Cost of Free Services: Problems with Surveillance Capitalism and Possible Alternatives for IT Structure*, LIMITS '19: Proc. Fifth Workshop on Computing Within Limits 1 (June 2019). *See also* BJ Ard, *The Not-So-Great Transformation*, 18 Int'l J. Con. L. 1013 (2020) (reviewing Cohen, *supra* note 5).

80 These concerns are reminiscent of Fourth Amendment "forfeited evidence" problems. In a New York Times op-ed, Elizabeth Joh describes a case where, directed by the police, a school janitor retrieved a 17-year-old student's milk carton from the garbage and turned it over to law enforcement for testing. Subsequently, the DNA from the disposed milk carton matched the DNA left at a crime scene. For more information on the case, see Elizabeth Joh, *Want to See My Genes? Get a Warrant*, N.Y. Times, June 13, 2019, at A27. The problems with this practice—formally known as "genetic genealogy"—parallel the issues raised by the privacy problems inherent in surveillance. In the case of DNA privacy, a world where police could simply capture all information being exuded from people's bodies means police would never need warrants. Similarly, if information about an individual's preference could be gleaned from their search history, without permission, there is simply

no incentive for consumers to self-report their preferences. For more on the forfeited evidence problem, see Elizabeth E. Joh, *DNA Theft: Recognizing the Crime of Nonconsensual Genetic Collection and Testing*, 91 B.U. L. Rev. 665 (2011).

81 Posner & Weyl, *supra* note 50, at 290–91.

82 *Id.* at 292–93.

83 *Id.* at 293.

84 *Id.*

85 Pałka, *supra* note 11, at 140-41.

86 *See, e.g.*, Sascha D. Meinrath et al., *Digital Feudalism: Enclosures and Erasures from Digital Rights Management to the Digital Divide*, 19 CommLaw Conspectus: J. Comm. L. & Tech. Pol'y 423 (2011); Max Read, *In 2029, the Internet Will Make Us Act Like Medieval Peasants*, N.Y. Mag. (Nov. 13, 2019), https://nymag.com/intelligencer/2019/11/in-2029-the-internet-will-make-us-act-like-peasants.html [https://perma.cc/L53X-L5SC]; Bernard Marr, *Are We Heading for Digital-Feudalism in Our Big Data World?*, Forbes (July 26, 2016, 3:11 AM), https://www.forbes.com/sites/bernardmarr/2016/07/26/is-this-the-scary-world-our-tech-revolution-will-create/?sh=6ed0ebda2b96 [https://perma.cc/3GK9-MBD8]; Bruce Schneier, *When It Comes to Security, We're Back to Feudalism*, Wired (Nov. 26, 2012, 6:30 AM), https://www.wired.com/2012/11/feudal-security/ [https://perma.cc/S2FJ-DGVJ]. *See also* Francesco Boldizzoni, Foretelling the End of Capitalism: Intellectual Misadventures Since Karl Marx (2020); McKenzie Wark, Capital is Dead: Is This Something Worse? (2019); Feng Xiang, Opinion, *AI Will Spell the End of Capitalism*, Wash. Post (May 3, 2018, 12:15 PM), https://www.washingtonpost.com/news/theworldpost/wp/2018/05/03/end-of-capitalism/ [https://perma.cc/C2S2-VXWF]; Annie Lowrey, *Why the Phrase 'Late Capitalism' is Suddenly Everywhere*, The Atlantic (May 1, 2017), https://www.theatlantic.com/business/archive/2017/05/late-capitalism/524943/ [https://perma.cc/Y7AK-SMHN].

87 *See, e.g.*, James Q. Whitman, *Of Corporatism, Fascism, and the First New Deal*, 39 Am. J. Comp. L. 747 (1991) (tracing some of this conceptual history).

88 *See, e.g.*, Lina Khan, *Amazon's Antitrust Paradox*, 126 Yale L. J. 710 (2017).

89 *See, e.g.*, Hiba Hafiz, *Structural Labor Rights*, 119 Mich. L. Rev. (forthcoming 2021).

90 *See* Jerry L. Mashaw & David L. Harfst, *Regulation and Legal Culture: The Case of Motor Vehicle Safety*, 4 Yale J. Reg. 257 (1987) (elaborating the specific governance modality of "regulation" through the lens of federal car safety regulation).

91 *See, e.g.*, Daniel Solove & Woodrow Hartzog, *The FTC and the New Common Law of Privacy*, 114 Colum. L. Rev. 583 (2014) (arguing that the FTC does—and should—play a revitalized regulatory role as more and more business models become informationally driven).

92 *See, e.g.*, Rory Van Loo, *Digital Market Perfection*, 117 Mich. L. Rev. 815 (2019) (suggesting that "digital assistants"—essentially, consumer-facing tools that help navigate the informational complexities of platform capitalism—could be used to counteract predatory business practices).

93 *See* Odlyzko, *supra* note 61.

94 *See* Saros, *supra* note 13.

95 For further background, see John Willoughby, *Book Review: Information Technology and Socialist Construction*, 50 J. Radical Econ. 427 (2017).

96 Morozov, *supra* note 12.

97 *See* Saros, *supra* note 13, at 147-69.

98 *See id.*

99 *See* Martin L. Weitzman, *Prices vs. Quantities*, 41 Rev. Econ. Stud. 477, 478 (1974); Ian Ayres & Gideon Parchomovsky, *Tradable Patent Rights*, 60 Stan. L. Rev. 863 (2007) (unpacking and modifying Weitzman's classic theory in the context of a planning system—patent issuance).

100 For an argument along these lines, see Edward Parson, Max—A Thought Experiment: Could AI Run the Economy Better than Markets? (unpublished manuscript) (on file with authors).

101 One route for future research would be exploring how the burgeoning literature on "privacy as trust" might inform the design of feedback infrastructure—since much of that literature is already focused on design questions, albeit at a more granular scale. For background on the "privacy as trust" way of thinking, see Ari Ezra Waldman, Privacy as Trust: Information Privacy for the Information Age (2018).

102 Jon Elster, Making Sense of Marx 205 (1985). "Marx never explicitly makes the contrast between positive and negative freedom. Both notions, however, can be found in his work. He refers to the latter as 'formal freedom', as when the worker is said to be formally free to leave his master. The latter he calls 'real freedom', which he also equates

with self-actualization. . . . This is a conception of freedom as autonomy, the positive ability to choose one's aims, rather than the negative freedom from interference in the attempt to realize whatever aims one happens to have."

103 Carol C. Gould, Rethinking Democracy 39-41 (1988).

104 Elster, *supra* note 102, at 208.

105 Gould, *supra* note 103, at 6.

106 Beate Rössler, The Value of Privacy 44 (2005): "[W]ithout the protection of privacy it is not possible to make sense of the idea of individual freedom and autonomy that is basic and central to liberal democracies." *See also* Julie E. Cohen, *Examined Lives: Information Privacy and the Subject as Object*, 52 Stan. L. Rev. 1373 (2000).

107 Rössler, *supra* note 106, at 73. Importantly, this analysis does not render privacy a purely individual interest, necessarily in tension with certain social goods. *See* Dorota Mokrosinska, *Privacy and Autonomy: On Some Misconceptions Concerning the Political Dimensions of Privacy,* 37 L. & Phil. 117, 137-38 (2018) (arguing that autonomy itself has a significant social and political dimension, and therefore privacy does too: "[A]utonomy does not involve a detachment from political life. To the contrary, autonomy means engagement in political life viz. the practice of public justification. This means that when we claim privacy by way of protecting our autonomy, we do not make a claim to withdraw from political life, but rather make a claim to protect certain forms of political engagement.").

108 *See, e.g.*, David Schweickart, *Market Socialism: A Defense*, *in* Market Socialism: The Debate Among Socialists 7 (Bertell Ollman ed., 1998).

109 Ellen Meiksins Wood, The Origin of Capitalism: A Longer View 7 (2002).

110 Mike Konczal, Freedom from the Market: America's Fight to Liberate Itself from the Grip of the Invisible Hand 3 (2021).

111 This is not to say, of course, that nonmarket approaches to allocation would preclude experimentation—just that, consistent with the general point about feedback infrastructure traced above, experimentation in a nonmarket setting would have to rely on an alternate mechanism of input from consumers.

About the Authors

Kiel Brennan-Marquez is a professor at the University of Connecticut School of Law, where he teaches courses in constitutional law, policing, evidence, and law and technology. Broadly speaking, his research explores the nature of human judgment, as we confront the possibility—in the legal system and elsewhere—of powerful machines capable of outperforming human experts. He lectures widely, to both academic and nonacademic audiences, and has published dozens of articles in law reviews and peer-reviewed journals. He received his J.D. from Yale and a B.A. in religious studies and philosophy from Pomona College.

Daniel Susser is an assistant professor of information sciences and technology and a research associate in the Rock Ethics Institute at Penn State University. A philosopher by training, he works at the intersection of technology, ethics, and policy. His research aims to highlight normative issues in the design, development, and use of digital technologies, and to clarify conceptual issues that stand in the way of addressing them through law and policy. Recently, he has focused especially on questions about privacy, online influence, and automated decision-making.

About the Knight First Amendment Institute

The Knight First Amendment Institute at Columbia University defends the freedoms of speech and the press in the digital age through strategic litigation, research, and public education. It promotes a system of free expression that is open and inclusive, that broadens and elevates public discourse, and that fosters creativity, accountability, and effective self-government.

knightcolumbia.org

Design: Point Five
Illustration: ©Erik Carter


KNIGHT
FIRST AMENDMENT
INSTITUTE at
COLUMBIA UNIVERSITY