# Taming Corporate Power in the 21st Century

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## Abstract:
There is broad consensus across the political spectrum in the US that monopolistic corporations – particularly Big Tech companies -- have grown too powerful, and that we need to revive antitrust to take on the “curse of bigness.” But both the diagnosis and the cure are rooted in an outdated understanding of how the American economy is organized. Information and communication technologies have fundamentally altered the markets for capital, labor, supplies, and distribution in ways that undermine the basic categories we use to understand the economy. Nationality, industry, firm, size, employee, and other fundamental terms are increasingly detached from the operations of the economy. If we want to understand and tame the new sources of economic power, we need a new diagnosis and a new set of tools. This Element provides the initial components.
Abstract: There is broad consensus across the political spectrum in the US that monopolistic corporations – particularly Big Tech companies -- have grown too powerful, and that we need to revive antitrust to take on the “curse of bigness.” But both the diagnosis and the cure are rooted in an outdated understanding of how the American economy is organized. Information and communication technologies have fundamentally altered the markets for capital, labor, supplies, and distribution in ways that undermine the basic categories we use to understand the economy. Nationality, industry, firm, size, employee, and other fundamental terms are increasingly detached from the operations of the economy. If we want to understand and tame the new sources of economic power, we need a new diagnosis and a new set of tools. This Element provides the initial components.

Introduction

“I’m using Robinhood on my Android to trade Dogecoin, which is a meme-based sarcastic cryptocurrency.”

Imagine explaining this sentence to someone in 1990, before the Web, memes, smartphones, apps, and cryptocurrency. Now imagine explaining it to the 1890 US Congress that passed the Sherman Act.

Corporate power is out of control. Despite widespread political polarization in the US, there is surprisingly broad consensus on this one thing. Senators Josh Hawley and Amy Klobuchar agree with populists on the left and the right: Big Business has grown too big and needs to be brought to heel.

The Biden Administration made taming the undue power of giant corporations a central theme of its first year. In his sweeping executive order to rein in big business in July 2021, President Biden said, “A fair, open, and competitive marketplace has long been a cornerstone of the American economy, while excessive market concentration threatens basic economic liberties, democratic accountability, and the welfare of workers, farmers, small businesses, startups, and consumers.”

Big Tech is especially fearsome. Information technology has seeped into every moment of our existence, from the cameras that scan our faces as we walk down the street and the online services that deliver our groceries to the smartphones resting a few inches away as we sleep. How we work, how we play, how we connect, and how we know increasingly take place through tools created and controlled by a small set of unaccountable corporations in Silicon Valley and Seattle. The pandemic exacerbated our vital dependence on online technologies for basic daily activities -- school, work, shopping, dining, visiting with friends and family -- leaving us at the mercy of a handful of peculiar tax-dodging billionaires.

There is also broad consensus on the cause of our ills: monopoly power. Industry after industry is dominated by a small number of giant corporations with little or no competition. Monopolists -- companies with too big a share of their market -- have a habit of underpaying their suppliers and workers, overcharging their customers, strangling current or future competitors, and using their unjust profits to buy off politicians and regulators. The proceeds of their monopolistic activities enrich the aristocrats who own giant corporations, handing political power to unaccountable elites who play by their own rules.

How did we get here? According to the standard narrative, America’s economic vibrancy in the 20th century was protected by antitrust laws that promoted competition, limiting mergers among rivals and the sleazy tactics that allow big companies to dominate their industry. The cure for the “curse of bigness” was mercifully straightforward: cut giant corporations down to size using the tools of antitrust, limit growth through mergers, and encourage more markets and more competition. Unfortunately -- according to the narrative -- smooth-talking economists from Chicago managed to hijack the noble mission of antitrust around 1980 and sent us down the path of monopoly. As President Biden put it, “over the last several decades, as industries have consolidated, competition has weakened in too many markets, denying Americans the benefits of an open economy and widening racial, income, and wealth inequality. Federal Government inaction has contributed to these problems, with workers, farmers, small businesses, and consumers paying the price.”

The rare consensus about the dangers of monopoly relies on a set of stylized facts about how the economy works. But the stylized facts are wrong. They come from a 20th century understanding of the economy that no longer fits the situation we are in now. Information and communication technologies have undermined the basic categories we use to describe the economy: firm, industry, employee, income, nationality, monopoly, even size are all contentious. To say that one or two giant corporations unfairly dominate an American industry due to their outsized market share (a standard notion of monopoly) is to misunderstand how power works in the new economy. And if we get the diagnosis wrong, we will not get the cure right -- it will be like trying to fix the carburetor on a Tesla.

Take Zoom, the videoconferencing platform that became pervasive overnight during the pandemic. The Zoom app was downloaded a half-billion times in 2020 and has 300 million daily users. Zoom single-handedly enabled the work-from-home economy, and many of us do not pass a single day without a Zoom call. It introduced major product improvements throughout the pandemic: the Zoom of February 2022 works very differently from the Zoom of February 2020. Is Zoom a giant corporation? As of July 2021 it had a stock market value of over $110 billion (comparable to Goldman Sachs and IBM), yet it only has 4422 employees around the world and rents server space from Amazon and Oracle. What industry is it in, and whom does it compete with -- video conferencing (so Google, Apple, Facebook, Microsoft, Cisco), telecommunications (add in AT&T and Verizon), or something broader? Would we be better off if Zoom had more mutually-incompatible competitors with slightly different versions of its features? (Those who find themselves invited to meetings on Teams or Webex or Meet/Hangout/whatever know the answer.) How did a tiny company with few employees and rented assets beat the most unscrupulous monopolists of our time? And would it make any difference if Zoom

were incorporated in Ireland (like Accenture and Medtronic), or were owned by a Chinese parent (like TikTok and Grindr)?

Over the past 40 years, information and communication technologies have enabled more robust markets in successive domains, first for capital (financialization), then for supply (Nikefication), then distribution (Amazon), then labor (Uberization). Along the way, the purpose of the corporation was narrowed to one: creating shareholder value. A matrix of institutions grew up to enforce this purpose and to punish those who deviated. Far more than monopoly, this is the source of our societal ills: the rules of the game under shareholder capitalism favor profit, whatever its source and whatever its consequence for society. Sometimes monopoly helps corporations create shareholder value, but it is only one tool among many. And as long as the business sector is dominated by the idea that corporations exist to create shareholder value, altering the rules of competition will not make the economy more humane, democratic, or sustainable.

The digital transformation of business is changing the shape of the American economy in unpredictable ways. How companies recruit labor, capital, and supplies, how they distribute their products, and how they manage their people and operations are all metamorphosing, creating new opportunities and new hazards. The basic architecture of enterprise today looks radically different from a generation ago, and even different from the start of 2020, when the Covid pandemic began. Work-from-home will inevitably lead to a greater use of global contractors rather than local employees, and we are increasingly seeing “placeless” businesses that assemble and manage their components entirely online. When Coinbase went public in April 2021, its prospectus listed no physical headquarters address and noted that it was a “remote-first” enterprise.3 And after Proposition 22 in California, we are likely to see even more frontline work done by app-based gig workers (delivery drivers, warehouse laborers, kitchen staff) recruited by the task or by the shift, their daily wages subject to the whim of the market.

More markets and more competition are not the solution to every problem, and sometimes giant scale has its advantages. Walmart, the scourge of the anti-monopolists, has the monopsony power to force its biggest suppliers to reduce their carbon emissions, to stock energy-efficient lightbulbs on a sufficiently massive scale to make them cost effective for its customers, to get affordable organic groceries into thousands of stores, and to put solar panels on roofs across America.4 No coalition of Main Street retailers could accomplish this so rapidly. (Walmart also had the power to force suppliers to meet its “China price,” driving down the wages of workers at its biggest providers.5) Or consider health care affordability. The governmental equivalent of Walmart (say, Medicare For All) could quickly drive down the price of medicines by surpassing the bargaining power of pharmaceutical companies, streamlining unnecessary paperwork, and coordinating care across geographies. Big companies and big government can be bullies, but sometimes it is useful to have bullies on your side. And more competition is not always the right answer. The opioid crisis will not be solved with more competitors for Purdue and Insys. The obesity epidemic will not be fixed with even more producers of hyperprocessed food. And in a world hurtling toward climate collapse, we don’t need more petroleum companies, airlines, or meatpackers spewing more carbon dioxide into the atmosphere.

3 https://www.sec.gov/Archives/edgar/data/1679788/000162828021003168/coinbaseglobalincs-1.htm
5 See Wilmers (2018) on the supplier wage effects of Walmart’s monopsony power.
The challenges we face are on the same scale as the shift from agriculture to manufacturing around the turn of the 20th century when the modern corporation took over the economy. But we can’t simply rely on the same tools we did then. In an age when all our human transactions and relationships are intermediated online, reviving 20th century antitrust is not sufficient. We need a new understanding of the place of business and government in organizing the economy to be democratically accountable and to serve human needs. My aim here is to provide a starting point.

This book is a short take on a big topic. I first describe the digital transformation of business and how information and communication technologies (ICTs) have transformed how companies access the raw ingredients for business -- capital, labor, supplies, and distribution -- in ways that favor the use of markets. Increasingly the parts for creating a business are available online, ready to snap together like a set of Legos, which helps explain the long-term decline in the number of public corporations in the US.\(^6\) Next comes a discussion of the new anti-monopoly movement and its diagnosis of our current era. From the Sherman Act of 1890 until the 1950s, Congress guided corporations to behave themselves by regulating how they compete with each other and engage with their suppliers, primarily during the Progressive Era, and by regulating the capital and labor markets during the New Deal era. This limited the “curse of bigness” and aligned what’s good for business with what’s good for society. But according to the anti-monopolists, the curse that plagued the American economy at the turn of the 20th century is back, brought about by a wrong turn in antitrust four decades ago. They propose a revival of trustbusting in response. I break down how this diagnosis gets it wrong, suggesting that it is not creeping monopoly but shareholder capitalism that got us into our current mess. Contrary to the monopoly narrative, there is little evidence that industry has become massively more concentrated since Reagan took office -- but there is compelling proof for the hegemony of shareholder value as the North Star for corporate activities.

Technology has undermined some of the basic categories we use to understand the economy. The next three sections describe fundamental changes in three basic terms. **Nationality** seems fairly basic, but scores of US-based firms such as Apple, Google, and Netflix make most of their revenues overseas, many are incorporated outside the US, and new virtual businesses undermine the very idea of “place.” **Industry** was straightforward when the biggest businesses made steel or cars or refined oil or operated railroads. Today, however, there is often a disjuncture between what companies do, what markets they operate in, and where their revenues come from. The “technology” industry ends up encompassing businesses that operate in nearly every market, from hotels and restaurants to transportation and construction to national security, which makes it tough to define terms like market share. Last, **size** is an increasingly unhelpful metaphor to describe corporations, as revenues, employment, assets, and market capitalization are increasingly uncorrelated. Corporations with minimal assets and employees can have vast market caps (e.g., Netflix, Zoom); enormous employers can have petite valuations (e.g., retailers Kroger, Walgreens, Albertsons), as can those with world-beating revenues (drug middlemen McKesson and AmerisourceBergen). The “curse of bigness” is too blunt a term to be useful today because we no longer agree on what **bigness** is. If nationality, industry, and size elude easy definition, then identifying monopoly power in a rigorous way will be even more troubled, no matter what the public consensus

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\(^6\) “Public corporations” are companies listed on a stock market like the New York Stock Exchange. See Davis (2016a, 2016b) on the decline of the public corporation and the rise of alternatives.
may be. As the judge who threw out the FTC’s initial filing of an antitrust case against Facebook put it, “It is almost as if the agency expects the court to simply nod to the conventional wisdom that Facebook is a monopolist... Yet, whatever it may mean to the public, ‘monopoly power’ is a term of art under federal law with a precise economic meaning: the power to profitably raise prices or exclude competition in a properly defined market.”

The American dream of starting a business and being your own boss is still alive, and all the parts for a business are available online -- yet paradoxically, by some measures business startup rates have been in a long-run downward spiral, albeit with a surprising upward blip during the pandemic. I next unpack the myth of entrepreneurship and highlight the dangers of using the rhetoric of self-employment to cloak an increasingly precarious employment relation. Last, we dive into what comes next. A buffet of policy options has been proposed to take on the new monopolies, from more vigorous antitrust enforcement to a new regulatory agency for digital platforms. I end by considering the bigger stakes we need to consider when we rein in the new economy, and why we need to put democracy first.

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The digital transformation of business

Suppose you came up with a brilliant invention that would make life easier for busy people -- say, a computerized pressure cooker that allowed home chefs to throw raw ingredients into a pot, push some buttons, and come back an hour later to a healthy dinner. How would you turn that into a business?

To create a working prototype, you might have to buy some capital equipment. Perhaps you have rich friends or family who could lend you some money. If the product you develop is viable and your market research is solid, you might ask a bank for a loan to build a factory and hire skilled workers. You’d need to retain a sales force to get stores like Sears and JC Penney to stock your product, and a shipping company to distribute it. As sales grew, you might hire more workers and expand your factory. If you got big enough, you might even list shares on a stock market to fund your expansion. Within a few years, or decades, you might grow the business into a lasting legacy, a pillar of your local community.

At least, that’s what you would have done 40 years ago. Today, after you created your initial design sketch, you might recruit some freelance designers on Upwork to perfect your idea. You could raise funding for your venture on Indiegogo -- but you may not need that much. Alibaba lists scores of factories waiting to manufacture your product once you have design specifications that you can send over the web. And Amazon is happy to advertise and distribute your product to customers and collect their payment. (If your product is really popular, they might even compliment your business by creating an Amazon-branded knockoff, produced by the same manufacturer, that undercuts your price.)

This is, more or less, the story of the Instant Pot. Robert Wang, an Ontario computer science PhD out of work after the 2008 financial crisis, spent 18 months perfecting a design for a versatile, low-cost, computerized pressure cooker along with two other engineers, funded by $350,000 of his own savings. After its debut on Amazon in 2010, Wang sent 200 Instant Pots to influential food bloggers and chefs, who shared positive evaluations (and, crucially, Instant Pot-specific recipes) online. Thanks to a cascade of rapturous reviews on Amazon, the product went viral and grew a large cult following. Hundreds of Instant Pot cookbooks have been published for every kind of cuisine, and thousands of recipes are posted online. Distribution was handed over to Fulfillment by Amazon, which received the products directly from the factory in China, packed them, and shipped them to customers. Product research consisted of reading the many thousands of reviews on Amazon and updating the appliance based on user experiences. By 2018, the Instant Pot was selling 300,000 units on Amazon’s Prime Day alone - all from a company with just 50 employees in Ottawa. No advertising, no factories, few employees, and almost no assets...yet the Instant Pot had become a global phenomenon.

The Instant Pot story demonstrates that the American dream is still alive and well -- in Ontario. The bigger lesson of the Instant Pot is about the digital transformation of business. Information and communication technologies (ICTs) have transformed every aspect of how business gets done over the past generation. In the words of Marc Andreessen, “Software is eating the world,” and that applies to all the core components for creating an enterprise. It has reshaped the basic raw materials for building a

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8 You can find dozens of low-cost Instant Pot knockoffs here: https://www.alibaba.com/showroom/electric-pressure-cooker.html
10 https://www.wsj.com/articles/SB1000142405311903480904576512250915629460
company -- just as structural steel, reinforced concrete, and plate glass changed the buildings in cities around the world over a century ago.

Because software is eating the world, markets are eating the world. ICTs have changed how companies raise capital (hello Indiegogo, Robinhood, and Coinbase), find suppliers (Alibaba), recruit labor (Uber, DoorDash, Mturk, Upwork), and distribute their products and services (Amazon, Shopify). They have also changed how firms operate internally, as employees (or contractors) are increasingly supervised by algorithms, not human managers. In a world where any kid in a dorm room can assemble a business from online parts, the corporation itself is an increasingly obsolete way to organize economic activity. This helps explain why there are half as many corporations listed on the stock market as there were 25 years ago. It’s as if the NBA were replaced by impromptu pickup games, all over the economy.

The core factor markets that make up a corporation have changed in parallel ways over recent years due to ICTs. In the US, the recurring theme across all these markets is the same: ICTs enable markets for things that were too complicated or too costly to trade on markets before, leading companies to outsource rather than doing things internally. As Nobel economist Ronald Coase would put it, ICTs are driving down the transaction costs of using online markets for inputs. More and more, it’s cheaper to buy (or perhaps more aptly, to rent) than to make. This transformation has happened successively across markets for capital (financialization), supplies (Nikefication), distribution (Amazon), and labor (Uberization), and is changing practices inside the business as well.

**Financialization: how capital markets spread from Wall Street to the parking meters on your street**

Over the past 40 years, financing for business has increasingly taken place through markets rather than institutions like banks. And even if you pass through a marble bank lobby to take out a mortgage or a business loan, odds are good that the loan will be re-sold, bundled, and sliced into bonds before you make it out the door (a process known as “securitization”). Financialization is what happens when financial markets become central to the operations of the economy. Thanks to ICTs, financial markets have spread broadly around the world and deeply into the economy. Dozens of countries opened stock exchanges over the past four decades, enabling global investors to invest in distant markets and to fund ventures that might have been beyond the reach of domestic savers. Kids waiting for the school bus with their smartphones out may be trading emerging market ETFs or GameStop options on Robinhood. And almost anything with a reliable cash flow has been securitized, from college loans and sitcom royalties to the life insurance payoffs of the elderly to future collections from parking meters.

The most familiar form of securitization is in the home mortgage market. For generations, people seeking to buy a house might take out a 30-year mortgage from a local bank, which funded the mortgage through the deposit accounts of local savers. In the early 1970s, government-sponsored organizations in the US pioneered the practice of buying mortgages from banks, thus freeing up the

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11 See Davis (2016b) on the vanishing American public corporation.
banks’ capital to make more loans. Hundreds of mortgages were pooled and re-sold as bonds, to be paid with the proceeds from the loans. Any single loan might be more or less risky, but a pool of them becomes predictable (at least, before 2007). Over a two-decade period the mortgage value chain fragmented from a single bank into a sequence of specialists -- brokers who worked directly with customers, mortgage banks who originated the loans, securitizers who bundled them into bonds, and servicers who subsequently managed the loans. This was largely enabled by ICTs such as the fax machine, the spreadsheet, electronic credit ratings, and scoring algorithms that encouraged standardization.

If you have seen the movie *The Big Short*, you saw finance nerds looking over spreadsheets in which each row was a home mortgage and each column was a piece of information (the homeowner’s credit score and payment history, the house’s selling price, the interest rate being charged, and so on). A simple but indispensable technology that everyone has access to today -- the spreadsheet -- allowed securitizers, rating agencies, and buyers to estimate how much income is likely to flow into that pool. Now take that same idea and apply it to credit card receivables, student loans, business loans, tobacco lawsuit settlements, future collections on toll roads...if there is an income stream (which is an “asset”), someone on Wall Street has turned it into an asset-backed security. And if you can easily share the information on that spreadsheet (say, as an email attachment), there might be a market for it. You might even find kids on Robinhood to buy your viatical bonds (backed by the life insurance payoffs of the elderly).

For business, this means that there are many more ways to access finance than bank loans, and even bank loans are likely to be re-sold and diced up into bonds. Any separation between commercial banking (making loans) and investment banking (underwriting and trading securities) has effectively evaporated: it’s all markets now.

**Nikefication: why nothing you buy is made by the company on the label any more**

The sneaker company Nike pioneered an ingenious business model in which the company designed and marketed its shoes but left it to East Asian contractors to do the actual manufacturing. Nike was in the branding business, not the production business. This asset-lite model, common in the garment industry, began to spread in the 1990s to almost every manufacturing industry you can name, from simple goods like sneakers and t-shirts to highly complex products like laptop computers. Apple once prided itself on its world-class production facilities in Silicon Valley; now its goods are made by Foxconn and other remote vendors. Nikefication is not just for manufacturing, as American corporations entrust their payroll to ADP, their IT to Infosys, their pension plan to Fidelity, their job design to Accenture, their server space to Amazon Web Services, and more.

The creation of the World Wide Web in the 1990s greatly accelerated this process by making it possible for companies to comparison shop for suppliers, even in geographies and time zones far from home. Ronald Coase claimed in 1937 that “the main reason why it is profitable to establish a firm would seem

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15 Davis (2010) provides detail on the rise of securitization.
to be that there is a cost of using the price mechanism. The most obvious cost of ‘organising’ production through the price mechanism is that of discovering what the relevant prices are.”16 The Web greatly drove down the transaction costs of organizing production through the price mechanism, rendering it cheaper to buy inputs rather than make them internally.

Today it is possible to rent entire supply chains. If you have a recipe for tomato sauce or beer or pet food; if you have a design for a sneaker or an evening gown; if you have a concept for a flat-screen television or mobile phone handset -- you can hire a vendor to make it for you, including managing their own supply chain. And while the 1990s was seen as the decade of outsourcing, the years after China joined the WTO in 2001 accelerated this trend. In January 2001, the “Computer and Electronic Products” industry in the US employed 1.9 million people. Three years later, it was just 1.3 million. In a brief period, the industry had shrunk by nearly one-third. Meanwhile, anyone with a Web connection can set electronics factories in motion in Shenzhen via Alibaba.

While this is easiest to visualize for clothing or food or consumer electronics, the basic Nike recipe -- design internally, produce externally -- is spreading even to the most traditional manufacturing industries, enabling surprising new entrants. The CEO of electric vehicle (EV) company Fisker, which went public in the fall of 2020, stated “We’re not going to do our own manufacturing. It would be stupid for any EV startup to make a brand-new factory.” Instead, it will rely on contract manufacturer Magna and, of course, Foxconn, to produce its vehicles.17

Fullfilled by Amazon...very fulfilled

Since its launch in 1994, Amazon has grown to be a universal distribution channel. As we saw for Instant Pot, Amazon can take customer orders, receive inventory directly from the factory, pack it up, and deliver it to the customer’s front door. The complete service is called “Fulfillment by Amazon.” Of course, Amazon is not the only vendor who offers this service, but it is the most comprehensive.

Because of its “universal distribution” approach, Amazon has completed the circuit of the virtual business model, allowing online merchants to sell products that they never touch. This has created a kaleidoscopic shopping experience, as consumers are presented with highly-rated brands with bizarre names like Nertpow, SHSTFD, MAJCF...seemingly christened by a cat walking across a keyboard.18

Moreover, the Amazon platform enables a business model in which an entrepreneur can scan the market for products with a high markup, create a lower-priced knockoff design, find a vendor on Alibaba to produce it, and claim their perch on Amazon. As New York Times writer Farhad Manjoo put it, “We’re going to get better products for ludicrously low prices, and big brands across a range of categories — the Nests and Netgears of the world — are going to find it harder than ever to get us to shell out big money for their wares.”19 For the single most central device someone owns – their smartphone – consumers may be willing to shell out a premium price for an Apple product. But for the dozens of other product categories they buy each year, they may not have to.

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16 See Coase (1937) for the initial statement on transaction costs as the rationale for firms.
Uberization: why you can now get a taxi, a massage, or a doctor’s house call on your phone

The last market to succumb to ICTs is the labor market. There is something special about labor that makes it unlike capital, supplies, and distribution, a fact that is recognized in American employment law. But ICT-driven changes in the labor market are drastically changing the nature of employment.

If you haven’t looked for a job lately, you may be surprised by how it’s done these days. Many hiring companies rely on outside services like Indeed.com to deliver them a passel of potential recruits. Prospective employees upload their resume, flag the kinds of jobs they are interested in, and await alerts for openings. An employer might ask them to record their answers to a few interview questions via their phone’s video, allowing hiring managers to preview potential workers and, if they choose, to proffer employment along with details of the job. At the fancier end of the spectrum, employers might use Hirevue, “Your end-to-end Hiring Experience Platform with video interview software, conversational AI, and assessments.” Some services helpfully incorporate algorithms purported to read emotions and personality traits from video interviews to screen out those who are too anxious, or too relaxed, or too different from the preferred demographic.

Once employed, workers can be scheduled, managed, evaluated, and fired using Workforce Management Systems software. Those working from home may find that their employer requires them to leave their camera on at all times, and to endure keystroke tracking and frequent screen captures throughout the workday. Over the course of the pandemic, the degree and forms of intrusive monitoring by employers have reached truly Kafkaesque levels of invasiveness – something unlikely to recede even as people return to in-person work.\(^2\) Amazon, always in the vanguard, has upped the ante with onboard AI-powered cameras that monitor and score their delivery drivers continuously and chide them in real time for perceived missteps (e.g., not maintaining a safe distance).\(^2\)

Across a broad range of industries, employees are being replaced by contractors. Uberization is “the creation of spot labor markets enabled by smartphones in which buyers and sellers can connect for the performance of specific tasks. The most visible version of Uberization is the ridehailing industry, where riders and drivers are connected via a smartphone app. But the idea is more generic: as the cliche goes, there is an Uber for everything now, from food delivery and Ikea furniture assembly to virtual physician house calls” (Davis and Sinha, 2021).

Uberization marks the transition from an employment relation -- a protected tie between workers and companies -- to a contractor relation. It is a shift from jobs to tasks, and it is increasingly pervasive across all levels of skill, from dog walking to diagnosing X-rays. In 2019 Google had 102,000 employees but 121,000 temps, vendors, and contractors (TVCs) -- in other words, most of the workforce was made up of disposable TVCs, not employees.\(^2\)

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\(^2\) [https://www.nytimes.com/2019/05/28/technology/google-temp-workers.html](https://www.nytimes.com/2019/05/28/technology/google-temp-workers.html)
While contract work and spot labor markets have existed forever, GPS-enabled smartphones greatly reduce the transaction costs of hiring work by the task. It is easy to imagine a scenario in which qualified workers bid for tasks or shifts, with low bidders setting the wage rate for the day. Freed from archaic concepts like the “job” and the “minimum wage,” wages would rise and fall day to day, and even hour to hour, according to market conditions – perhaps with a quality adjustment for those who have not angered their AI overseer.

While this sounds fanciful and vaguely dystopian, it is already underway. After California voters approved Proposition 22 in November 2020, which allowed Uber, Lyft, DoorDash, and similar firms to classify their laborers as contractors and not employees, several California groceries fired their delivery drivers and switched to app-based services.23 Restaurants are already hiring kitchen staff by the shift using apps such as Pared, and UberWorks launched in 2019 to create a platform for companies to hire labor of all types by the shift.24

One of the implications of this new system, in which labor is evaluated and hired (or not) by the shift, is that workers bear the transaction costs that employers have sloughed off, spending hours in the evening and weekend polishing up their LinkedIn profile and scrapping for gigs. The famous motto of Uber founder Travis Kalanick -- “Always be hustling” -- is an apt description of a way of life in which leisure hours are spent taking online courses, networking, and smiling for the AI bot that will evaluate your job application.25

These trends were well underway when Covid hit and accelerated them all. 2020 will be marked by historians as the moment when the digitalization of the economy made a decade’s progress in a single year. As a result, we are likely to see a lot more businesses that look like Instant Pot, and a lot fewer that look like General Motors, in the years to come. We have shifted from the world of professional hockey, with specialized equipment and arenas, stable teams and schedules, and reliable records of how the competition went, to the world of pickup basketball.

Of course, not all industries will end up with large corporations replaced by pop-up networks that look like the “maker” of the Instant Pot. Apple, Amazon, and Alphabet have many years left in them, and someone needs to operate those massive server farms (although their hands-on employment is quite minimal). Generic factories manufacturing mobile phones, electric cars, and tomato sauce are also operated by ongoing corporations – although again, these are likely to be highly automated, employee-lite enterprises. More to the point, the technological changes enabling markets are embraced far more fervently in the US than anywhere else. While in the US there is an Uber for everything, in many countries Uber’s business model simply won’t work because of local laws and customs. The smartphone-enabled ridehailing industry looks vastly different in Germany and Sweden than in the US, and even

25 For a detailed and disturbing ethnography of how the new labor market is playing out in California, see the Institute for the Future’s report “California worker voices: Anticipating the future from the frontlines” at https://www.iftf.org/caworkervoices
more distinct in Nigeria, Indonesia, India, and China.26 America’s business climate is unique, and the institutional climate change wrought by ICTs will look different according to local conditions. Just because a technology creates the possibility for a new kind of market does not mean that the market will emerge – at least outside the US.

26 See Thelen (2018) on Germany, Sweden, and the US, and Davis and Sinha (2021) for Nigeria, Indonesia, China, and India.
Rising monopoly power and a new Gilded Age?

Antitrust is back in fashion. Across the political spectrum in the United States, there is rising concern that corporate power has become too concentrated, threatening the fairness of our economy and perhaps even democracy itself. You know something is up when Josh Hawley, right-wing Republican senator from Missouri, and Amy Klobuchar, liberal Democratic senator from Minnesota, both publish books about smashing monopolies at the same time. Big Tech firms such as Facebook, Google, and Amazon are the subjects of antitrust lawsuits at the state and federal level, and the Biden Administration has stocked up on activist antitrust scholars and launched a broad campaign against corporate monopoly power. It has been over a century since America has seen this kind of consensus about the dangers of corporate concentration.

Dozens of recent books and articles argue that we are living through a new Gilded Age, just as we did at the turn of the 20th century. Their diagnosis echoes that of Teddy Roosevelt, the original trustbuster, over a century ago: corporations have grown too big and have used their wealth and power to corrupt politics and unjustly enrich an elite class of robber barons and Wall Street bankers at the expense of the common person.  

Underlying all this concern is monopoly power. According to the critics, monopolies are responsible for nearly all our ills as a society: low pay and economic inequality, bad health care and overpriced medicines, terrible service from cable companies and airlines, the collapse of journalism, the blandness of every downtown stocked with the same chain stores and restaurants, and the fact that kids spend all day staring at their phones getting anxious and depressed. As Barry Lynn put it, “Whatever you are angry about, somewhere in the chain of blame you will almost always find a monopolist.”

These concerns reached their most powerful expression in an October 2020 Congressional subcommittee report that detailed the abuses dealt out by four tech giants: Google, Facebook, Amazon, and Apple. And they are setting the agenda for a renaissance in the regulation of business.

The corporatization of the American economy and the Progressive response

Around the turn of the 20th century, the American economy was transformed from regional to national through a vast merger wave engineered by Wall Street. The essential vehicle for this transformation was the corporation. In 1890 there were fewer than a dozen manufacturers listed on American stock markets, and the largest manufacturer -- Carnegie Steel -- was a limited partnership overseen by one man. By 1910 exchange-listed corporations increasingly dominated major industries, and Carnegie Steel had morphed into US Steel, the world’s first billion-dollar corporation.

27 The text of Roosevelt’s “New Nationalism” speech of 1910, laying out his case against corporate power, is available at https://obamawhitehouse.archives.gov/blog/2011/12/06/archives-president-teddy-roosevelts-new-nationalism-speech
29 See Chandler (1977) for the standard account of this movement and Lamoreaux (1985) and Roy (1997) for more critical accounts.
A combination of economies of scale that reduced per-unit costs and ruthless competitive tactics meant that many industries were dominated by giant monopolies (e.g., Standard Oil, US Steel, American Tobacco) or oligopolies (General Electric and Westinghouse). The irony was that all this combination happened after the passage of the Sherman Act of 1890, which was aimed at reining in the power of monopolies. The Sherman Act forbids companies from fixing prices, as the trusts had done. It further makes it illegal to acquire or maintain monopoly power through exclusionary conduct. Notably, being a monopoly (say, by having a 90% market share) is not itself illegal -- it is anticompetitive behavior that counts. The text of the act is short and under-specified-- the crucial part of Section II states: “Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony...” And it turns out there are many ways to “attempt to monopolize.”

The new giant corporations that followed the Sherman Act created problems for a democratic society. Monopolies could overcharge their customers, underpay their suppliers and employees, crush their competitors, and use their ill-gotten profits to buy political influence. A corporation that gained a stranglehold on a crucial transportation route, or fuel, or essential raw material, or means of communication, could use its leverage to mint dynastic fortunes, creating an aristocracy made up of robber barons. The Progressive movement arose in large part to respond to this threat.

Who were these new giants? The Dow Jones index in 1912 included ten corporations that produced copper, lead, steel, rubber, leather, and sugar; a train car manufacturer; and General Electric. Note that these were not the familiar pillars of the industrial economy just yet: Ford did not introduce the moving assembly line until 1913, and giant mass-production factories had not conquered industry.

**Table 1: The Dow Jones index, 1912**

<table>
<thead>
<tr>
<th>Amalgamated Copper</th>
<th>Central Leather</th>
<th>US Rubber</th>
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<tr>
<td>American Car &amp; Foundry</td>
<td>General Electric</td>
<td>US Rubber pfd.</td>
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<tr>
<td>American Smelting &amp; Refining</td>
<td>National Lead</td>
<td>US Steel</td>
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<td>American Sugar</td>
<td>Peoples Gas Light and Coke</td>
<td>US Steel pfd</td>
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To put the threat of monopoly in context: in 1912 the US had no income tax, no estate tax, no Department of Labor, no Federal Reserve, no Federal Trade Commission. US Steel’s assets were larger than the annual budget of the US federal government. America had a regulatory system fit for a regional agricultural economy at a point when it was becoming an urbanized industrial powerhouse. (Meanwhile, across the ocean the great powers included the Austro-Hungarian Empire, the Ottoman Empire, and the Russian Empire -- all of which would vanish before the end of the decade.)

The presidential election of 1912 was in part a referendum on how to limit or channel the power of these new behemoths. All the major candidates (Woodrow Wilson, Teddy Roosevelt, William Howard Taft, and Eugene V. Debs) agreed that corporate power was a problem; they differed primarily in how government should respond. Roosevelt believed that in industries with economies of scale, big corporations were economically inevitable and should be tamed by a powerful federal government -- in essence, we should have an economy of regulated monopolies. Wilson and his advisors believed that their size alone was a threat that should be dealt with by keeping businesses as dispersed as was
feasible. The 1911 breakups of Standard Oil and American Tobacco exemplified the kind of action Wilson favored.

In the event, Wilson won the election, and during the first two years of his administration the US gained new powers to keep industries competitive. The Clayton Act of 1914 extended the Sherman Act by explicitly forbidding several anticompetitive actions: mergers that lessen competition; sharing board members among competing companies; price discrimination; and exclusive dealings and tying. The Clayton Act was much more explicit than the Sherman Act in specifying what companies could and couldn’t do, although it also created room for interpretation by the Department of Justice and the new Federal Trade Commission.

Much of the thinking behind this approach to regulation came from Louis Brandeis, whom Wilson appointed to the Supreme Court in 1916. Brandeis saw industries as tending naturally toward greater concentration and monopoly and recognized the threat that such concentrated economic power could pose to a democracy. In a Brandeisian world, small is both beautiful and better for democracy.

**The New Deal and the regulation of capital and labor markets**

The laws created to limit corporate power during the Progressive Era were expanded during the New Deal that followed the election of Franklin D. Roosevelt in 1932. Where the Sherman Act and the Clayton Act created rules governing competition in product markets and supplier markets, New Deal reforms took on capital markets and labor markets.

By this point the composition of the leading corporations had shifted from raw materials toward manufacturing and other advanced industries, and the economic threats came less from concentrated product markets than from powerful finance and weak labor.

**Table 2: The Dow Jones index, 1932**

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<tr>
<td>Allied Chemical</td>
<td>General Electric</td>
<td>Nash Motors</td>
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<tr>
<td>American Can</td>
<td>General Foods</td>
<td>Procter &amp; Gamble</td>
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<tr>
<td>American Smelting</td>
<td>General Motors</td>
<td>Sears Roebuck</td>
</tr>
<tr>
<td>American Tobacco</td>
<td>Goodyear</td>
<td>Standard Oil CA (Chevron)</td>
</tr>
<tr>
<td>Bethlehem Steel</td>
<td>IBM</td>
<td>Standard Oil NJ (Exxon)</td>
</tr>
<tr>
<td>Borden</td>
<td>International Harvester</td>
<td>Texas Company (Texaco)</td>
</tr>
<tr>
<td>Chrysler</td>
<td>International Nickel</td>
<td>Union Carbide</td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>International Shoe</td>
<td>US Steel</td>
</tr>
<tr>
<td>Drug Inc.</td>
<td>Johns-Manville</td>
<td>Westinghouse</td>
</tr>
<tr>
<td>Eastman Kodak</td>
<td>Loew's</td>
<td>Woolworth</td>
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In finance there were new laws to keep banks dispersed and to maintain separation between investment banking (underwriting and trading in stocks and bonds) and commercial banking (taking in deposits and making loans to business). The 1933 Banking Act (broadly known as the Glass-Steagall Act) created deposit insurance, prohibited banks from risky speculation with their depositors’ money, and prevented commercial banks from combining with investment banks. The long-term success of the project to subdue the power of banks is shown by the fact that by 1980 the US had 12,000 commercial
banks, nearly all limited to branching within a single state.\textsuperscript{30} It also had thousands of local savings and loans, credit unions, asset finance firms, check cashing stores, and more. By contrast, Canada had a half-dozen major national banks at that time, and German banking was dominated by three major “universal banks” (that is, institutions that did both investment banking and lending).

The 1933 Securities Act created federal regulation for companies that issued stocks and bonds and required corporations to disclose systematic financial information to their investors. The 1934 Securities Exchange Act created the Securities and Exchange Commission (SEC) to oversee trading in securities and to implement the disclosure requirements from the 1933 Act. These two acts are the reason we have such comprehensive financial information about corporations listed on American markets.

For labor, Congress vouchsafed the right of workers to form unions via the Wagner Act of 1935, which created the National Labor Relations Board to oversee the process of organizing and collective bargaining. The Fair Labor Standards Act of 1938 implemented a minimum wage for most occupations and mandated overtime pay for time worked over 40 hours per week. In combination, these laws radically changed the relative power of labor with respect to corporate employers. Thus, the number of union members increased from under 10\% of the labor force in the late 1930s to nearly 30\% 15 years later.\textsuperscript{31}

And in 1936 Congress passed the Robinson-Patman Act to limit price discrimination by prohibiting suppliers from providing goods at lower prices to “preferred customers,” such as chain stores. The effect was to protect smaller shopkeepers from being underpriced by national chains such as A&P (the Walmart of its time).

\textbf{The glorious postwar years}

The final major antitrust legislation was the Celler-Kefauver Anti-Merger Act of 1950. Congress was motivated in part by concerns that monopoly in industry had enabled the rise of fascism in Europe: as Brandeis had pointed out, concentrated economic power can create concentrated political power, to the detriment of democracy.\textsuperscript{32} Celler-Kefauver would prevent this with strict limits on how firms could grow through acquisition, including not just horizontal mergers (buying competitors) but also vertical integration (buying suppliers or distributors) and even conglomerate mergers (buying firms in unrelated industries). Celler-Kefauver largely completed the arc of American antitrust law and created substantial barriers to horizontal and vertical mergers for the next three decades.

Surprisingly, American companies did not stop growing after 1950. Some grew organically: by 1962, General Motors had a 51\% share of the US auto market and employed over 600,000 workers.\textsuperscript{33} Others conglomerated, nudged by Celler-Kefauver’s restrictions. ITT expanded from 132,000 employees in 1960 to 392,000 in 1970 by buying up hundreds of familiar brands in any industry you could think of: home construction, semiconductor manufacturing, life insurance, auto parts, vocational education, Avis car rental, Twinkies and Wonder Bread, Sheraton Hotels, and the Chilean national telephone company. Relative to the size of the economy, conglomerates were simply massive: by 1970, the 25 largest

\textsuperscript{30} See Davis and Mizruchi (1999) on the evolution of American commercial banking.
\textsuperscript{31} \url{https://obamawhitehouse.archives.gov/sites/default/files/page/files/cea_worker_voice_issue_brief.pdf}
\textsuperscript{32} See Crane (2020) on the potential ties between fascism and monopoly in Germany and the US.
\textsuperscript{33} \url{https://knoema.com/infographics/floslle/top-vehicle-manufacturers-in-the-us-market-1961-2016}
American corporations employed the equivalent of 11% of the private labor force, a number never equaled before or since. And the political power of business had hardly been tamed: ITT was a central player in the 1973 coup against President Salvador Allende in Chile. Big companies could be powerful even without dominating any particular industry.

The wave of conglomerate acquisitions continued for another decade and diversification became a standard tool of corporate growth. By 1980 most major corporations in America were diversified. Ford made cars, trucks, tractors, aerospace equipment, real estate developments, and loans. Westinghouse built nuclear plants, locomotive engines, missile launchers, elevators, office furniture, high school curricula, wristwatches, and Seven Up. And GE did it all: jet engines, plastics, X-ray machines, kitchen appliances, televisions, steam turbines, uranium mining, financial services, and light bulbs.

In short, if the aim of post-war antitrust was to prevent the “curse of bigness,” it failed miserably. American corporations had become massive, gerrymandered districts on the industrial landscape.

**Bork’s backlash against antitrust and the revenge of Big Business**

The standard account of the new anti-monopolists describes a happy, competitive postwar American economy full of small family businesses and local shopkeepers engaged in friendly competition to serve their customers better, thanks to antitrust’s limits on corporate power. According to Barry Lynn, “America in 1950 was a land of independent farms, independent stores, independent businesses, and independent communities ruled to a very large degree by the people who lived in them. It was a world in which almost any citizen who wanted to get ahead had real opportunity to do so (or, at least, any white male citizen with access to the generous government programs and bank credit of the time).” But this idyllic world reached a turning point in 1978 when Robert Bork, a Yale law professor schooled at the notorious University of Chicago, published *The Paradox of Antitrust*.

According to critics today, Bork shamelessly misrepresented the purpose of the Sherman Act, arguing that the entire point of antitrust was to enhance consumer welfare as measured by the prices customers paid. As Bork saw things, quantifiable metrics wielded by trained economists were essential to proving that monopoly power was harmful. Moreover, corporate power without consumer harm was irrelevant. Big firms generally got big by being better at what they did than competitors, not by underhanded tactics. Predatory pricing never happened in the real world. And Bork twisted the meaning of commonsense words. Competition, for instance, becomes “any state of affairs in which consumer welfare cannot be increased by moving to an alternate state of affairs by judicial decree” (see Paul, 2020: 416.)

All readers today can evidently see through Bork’s tortured reasoning and flimsy evidence, just as we all now realize that disco and polyester clothing were a mistake. Tim Wu (2018: 89) states “Not a single statement in the legislative history comes close to stating the conclusions that Bork drew.” Sally Hubbard (2020: 12) points out that Bork and his disciples claim “the laws’ goal first and foremost is to promote corporate efficiency,” yet “efficiency” appears nowhere in the text of the Sherman Act. Khan and Vaheesan (2017: 277) assert “the passage of the Sherman Act was animated by at least three goals: (1) the distribution of political economic power, (2) the prevention of unjust wealth transfers from

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consumers and small suppliers to large entities, and (3) the preservation of open markets,” yet Bork
narrowed this to just one. But somehow economists, judges, politicians, and regulators were
mesmerized by the sophistry of this wild-haired scholar. And once Ronald Reagan was elected to the
presidency two years later, the project of antitrust -- to protect citizens and democracy from monopoly
power -- slipped into a coma, as Bork’s fellow travelers were injected into our regulatory and judicial
apparatus like PFAS into the water supply.

The Antitrust Division of the Justice Department relaxed horizontal merger guidelines in 1982, making it
easier for corporations to acquire their competitors, and the FTC followed suit. The standards for
judging whether a proposed merger was bad for competition shifted from industry concentration, which
is easy for anyone to see, to inscrutable economic mumbo-jumbo. The number of government lawyers
dedicated to antitrust spiraled downward. And even the election of Democrats to the White House
failed to rouse antitrust from its slumber. Four decades later we are heirs to the trauma of Borkism.

What are the results? “You probably have a phone made by one of two companies. You likely bank at
one of four giant banks, and fly on one of four big airlines. You connect with friends with either
Facebook, WhatsApp, or Instagram, all of which are owned by one company. You get your internet
through Comcast or AT&T. Data about your thoughts goes into a database owned by Google, what you
buy into Amazon or Walmart, and what you owe into Experian or Equifax. You live in a world structured
by concentrated corporate power” (Stoller, 2019: xiv).

How monopolists turned the 21st century American economy into a
dystopian hellscapen

How, exactly, do monopolists perpetrate their economic crimes? The standard story is straightforward.
Industry concentration (however achieved) leads to monopoly power and less competition. A company
with a large market share is able to charge its captives prices that are too high (or, sometimes, too low,
or too different), pay lower wages, extort suppliers, and use underhanded tactics to compete with
actual or potential rivals. Market share also gives firms excessive political power -- including undue
influence over their regulators.

The Congressional subcommittee report on the monopolistic actions of Big Tech companies is something
of a master class in the exercise of monopoly power. Facebook maintains its monopoly power in social
networking by buying up nascent competitors before they can grow big enough to be threatening, or
shamelessly copying their innovations, all while serving up dangerous misinformation on a global scale.
Google’s monopoly power in internet search and its vast economies of scale and scope make it
indispensable for businesses seeking to share information with consumers, who are forced to buy ads on
Google to avoid being invisible. Amazon’s dominance in online retail makes it the sole distribution
channel for hundreds of thousands of businesses, who have no realistic alternative to meeting whatever
demands Amazon makes on them -- even as the company uses its extensive surveillance capabilities to
create and market its own copycat goods. And Apple controls the operating system of the most popular

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35 Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary,
“Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations” (issued October
smartphone in the US and the only store iPhone owners can use to download apps, depriving consumers of alternatives and forcing software developers to pay its commissions and meet its arbitrary demands.

This sounds bad if you’re a small business or app developer seeking to sell your product over the internet. But a consumer might well ask: How bad is it really? If I go to Amazon.com and search for cat litter, or headphones, or vitamin D, or hubcaps for a Ford Fusion, I encounter many different brands, and for any brand there are often multiple sellers with surprisingly diverse prices, all ready to ship their products to my home in the coming hours or days. If I want to have a video call with my sister in Scotland, I have my choice of Zoom, Skype, Google Hangouts, Microsoft Teams, FaceTime, WhatsApp, WebEx, and more -- all free. If I want to watch “The Princess Bride,” I can choose from Hulu, HBO, Amazon Prime, YouTube, and several more obscure outlets. And if I want food to show up at my door from four different restaurants for every member of my family (vegan for me, Thai for my wife, Mexican for my son, pizza for my daughter), I can contact DoorDash, Grubhub, Postmates, or UberEats.

Admittedly, I may be forced to wash the meal down with bland beer from a brewery ultimately owned by hated monopolist AB InBev. Or I can choose a hoppy IPA from one of the half-dozen microbrewers within bicycling distance of my home.

It is possible that the biggest victims of our comatose antitrust system are not consumers, but other businesses. Put another way: it should not be surprising that an antitrust system oriented toward keeping consumer prices low has created an economy in which consumer prices for many goods are, in fact, low. This often comes at the expense of vendors and labor -- but they are not the central focus of antitrust.
The problems with the monopoly narrative

Let’s be very clear: profit-oriented corporations are responsible for a lot of mischief. Indeed, nearly every pathology in American society today was created or exacerbated by corporations.

The opioid epidemic, caused by profit-seeking pharmaceutical corporations, kills more than 60,000 people per year and has single-handedly reduced the average life expectancy of Americans.36 (Overdose deaths rose to nearly 90,000 per year during the pandemic.37) 40% of American adults are clinically obese largely due to the efforts of corporations that sell fine-tuned formulas of sugar, salt, and fat in efficient calorie-delivery vehicles, packaged in single-use plastic containers that will be on this earth long after our species is extinct.38 Vaping companies have introduced a new generation of teens and pre-teens to the joys of nicotine addiction, advertising their candy-flavored pods on child-oriented websites.39 Social media companies have created safe spaces for plotting sedition and genocide, drawing on the latest behavioral insights to create compulsive usage while undermining the business model of a free press.40 Ride-hailing and delivery companies are funding legislation to destroy the employment relation in America, turning workers into a corps of precarious on-demand contractors.41 Fossil fuel corporations aggressively hurtle our species toward climate extinction while funding deceptive research denying their culpability.42

If you are looking for corporate wrongdoing in America, you don’t have to go far. But our biggest problem is not monopoly -- it’s shareholder capitalism. We would not be better off by having even more profit-seeking competitors selling opioids, overprocessed food, candy-flavored nicotine, addictive social media, gig jobs, or fossil fuels. There are many ways to be evil that do not involve monopoly.

Moreover, the consensus monopoly narrative is rooted in a set of stylized facts and selective evidence that do not hold up to cross-examination. Let’s start with the main factual claim of the new antimonopolists: that after Bork published his notorious tome and Reagan’s appointees gutted traditional antitrust enforcement, industries across the board became concentrated. Recent books and articles about the horrors of monopoly often cite a claim that 75% of American industries have become more concentrated over the last two decades. And there it is, in the opening sentence of an article in an academic journal: “Since the late 1990s, over 75% of US industries have experienced an increase in concentration levels” -- at least through 2014, when the data end.43 Other sources relying on the same data come to similar conclusions.

39 https://www.theguardian.com/commentisfree/2020/feb/14/juul-vape-smoking-e-cigarettes-health
40 https://www.theguardian.com/technology/2017/oct/05/smartphone-addiction-silicon-valley-dystopia
42 See Oreskes and Conway (2010) on the corruption of science by industry.
43 Grullon et al. (2019: 697). See also Gutierrez and Phillipon (2017) and De Loecker et al. (2020).
This claim is cited verbatim in the second paragraph of the “Fact Sheet” for Biden’s executive order on competition\(^\text{44}\) and in various ways in many different anti-monopoly tracts:

- Wu (2018: 20): “since the year 2000, across U.S. industries, the Herfindahl - Hirschman index, which measures market concentration, has increased in over 75 percent of industries.”
- Meagher (2020: 21): “One study finds that 75 per cent of industries in the US have experienced a reduction in the number of competitors and a corresponding increase in levels of industry concentration in the last two decades.”
- Hubbard (2020: 11): “Between 1997 and 2014, corporate concentration increased in 80 percent of industries by an average of 90 percent, according to economists.”
- Konczal (2021: 148): “Over the past two decades, 75 percent of industries have seen a significant increase in concentration. Corporate profits are also up, and both concentration and profitability are at levels that existed in the 1970s and before.”

But wait: the same article reports a dramatic \textit{decline} in industry concentration during the three years after the 1982 DOJ merger guidelines, and the authors state, “Consistent with increased competition documented by prior studies...the concentration index declines beginning in the 1980s and remains low until the late 1990s, reaching its lowest point in 1996–97.”\(^\text{45}\) If industries freed from antitrust inevitably become concentrated, then why would industry concentration drop for 15 straight years after Bork’s ideas were put into practice?

The short answer is that evidence of increasing industry concentration is weak, unsystematic, and inconsistent, and doesn’t always tell us very much about the actual state of competition.

\textbf{It’s harder than it looks to measure “market concentration”}

The data behind the widely-cited figure above come from annual sales reported for US-based corporations that are listed on a stock market, with “industry” defined at the 3-digit NAICS level. (Bear with me a moment.) In plain English: for any given year, take all the companies listed on a stock market and incorporated in the US, sort them into their primary industry, add up all the sales for all the companies in the same industry, divide each company’s sales by their industry’s overall sales, and you get market share data. From there you can calculate various measures of industry concentration -- say, how much of the industry’s sales come from the four biggest companies, or fancier measures like the Herfindahl-Hirschman Index (the sum of the squared market shares).

An example of a 3-digit NAICS industry is “Leather and allied products manufacturing.” As the authors point out in an online appendix,\(^\text{46}\) this industry includes Coach (which makes fancy handbags), Nike (which markets a very wide array of sporting goods, including sneakers), and Skechers USA (casual shoes). As is immediately evident, many firms in the same 3-digit industry are not really competitors at all, as their products are not plausible substitutes.


\(^{45}\) Grullon et al. (2019: 701).

\(^{46}\) \url{https://doi.org/10.1093/rof/rfz007}
But there are several other problems with this approach. As described above, most major corporations in 1980 were diversified, and some operated in dozens of industries, from soda bottling to nuclear plants, or from casinos to the Chilean national phone company. It is highly misleading to allocate ITT’s or GE’s total revenues to any single industry. (This problem largely went away, as I will describe below, but then came back.)

A second difficulty is that American corporations have been global for generations and have become even more so over time. S&P 500 companies today generate 30-40% of their revenues overseas.\(^{47}\) This is particularly true of the high-tech success stories whose products (or services, or whatever) are purveyed online. Two-thirds of Netflix subscribers are outside of the US and Canada; 67% of Apple’s sales come from outside the US; most of Alphabet’s revenues are from overseas. It makes no sense to include foreign revenues in measures of domestic market concentration. Consider an extreme case: Yum Brands (proprietor of Pizza Hut, Taco Bell, and KFC) spun off its China-based outlets into a new company named Yum China Holdings, which operates over 10,000 stores and is the largest restaurant company in China. But because it is incorporated in Delaware and traded on the New York Stock Exchange, Yum China Holdings’ revenues would contribute to US industry concentration in NAICS code 722 (Food Services and Drinking Places). Conversely, Anheuser-Busch is now owned by AB InBev of Belgium, and thus a foreign company whose US sales are not captured by this measure.

Moreover, measuring industry concentration at a national level is often irrelevant to how competitive an industry is on the ground.\(^{48}\) A town with five grocery stores, each with a 20% local market share, has the same degree of competition whether the stores are separate outlets of national chains or each owned by local grocers. and this is true for almost any local provider (restaurants, retailers, gyms, funeral homes, hospitals, churches). Olive Garden’s national sales figures have little relevance for competition in my town (which has many fine local Italian restaurants, thank you very much).\(^{49}\)

A fourth problem with using these data is that an increasing number of big companies are not listed on the stock market. The number of listed corporations in the US dropped by half from 1997 to 2012 and has not come back. Much of this is due to failures (e.g., the dot-com collapse in 2000 and the financial industry meltdown in 2008); some is due to horizontal mergers (e.g., Pfizer’s serial acquisitions of Warner-Lambert, Pharmacia, and Wyeth). But much of it is due to the unprecedented rise of private equity as an alternative to the public market. During the years that Dell (and Hilton, Chrysler, Hospital Corporation of America, Safeway…) are owned by PE funds, they don’t appear in the market share data,


\(^{48}\) Berry et al. (2019) describe how the structure-conduct-performance approach was abandoned by industrial organization economists in the late 1980s but seems to have re-emerged, zombie-like, in recent discussions of antitrust.

\(^{49}\) Shapiro (2018) provides additional detail on the limitations of connecting industry concentration, competition, and profitability. Rossi-Hansberg et al. (2021) report that in many cases market concentration is actually declining at the local level even as it increases at the national level, as the entry of national firms in local markets reduces these markets' concentration.
thus distorting their industry’s measured concentration. Assets under management in private equity
grew by $4 trillion in the past decade, as many familiar brands have been taken private.\(^{50}\)

Last, how do we measure “market share” in industries in which companies do not charge for their
services? Social media, online search, and many other “concentrated” markets do not have any direct
revenues from sales to customers -- they are funded by advertising and give away their product for free.
Measures of market share when there is no actual market can be arbitrary and difficult to compare with
revenue-based shares. For example, what is the market share of Wikipedia, or Linux, or Python?

There are other data one can draw on to calculate industry concentration -- e.g., the Economic Census
(cf. Autor et al., 2020) -- but many of the problems I have mentioned apply here as well. As industrial
organization economists have long known, you simply can’t infer the state of competition in an industry
by toting up the national revenues of firms in that industry. Suppose General Motors and Ford decide to
spin off their major parts operations into free-standing public companies (as both did in the 1990s).
Nothing changes in the level of concentration based on final revenue in the auto industry, but we now
have new revenues appearing by magic in the auto parts industries because “internal” suppliers are now
“external.”\(^{51}\) You also can’t always tell much by adding up the profits that companies declare each year.
Between 1997 and 2017, department store chain Macy’s reported earning twice as much cumulative
profit as Amazon. Which firm is the monopolist -- Macy’s, or Amazon?\(^{52}\)

An alternative way to get at “bigness” is to forego industry entirely, and simply examine the aggregate
concentration of the economy -- that is, how much is controlled by, say, the 500 largest corporations.
Here again, we do not see reason to believe the narrative of ever-increasing concentration brought
about by Bork: “Between the early 1980s and the mid 1990s there was a decline in aggregate
concentration as shown by the annual employment percentages and profit percentages of the 500
largest firms in the U.S. economy. Since the mid 1990s, there appear to have been modest increases in
both percentages; but those percentages do not seem to have regained the levels of the early 1980s”
(White and Yang, 2020: 499). In other words, by some measures, the American economy has never
regained the level of concentration it had the year that Reagan was elected.

**There really are some monopolies out there, but our bigger problem is**
**shareholder capitalism**

If you have a narrative in mind -- monopolists are dominating more and more industries! -- you will
surely be able to find evidence consistent with that narrative. (This is known as the “confirmation bias”
in psychology. Once you learn about it, you will see it everywhere.\(^{53}\) There are a lot fewer airlines than
there used to be (and those that remain don’t cycle through bankruptcy quite as often as US Air did).
National retail chains have acquired or driven out regional chains -- Dayton of Minneapolis, Hudson of
Detroit, Marshall Field of Chicago, Federated of Cincinnati, and many other regional chains are all now

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52 [https://qz.com/1040856/amazon-amzn-has-made-half-the-profits-of-macys-m-over-the-past-20-years/](https://qz.com/1040856/amazon-amzn-has-made-half-the-profits-of-macys-m-over-the-past-20-years/)

53 This joke is attributable to Jon Ronson.
part of profit-gusher Macy’s.\textsuperscript{54} The biggest beer companies in America really are big. And since the financial crisis the four biggest commercial banks have increased their market share -- we are now down to only 5000 commercial banks in the US, compared to 12,000 forty years ago.

Some monopolies really do pose hazards to society’s well-being. Agriculture in particular is made precarious by its hourglass industry structure.\textsuperscript{55} But the problem with anecdotal evidence is that it is equally possible to dig up alternative anecdotes that show the opposite. How many different flat-screen television brands are there today? Or video streaming services? Or vegan meat alternatives? Or apps? Or microbrews? Amazon has 1.9 million active sellers, and 200,000 of them generate over $100,000 in annual revenues.\textsuperscript{56} Apple’s app store lists 2 million apps; Google Play lists almost 3 million. We may not have as many Main Street shopkeepers as we did in that magical year 1950, but we have a lot more app developers, online merchants, and TikTok influencers.

The new anti-monopolists overlook the more consequential shift that happened after Bork: the rise of shareholder primacy and its focus on share price above all else. The corporate search for monopoly power, for industry segments with “moats” to protect against competition, is a vehicle used toward the ultimate goal of profits for shareholders. Monopoly power is just one tool among many used in service of this end, and as long as shareholder value is the motivating force in our corporate economy, we will not make progress toward a more humane and democratic society.

In the decade prior to Bork’s infamous book, economists published a series of provocative works that undermined the post-war corporate detente which underwrote America’s brief period of rapid economic growth, increased opportunity, and declining income inequality (ca. 1945-1973). Some of these works are well known. 50 years ago Milton Friedman famously argued in the New York Times Magazine that corporations exist to make profits, not to serve higher social purposes -- a claim that was considered shocking at the time, yet self-evident today. Alchian and Demsetz (1972: 777) asserted that there was nothing sacred about the boundary between the inside and outside of a company, and that the contractual relation between a boss and an employee involves no more “authority” than the relation between a customer and a grocer. “To speak of managing, directing, or assigning workers to various tasks is a deceptive way of noting that the employer continually is involved in renegotiation of contracts on terms that must be acceptable to both parties. Telling an employee to type this letter rather than to file that document is like telling a grocer to sell me this brand of tuna rather than that brand of bread.” (This description is notably similar to the minute-by-minute “negotiations” that Uber drivers experience -- see Cameron, 2021). Jensen and Meckling (1976) combined these two elements, describing the corporation as a mere nexus-of-contracts with no tangible social reality. According to this account, the main problem the corporation had to solve was motivating the people who ran it to create shareholder value. If the corporation failed at this task, it was up to outsiders to buy up the company’s shares, fire its top managers, and replace them with people more devoted to the company’s share price -- a process known as the “market for corporate control.”

\textsuperscript{54} Hsieh and Rossi-Hansberg (2019) describe how ICTs have increased economies of scale in retail and other service industries, encouraging consolidation in retail. Of course, competition in on-site retail is highly localized.
\textsuperscript{55} The antitrust critique of agriculture, however, often relies on distorted evidence that overstates the dire situation of farmers. See Don’t Trust the Antitrust Narrative on Farms - LPE Project
\textsuperscript{56} https://www.sellerapp.com/blog/amazon-seller-statistics/
Why would economists say these strange things? Why would they deny the tangible reality of a General Motors or an AT&T, century-spanning institutions who employed hundreds of thousands of Americans, often for a lifetime, and then funded their pensions and health care unto death?

The intellectual turn toward neoliberalism, and the invasion of law schools by economists, has received much attention elsewhere. But the impacts of this shift -- seeing the corporation as a mere legal fiction that existed to create shareholder value above all else -- were profound.\(^\text{57}\) These arguments laid the groundwork for the de-construction of the corporation as a social institution. It created the intellectual underpinning for what happened next, and paved the way for our ephemeral ICT-enabled economy today.

### The bust-up takeover boom

Reagan’s biggest impact on the corporate world was to enable a wave of bust-up takeovers that took apart the massive conglomerates built in the prior generation, which left the economy notably less concentrated than when he started. When Reagan took office in 1981, the modal big American corporation was some variant of a conglomerate, operating in several largely unrelated industries. Autor et al. (2020: 663) report that the largest firm in each industry in 1982 operated in 13 other industries. In short, GE, ITT, and Westinghouse were not outliers, but the norm.

While these companies may have been big, they were not successful -- at least as far as the stock market was concerned. On average, the more industries a corporation operated in, the more it was undervalued (that is, the price of its shares was lower than it should be). This was a problem with a solution, at least in principle. Imagine buying ITT and splitting it up into 20 smaller companies: Sheraton hotels, Hartford insurance, Avis rent-a-car, Hostess baked goods, ITT vocational training, and so on. According to the stock market, the whole was worth less than the sum of the parts -- and it was not just ITT, but broad swaths of corporate America. The last 20 years of Celler-Kefauver-driven conglomeration had been a giant, tragic mistake.

Meanwhile, financial technologies (including the mundane spreadsheet) were making it easier to value these things and figure out just how much money could be made by buying them and splitting them up. New methods of funding such as junk bonds and large-scale bridge loans were becoming available. And legal and regulatory changes were making it possible to buy companies from shareholders without getting the permission of the company’s managers or board of directors, known as a hostile takeover. (This was done by a “tender offer,” which is not as sweet and gentle as it sounds.)

All the conditions were in place for the biggest wave of hostile takeovers ever seen. Between 1980 and 1990, 29% of the listed companies in the Fortune 500 were subject to a tender offer. Most of these were hostile (that is, fought by the company’s incumbent board), and they were overwhelmingly successful. In the course of a decade, between hostile takeovers and negotiated mergers, one in three of the largest American corporations changed hands, and the people who ran them were tossed out (albeit often with a tasty severance package).\(^\text{58}\)

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\(^{57}\) I trace this tale in Davis (2009).

\(^{58}\) This is documented in detail in Davis and Stout (1992)
Unlike prior merger waves, these deals did not result in even larger and more diversified corporations. Instead, the typical deal led to conglomerates being busted up into their component parts and spun off into free-standing companies or sold to related acquirers. And the companies that remained received the message, forsaking acquisitions and splitting themselves up into more focused components to escape the fate of their hapless peers. Within a decade, members of the Fortune 500 were lean, mean, and laser-focused on a core industry competence.59

The notion that Reagan’s Bork-inflected vision was a gift to Big Business would surely come as a surprise to the one in three CEOs who lost their jobs in the 1980s takeover wave. We tend to remember Gordon Gecko making his “Greed is good” speech, but forget the two dozen uncomfortable directors and executives sitting on the stage who had to listen to it and contemplate their impending unemployment. Antitrust did play a part in the takeover wave. Henry Manne (1965) argued that strict antitrust kept badly-run companies in business because the most obvious candidates to buy them and fix them -- their competitors -- were not allowed to do so. Thus, the 1982 horizontal merger guidelines provided some willing customers for busted-out divisions of conglomerates. But this did not yield notably more concentrated industries.

The biggest impact of the Reagan years was to establish that corporations existed first and foremost to create shareholder value, and everything else was secondary. The corporation had been financialized. A way to visualize this is to visit once again the Dow Jones index, this time for 1982. Note that 22 of the 30 Dow companies had been there for half a century or more, and all of them were venerable pillars of American capitalism.

### Table 3: The Dow Jones index, 1982

| Allied Chemical | General Foods | Owens-Illinois |
| ALCOA          | General Motors | Procter & Gamble |
| American Can   | Goodyear       | Sears Roebuck |
| American Tobacco | IBM         | Standard Oil CA (Chevron) |
| AT&T           | International Harvester | Texaco |
| Bethlehem Steel | International Nickel | Union Carbide |
| DuPont         | International Paper | United Technologies |
| Eastman Kodak  | Johns-Manville | US Steel |
| Exxon          | Merck          | Westinghouse |
| General Electric | Minnesota Mining & Mfg | Woolworth |

Today, only five are left: Chevron, IBM, Merck, 3M, and Procter & Gamble.

Not all the rest have vanished, but many have passed through bankruptcy or are in precarious shape. It is like seeing what’s left of your high school football team at your 40-year class reunion. Whatever happened to Bethlehem Steel, or Eastman Kodak, or Westinghouse? Didn’t Johns-Manville get in trouble with some asbestos? Is Sears still alive? GE was the quarterback, but now it’s looking a little...haggard.

59 See Davis, Diekmann, and Tinsley (1994) for details on de-conglomeration and its impact on corporate size and diversification.
And contrary to the narrative of Borkism, industry consolidation does not account for most of the changes in these companies. They did not go off on a wild frenzy of industry consolidation. Instead, they mostly drifted into irrelevance.60

The outsourcing wave of the 1990s

The Bork-monopoly narrative has a hard time explaining the massive industry restructuring of the 1980s. It also provides little insight into the wave of layoffs and outsourcing that took hold in the 1990s. If companies love getting bigger, then why were so many of them disposing of employees, spinning off divisions, and hiring outside vendors for many of the things they used to do for themselves, like payroll, or IT, or even manufacturing? Why would Ford spin off Visteon, its massive parts division, and Associates, its finance group? Why would GM spin off Delphi (its own parts division) and Electronic Data Systems, and sell off its finance and electronics businesses? Why would Sara Lee sell off its factories and later spin off its varied brands (Coach, Champion, Hanes), winding up a stub of its former glory?

The short answer is Nikefication. Nike had shown that it was entirely possible to focus on design, branding, and advertising, and to hire overseas contractors to do the more labor-intensive work of making sneakers. As the 1990s wore on it became clear that this same model applied in lots of industries, from electronics to pharmaceuticals to pet food. The Web allowed companies to share design specifications and keep track of dispersed production in real time, and the growth of a set of generic manufacturers allowed them to outsource activities formerly considered essential. Pressured by Wall Street investors, corporations increasingly shrank down to a core and outsourced the rest. Many “original equipment manufacturers” no longer manufactured anything with their name on it. They increasingly looked like the nexus-of-contracts foretold by the 1970s-era economists.

Spinoffs and splitups continue to be rampant across the corporate landscape. In recent years HP split into two separate companies (products and services), as did Xerox; Time-Warner divided into several parts; GE spun off almost all its most recognizable divisions, including its massive finance operations; pharma giant Abbott Labs spun off Abbvie; Verizon bought and then sold Yahoo and AOL; AT&T bought and then sold Time-Warner; and so on. Counting up mergers without also counting up de-mergers yields a deceptive impression that corporations inevitably tend toward gigantism, but in a world ruled by shareholder value, size is not the most relevant metric of corporate success.

We may have a monopoly problem, but shareholder capitalism is a bigger problem. Trying to fix the pathologies of shareholder capitalism using the tools of antitrust is like trying to make ice hockey safer by changing the color of the puck.

Conceptually, we have an even bigger problem. Software is eating the world, and for dessert it is dining on the categories we used to understand the economy. The basic categories we use to diagnose conditions like “monopoly” have shifted. If “monopoly” is when an American industry is dominated by one or two big corporations, then what happens if “American,” “industry,” and “big” no longer apply? It is like returning to Paris after Baron Haussmann completely re-designed the central city and trying to

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locate the family home. Nationality, industry, and size are increasingly misleading categories to understand our economy. In the next three sections, we consider each of these.
What is nationality now?

What is the nationality of Royal Caribbean Group? The vacation cruise company, which booked $11 billion in revenues the year before Covid, is headquartered in Miami (so, Caribbean-adjacent), and listed on the New York Stock Exchange. A plurality of its customers come from the US. But it is not an American company. Its ships fly the flags of many lands, but not the US -- because then the globally-sourced crew could be subject to American labor laws.

In fact, Royal Caribbean is incorporated under the laws of Liberia, a country that its executives almost certainly could not locate on an unmarked map of West Africa. The tax benefits are just too attractive to pass up. In the poetic words of RCL’s annual report, “We believe that most of our income...is derived from or incidental to the international operation of a ship or ships and, therefore, is exempt from taxation under Section 883.” Like a church or a soup kitchen, Royal Caribbean does not pay US income taxes.

Royal Caribbean is not alone in its ambiguous citizenship. Carnival is incorporated in Panama, while Miami-based Norwegian Cruise Line is, of course, incorporated in...Bermuda. Corporations do not carry a passport, and their nationality is often unclear. Fiat Chrysler, which combined Italian and American automakers, was legally Dutch, and after merging with France’s PSA Group (Peugeot, Citroën) to form Stellantis, remained incorporated in the Netherlands. Consulting giant Accenture was Bermudan but is now Irish. And Yum China Holdings, owner of several thousand KFCs and Pizza Huts in China employing nearly a half-million workers, is incorporated in Delaware and traded on the New York Stock Exchange, making it all-American. Particularly for online businesses (which increasingly encompasses all businesses), nationality is a conundrum.

Law as a virtual product

For a person on the street, the law is a set of external constraints on their behavior, like the Ten Commandments, handed down through some obscure and vaguely intimidating process and enforced by the police. For a corporation, however, law is an operating system for governing business contracts. As with their other software purchases, corporations are discriminating consumers when they shop for law. They are able to fine-tune where they choose to incorporate, where they stash their copyrights and trademarks, what arbitrator will settle their commercial or labor disputes, even where they will sue their rivals -- regardless of the physical location of their work (if any). Courts may reside in a particular place, but law does not.

If law is a product, then who are the vendors? Who competes to attract customers, and how? In the US, corporate law is made by each of the 50 states, and for some of them the fees for administering corporate law are a big business. Tiny Delaware is the legal home of over 2/3 of the Fortune 500 and receives a substantial part of its annual budget from corporate licensing fees. Thanks to revenues from its corporate customers, Delaware can offer low property taxes and no sales tax to its citizens. Delaware

62 https://cruiserradio.net/fact-check-do-cruise-lines-pay-us-taxes/
is the McDonald’s of corporate law, fast, clean, and predictable -- all of which make it an attractive legal domicile for a large majority of American corporations.

When the physical location of a company’s activities is unrelated to its place of incorporation, there is little need to be provincial. Since the end of World War II, Liberia has provided “flags of convenience” for merchant ships as well as incorporation services for companies such as Royal Caribbean. There are many advantages to Liberian incorporation, notably when it comes to taxes. You can find out how to incorporate online at https://www.liscr.com/liberian-corporate-registry. And to highlight the fact that law is a business service, like IT and accounting and payroll processing, Liberia’s ship and corporate registry has been outsourced to a corporate vendor housed near Dulles Airport in Virginia. (Presumably shareholder suits still would be litigated in Monrovia.)

Offshore incorporation is not just for tax cheats.64 Today, even legitimate businesses have legitimate reasons to incorporate in Bermuda, a legitimate country. When Accenture went public as a Bermuda corporation, its rationale was plain enough: we are a global company operating in dozens of countries around the world, with no central headquarters. Why should our citizenship be tied to any single city or country? And when the Obama administration hinted that it was skeptical of Accenture’s Bermuda-based operations, it quickly re-incorporated in Ireland, an even more legitimate island-nation.65 As Martin Wolf put it, today’s corporations are rootless cosmopolitans, with at best sentimental ties to any physical territory.

If Accenture -- née Arthur Andersen Consulting of Chicago -- can claim to be placeless with a straight face, why would we expect tech companies to be rooted in any particular locale? Accenture is half a million strong, and its teams of employees work in tangible, physical offices. When Coinbase went public in April 2021, on the other hand, its prospectus listed no address, and noted that it was a remote-first company with no physical headquarters.66 Instead, most of its 1249 employees worked wherevs. Like dozens of tech companies after Covid struck, most of their labor force works from home.

“Work from home” is almost certain to mean that employees who live in the vicinity of a company’s remaining facilities will face competition from contractors who may live anywhere in the world. (For those concerned about employer monopsony power: yay?) Companies have already become practiced at managing outsourced workers in India and the Philippines, and it will not be much of a stretch to accommodate a few more. The placeless enterprise staffed by remote contractors is certain to be increasingly common. Conversely, as one of my Silicon Valley informants told me, many remote tech employees try to claim a home address in a tax-free domicile far from high-tax California. Cash-strapped tax authorities may have little reason to track down work-from-home scofflaws claiming to live in Texas or Luxembourg.

64 Or, if not tax cheats per se, tax avoiders. The Guardian reported in June 2021 “An Irish subsidiary of Microsoft made a profit of $315bn (£222bn) last year but paid no corporation tax, as it is ‘resident’ for tax purposes in Bermuda. The company, Microsoft Round Island One, posted profits last year equal to nearly three-quarters of Ireland’s entire gross domestic product (GDP) – despite having zero employees.” https://www.theguardian.com/world/2021/jun/03/microsoft-irish-subsidiary-paid-zero-corporate-tax-on-220bn-profit-last-year
65 https://www.wsj.com/articles/SB124338175183056465
66 https://www.sec.gov/Archives/edgar/data/1679788/000162828021003168/coinbaseglobalincs-1.htm
On the Internet, nobody knows if you’re really Estonian

Because law is a business service operating in a competitive industry, it was inevitable that an online-first provider would emerge to take on the brick-and-mortar incumbents, as Amazon.com took on Borders and Barnes & Noble.

The first entrant in this new category was Estonia with its e-Residency program, launched in 2014. E-Residency is aimed primarily at internet entrepreneurs, providing access to Estonia’s online incorporation, payment, and banking services. Notably, e-Residency does not entail citizenship in real-world Estonia and does not give e-Residents the right to live in Estonia. Like the corporation, it is a legal fiction useful for business purposes. According to its website,67 “E-Residency allows digital entrepreneurs to manage business from anywhere, entirely online.” At this writing, there are over 80,000 e-Residents68 from 160+ countries who have started more than 10,000 businesses.69

e-Estonia is not a tax haven or an MFA thesis conceptual art project by an ironic hipster art student. Rather, it is a recognition of the inevitable evolution of business law in an online-first economy. Expect to see more entrants into the crypto-nationality business.

Note that even online-first enterprises cannot always escape entanglements with corporeal court systems. Facebook’s terms of service are very clear about where any complaints will be litigated: “For any claim, cause of action, or dispute you have against us that arises out of or relates to these Terms or the Facebook Products (‘claim’), you agree that it will be resolved exclusively in the U.S. District Court for the Northern District of California or a state court located in San Mateo County.”70 But if it’s a dispute within Facebook (e.g., “Should former President Trump be permanently banned from the Facebook platform?”), they will turn to their own internal supreme court.71

As Facebook demonstrates, being a sovereign state is not essential to operating a system of laws and their adjudication. Some of the more novel new online industries have created their own court systems to resolve disputes, like the admiralty courts of old. “Ransomware-as-a-Service” (RaaS) vendor DarkSide, which provides tools for hackers to seize control of the data of victims and collects a fee based on the size of the ransom paid to their affiliates, relies on escrow deposits and a third-party virtual court system operating on the Dark Web to ensure that there is honor among thieves (and extortionists). Trials are semi-public, which creates incentives for honest dealing.72

It is not hard to visualize virtual laws and virtual courts for virtual commerce, and as globally dispersed transactions for both capital and labor increasingly take place online, a global standard may emerge for the governance of boundaryless exchange.

The market share for placeless businesses

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67 https://e-resident.gov.ee/
68 https://e-resident.gov.ee/dashboard/
69 https://medium.com/e-residency-blog/five-years-of-e-residency-past-present-and-future-3df1786aa5ca
70 https://www.facebook.com/terms.php
71 https://www.nytimes.com/2021/05/05/technology/facebook-oversight-board-trump.html
72 https://threatpost.com/darkside-hackers-court-paying-affiliates/166393/
In the past year I have given talks in San Francisco, Singapore, Vancouver, Melbourne, London, Palo Alto, Cambridge in Massachusetts and England, Washington, Copenhagen, Denver, Milwaukee, Utrecht, Manchester, Oxford, and State College, PA, among other places...all without leaving home. (At this writing, it has been 16 months since I last took a flight.)

During the same period my good friend from high school, Patrick Olson, recorded an album at his home in California that received a highly enthusiastic reception on Spotify. He’s a very talented songwriter, but during the Covid year, playing with a live band in a studio was out of the question. Of course, anyone with a Macintosh computer has a built-in music studio already, and Patrick discovered that you can commission high-end studio musicians to record parts of your songs from wherever they happen to be. His method is to ask for three different takes: standard, lively, and “how you wish it had been written,” then combine the instruments bar by bar in his virtual home studio to create the finished track. Voila: a tight band composed of musicians who have never been in the same state together.73

Activities that we imagined required being in the same place -- leading a seminar discussion, playing with a band, collaborating on software -- can be done by geographically dispersed groups, and Covid has demonstrated that diverse enterprises can thrive after the office goes dark. For many forms of collaboration, geography has become largely irrelevant.

The increasing placelessness of the corporation makes market power a conundrum. For virtual products accessed via the internet and potentially originating anywhere, how do we contemplate market share? Take Spotify, the popular music streaming app. It is based in Sweden, incorporated in Luxembourg, and traded on the New York Stock Exchange, but its service is available around the world. Are its potential competitors “all music available over the web”? Or TikTok, the wildly popular short-form video app, which may or may not compete with Facebook, Instagram, Snapchat, YouTube, and others. Its Chinese owner, ByteDance, scrupulously segregates the Chinese and US variants of the app, hosting them on servers in their own geographic market.74 Nonetheless, in August 2020 President Trump threatened to shut down TikTok unless it was sold to a “very American” company like Microsoft,75 a threat that ultimately proved hollow. Or Grindr, the popular gay dating app. In 2016 Beijing Kunlun Tech Co., based in China, bought Grindr. Three years later the Committee on Foreign Investment forced the company to sell the app, citing national security concerns.76 Does Grindr compete with all means of meeting up, or all online dating services (Match.com, Eharmony), or only those with smartphone apps (Tinder, Bumble), or only those targeting a gay audience? And how, if at all, does its purported nationality matter for its market power?

In a corporate world of legal masala and industrial mashups, assessing market power will be an ongoing source of confusion. And when the Great Pacific Garbage Patch is declared a libertarian crypto-state, what will be its currency?

73 You can enjoy Patrick’s magical music at https://open.spotify.com/artist/1wUPEoJgkMBv0NzZSWfOnZ
74 https://www.buzzfeednews.com/article/ryanhatesthis/forget-the-trade-war-tiktok-is-chinas-most-important-export
What is industry now?

What industry does Coinbase operate in? According to the prospectus it issued before going public in April 2021, “you could think of our products as a safe and easy-to-use platform to buy, sell, store, save, spend, and use cryptocurrency...People are using cryptoccurrency to earn, spend, save, stake, borrow, lend, vote, and perform many other types of economic activity.”

Imagine explaining this business to yourself circa 2008, before Bitcoin emerged. “It’s like a brokerage, but for current and future currencies that exist outside the realm of nation-states, ‘mined’ by solving math problems, housed in the cloud on an anonymous non-fungible ledger that exists in dispersed databases...oh, forget it, just come back in 15 years.” Now try explaining to your younger self how a “crypto exchange” could be valued at $85 billion on its first day of trading, when Goldman Sachs -- the most venerable and prestigious Wall Street bank -- was worth $110 billion.

When forced to declare its industry using the traditional Standard Industrial Classification (SIC) system, Coinbase defaulted to 7389 -- “Business services, not elsewhere classified.” This turns out to be a crowded space: food delivery service DoorDash, whose stated mission is “To grow and empower local economies,” also claimed this industry, as did Lyft, whose mission is to “Improve people’s lives with the world’s best transportation.”

Industry rivals Coinbase, DoorDash, and Lyft face the same problem. Our system of industrial classification is not prepared for the boundary issues raised by software eating the world. The “technology industry” is not an industry, and this raises real challenges when it comes to assessing basic descriptive facts such as industry concentration.

Industry boundaries after software has eaten the world

In 2020 and 2021, several technology companies made their debut on the stock market. Airbnb provides a platform to rent lodgings on a short-term basis. Is it in the hotel industry? Coursera gives learners access to courses online. Olo is an “on-demand commerce platform for multi-location restaurant brands.” Asana is “a work management platform that helps teams orchestrate work, from daily tasks to cross-functional strategic initiatives.” Palantir builds “software platforms for large institutions whose work is essential to our way of life,” particularly in intelligence and defense. Bentley Systems’ “software solutions are used to design, engineer, build and operate large constructed assets such as roadways, bridges, buildings, industrial and power plants and utility network.” C3.ai provides “applications that enable the rapid deployment of enterprise-scale AI applications of extraordinary scale and complexity that offer significant social and economic benefit.” Snowflake is “pioneering the Data Cloud, an ecosystem where Snowflake customers, partners, and data providers can break down data silos and derive value from rapidly growing data sets in secure, governed, and compliant ways.”

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77 https://www.sec.gov/Archives/edgar/data/1679788/000162828021003168/coinbaseglobalincs-1.htm
78 Prospectuses are available at:
Airbnb: https://www.sec.gov/Archives/edgar/data/1559720/000119312520294801/d81668ds1.htm
Coursera: https://www.sec.gov/Archives/edgar/data/1651562/000119312521071525/d65490ds1.htm
Olo: https://www.sec.gov/Archives/edgar/data/1431695/000119312521049073/d867519ds1.htm
Asana: https://www.sec.gov/Archives/edgar/data/1477720/000119312520228462/d855753ds1.htm
This is a rich and diverse buffet of tech nerditude that spans hotels, restaurants, schools, highways, infrastructure construction, spying, and, apparently, clouds. And yet all these businesses are classified in SIC code 7372 (“Prepackaged software”). By tradition, this means we should regard them as competitors. Uber also classified itself as 7372, while its most obvious direct competitor Lyft went with 7389. (Note to researchers: good luck trying to use revenues or -- God forbid -- profits to figure out industry concentration for “Prepackaged software.”)

It should be clear that our traditional methods of classifying companies into industries has not kept up. And if industry boundaries are relatively arbitrary, then how should we think about industry concentration and monopoly power?

**Markets, industries, competition**

Commonly used terms can take on specialized definitions, and so it is in the world of markets, industries, and monopoly. A *product market* is a set of products that buyers regard as substitutes for each other. For the right price, buyers are willing to switch from one offering to another.

*Market definition* -- identifying products that are substitutable -- is essential to understanding competition and monopoly power. Unsurprisingly, market definition is contentious. A company being sued for antitrust violations might want to define its market as broadly as possible (“We’re in the nutrition industry,” or “We help people get from one place to another”), while its opponents might go for a more fine-grained definition (“The market for fiber-optic broadband in Duluth, Minnesota” or “The market for lemonade on the 700 block of Maple Street”). Louis Kaplow of Harvard Law School describes market definition as “impossible and counterproductive.” It’s tricky in markets for homogeneous goods with a national scope (perhaps sugar, lead, or copper) and impossible for others. Of course, not everyone agrees with Professor Kaplow, and there is a large literature and a lucrative side-hustle for economists in market definition.79

We do not need to resolve any controversies about market definition -- that’s what antitrust lawyers and IO economists are for. But even *industry definition* is complicated, leaving aside issues of the relevant geography and questions of substitutability.

*Industries* are groups of companies that produce the same goods or services, or produce things in the same way. There is already an ambiguity here: in the first definition, industry is in the eyes of the consumer, based on the products that companies sell. But the widely-used Standard Industrial Classification system, last updated in 1987, and the more recent North American Industry Classification system are based on the products that companies sell. The classification system is not perfect, and companies can manipulate it to their advantage. For example, Palantir classified itself as “Consulting Services” in 2018, while Bentley Systems classified itself as “Engineering Services” in 2020. C3.ai and Snowflake classified themselves as “Software” in 2018 and 2019, respectively.

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79 See Kaplow (2013) and Werden (2014).
System (NAICS) both classify establishments based on their production processes, not their outputs. In the first case, industry is about what; in the second, it is about how.

If you visit many workplaces today you will see rooms full of people staring at screens and typing on keyboards, occasionally talking on the phone, with breaks now and then to head to conference rooms to talk to other people. (This seems to describe most of what happens at a university, for instance.) Based on their “production process,” they may indeed be in the same industry. But the production process may not tell us that much about the business model -- how the company makes money -- which would seem essential for understanding its industry.

Consider the industries represented in the 1912 Dow Jones index: sugar, rubber, leather, lead, copper, steel. Each of these industries had existed for generations, and they still exist today. It is easy enough to visualize what the products are, to calculate market shares, and to conceive how a single producer or a cartel might come to dominate the American steel or sugar market. The business model in these industries was not especially complicated, nor were potential competitive strategies for industry participants. You could implement cost-saving technologies through mass production and mass distribution. If there were economies of scale, that meant that bigger firms could offer lower prices and would come to dominate the industry. Or you might use sleazier tactics of the sort contemplated by the Sherman and Clayton Acts: forming cartels to fix prices, buying key suppliers to cut out competitors, tying sales to purchases of other products you produced.

But business models evolved substantially after the Clayton Act, as industry became more differentiated. Sugar companies earned their revenues directly, by selling sugar. Broadcast networks, on the other hand, made money by selling advertising. Their business model entails attracting attention with their visible product (programming) and selling that attention to advertisers. The business models of Facebook and Google Search descend from this approach.

Many tech companies today have business models that are utterly inscrutable as a byproduct of software eating the world. This can make it difficult to assign them to a fixed industry category, based on either product or process. Uber clearly creates competition for taxi companies, but it claims it is a digital marketplace company, not a transportation company -- so much so that it professes to consider drivers incidental to its business operations. After California’s legislature passed a bill aimed at classifying some gig workers as employees, Uber’s chief legal counsel stated: “Several previous rulings have found that drivers’ work is outside the usual course of Uber’s business, which is serving as a technology platform for several different types of digital marketplaces.” This did not prevent Uber from contributing tens of millions of dollars to support California’s Proposition 22, definitively classifying Uber drivers as contractors. It is almost as if Rene Magritte were drawing the industry boundaries: “This is not a transportation company.”

Facebook and Google say they are not media companies, even as much of the population accesses media through their platforms -- nor are they advertising companies, even though nearly all their

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80 “NAICS will be erected on a production-oriented, or supply-based, conceptual framework. This means that producing units that use identical or similar production processes will be grouped together in NAICS.”
https://www.naics.com/history-naics-code/

revenues come from advertising. Google listed “Information Retrieval Systems” in its IPO prospectus; Facebook asserted it was in “Computer and Data Processing Systems.” And Snapchat claims in its prospectus to be a camera company -- an industry in which they surely have a dominant market share, since Snap’s 2020 revenues were double the total sales of digital cameras in the US.82 Meanwhile, the trading platform Robinhood, which gained infamy as the cradle of meme-stock bubbles in early 2021, makes money not through charging its retail “customers” fees for executing trades (a service it offers for free) but by “payment for order flow” -- fees paid by market-makers for routing trades to them. In a sense, it is the Facebook of finance. (For the purpose of its IPO, Robinhood defaulted to 7372, “Prepackaged software.”83)

Categorizing companies into industries based on process helps explain why enterprises selling very different services to very different customers can end up being lumped into the same industry. After all, much of their process involves people staring at screens and typing on keyboards.

Industry categories based on process may not be very informative after software has eaten the world. How about categories based on products? Recent advances in computational methods have allowed some intriguing innovations here. Public corporations in the US are required to give accurate and up-to-date descriptions of the major products they offer in annual reports filed with the SEC. In an ingenious approach, Hoberg and Phillips (2016) use the nouns in the “Description of business” section of these reports to track the extent to which companies overlap in how they describe their products, reasoning that the more words they have in common, the closer competitors they are. (It is slightly more complex than that, but let’s forego a discussion of cosine similarity for now.) Using this approach, all pairs of firms can be mapped relative to each other, with industries defined by “neighborhoods” of companies with greater overlap. As companies change the description of their product mix over time, they can move around on the map so that the boundaries of industries can shift like cloud formations. These are “textual network industry classifications” (TNICs). TNICs yield a quite different industry mapping than the SIC or NAICS, which should give us real pause when it comes to claims about industries inevitably becoming more concentrated -- especially since one of the most common tactics used by firms with close competitors in their neighborhood is to differentiate their products from those of their competitors and head toward a different neighborhood.

This approach, based on products and not process, comes much closer to capturing what critics have in mind when they refer to concentrated industries. Put another way, it illuminates just how little we understand trends in industry concentration, since the “industry” construct is so malleable and changes so much over time.

**Antitrust and the technology meta-industry**

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83 [https://www.sec.gov/Archives/edgar/data/1783879/000162828021013318/robinhoods-1.htm](https://www.sec.gov/Archives/edgar/data/1783879/000162828021013318/robinhoods-1.htm)
The Congressional subcommittee report on antitrust in 2020 sought to avoid pedantic discussions of industry by essentially creating their own system for describing the new technology firms. The 10 major product markets identified include:

- Online search (“Online search engines enable users to retrieve webpages and information stored on the Internet”)
- Online commerce (“Online commerce, also known as e-commerce, is the activity of buying or selling products or services using the Internet”)
- Social networks and social media (“Social media products and services include social networking, messaging, and media platforms designed to engage people by facilitating sharing, creating, and communicating content and information online”)
- Mobile app stores (“Mobile application stores (app stores) are digital stores that enable software developers to distribute software applications (apps) to mobile device users”)
- Mobile operating systems (“A mobile operating system (OS) provides a mobile device with its underlying functionality, such as user interface, motion commands, button controls, and facilitates the operation of the device’s features, such as the microphone, camera, and GPS”)
- Digital mapping (“Digital mapping provides users with virtual maps of the physical world”)
- Cloud computing (“Cloud computing refers to the service that enables remote storage and software programs on Internet.” Segments include software as a service; platform as a service; and infrastructure as a service.)
- Voice assistant (“Voice assistants act as a user interface that enables exchanges between computing devices through a person’s voice”)
- Web browsers (“A web browser is software that retrieves and displays from the Internet”)
- Digital advertising (“There are two principal form of digital advertising: search advertising and display advertising. Search advertising refers to digital ads on desktop or mobile search engines, such as the Google.com homepage, displayed via ‘search ad tech’ alongside search engine result... Display advertising refers to the delivery of digital ad content to ad space on websites and mobile apps, which is referred to as ‘inventory.’”)

Some of these products are old (commercial web browsers date back to the launch of Netscape in 1994); others are far more recent (e.g., voice assistants). All are domains in which companies compete aggressively. Whether they count as “industries” or “markets” is another matter.

The subcommittee report is structured around an analysis of the brutal competitive tactics used by four tech companies: Facebook, Google/Alphabet, Amazon, and Apple. Each is regarded as a monopolist in one or two domains: Facebook for social networking, Google for online search and search advertising, Amazon for online retail, and Apple for mobile operating systems. But what is notable is that all of them operate (or have operated) in many of these categories at once. Facebook competes in social networking/social media and advertising. Apple has a mobile operating system, an app store, a voice assistant, digital mapping, and a web browser. Google has maps, search, operating systems, an app store, a web browser, voice assistant, cloud computing, and advertising. Amazon has online retail, cloud computing, voice assistant, and advertising. All of them enter and sometimes exit new markets on an

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almost daily basis -- it’s fair to assume that all will offer products in the augmented reality/virtual reality market in the not-too-distant future, as they also offer wearable health monitors.

They are all, in short, digital conglomerates, a kind of business that defies industry categorization. In some sense we are back to the future, circa 1980. And to the extent that Big Tech corporations do not fit industry categories, they may require a different way to think about their power. We return to this theme below.

**Big Business vs. Big Tech**

Big Tech companies such as Alphabet and Amazon use their expertise in information and communication technologies to make money. They are indifferent to industry boundaries; they look for opportunities to apply ICTs in new ways that yield profits. Because our lives have become thoroughly intermediated by ICTs over the past generation, the opportunities for tech companies are seemingly unlimited, and the dangers created by Big Tech are without precedent. They are not analogous to the railroads, or oil, or electricity, or the telephone, or radio, or a superhighway, because ICTs have become inescapable in human interaction: markets, dating, democracy, work, conversation, protests, cooking, parenting, auto repair, medicine. Whatever you are doing, your smartphone is most likely involved.

Big Tech is qualitatively different from other kinds of big business and requires different tools to tame it. Consider how Big Tech and Big Business responded to the January 6 incursion into the US Capitol by seditionists seeking to overturn the presidential election. Big Business responded by shutting off their cash spigot. Shortly after January 6, corporations such as Marriott, American Express, Dow, Goldman Sachs, AT&T, Best Buy, and Mastercard announced that they were halting political contributions to senators and representatives who voted against certifying the 2020 presidential election -- at least for the moment. (The next election was almost two years off.) In contrast, Facebook and Twitter immediately suspended Trump’s social media accounts, depriving him of his megaphone. Apple and Google quickly removed Parler, the social media platform used by some of the seditionists, from their app stores. And Amazon cut off Parler’s access to Amazon Web Services, where it had been hosted, thus deleting it from the world. Big Business cut off political funding -- at best a symbolic gesture. Big Tech pulled the rug out from under Trump and his followers, halting them in their tracks and easing the transition to a new administration.85

Even the “bigness” of Big Tech is different. While relatively few people are employed by Google or Facebook -- and fewer still by Netflix or Twitter -- they have an outsized influence on our culture and economy. As of July 2021, the market capitalization of Alphabet, Amazon, Apple, Facebook, and Microsoft (that is, the total value of their shares on the stock market) made up over one-third of the value of the S&P 500.86 Just five corporations carried an astonishing weight, indirectly shaping critical choices around college, retirement, and major purchases. We turn to the meaning of corporate size next.

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What is size now?

What is America’s biggest corporation? The answer depends on what you mean by big. The biggest employer in America is Walmart, with 2.3 million workers. The biggest in market capitalization is Apple, valued at just over $2 trillion (but only #44 in terms of employment). The non-financial corporation with the most assets is AT&T, at $526 billion (#27 in employment, #28 in market cap). And the biggest in sales is again Walmart.

We often refer to “giant corporations” in a fairly casual way. We all know what we’re talking about, right? But size is an increasingly misleading metaphor to describe corporations. For most of the 20th century, big corporations were big in all ways. Today the different meanings of size have become detached, so a company can be giant in revenues or market cap but tiny in assets and employment. It may be time to abandon size as our metaphor for business.

Who’s the biggest?

The table below lists the 10 biggest US corporations in employment, market capitalization, and sales as of May 2021, along with the total annual compensation of their median employee.\textsuperscript{87}

Table 4: America’s ten largest corporations by employment, 2021\textsuperscript{88}

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenues</th>
<th>Employees</th>
<th>Market_cap</th>
<th>Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALMART INC.</td>
<td>559,151,000</td>
<td>2,300,000</td>
<td>397,486</td>
<td>20,942</td>
</tr>
<tr>
<td>AMAZON.COM, INC.</td>
<td>386,064,000</td>
<td>1,298,000</td>
<td>1,634,168</td>
<td>29,007</td>
</tr>
<tr>
<td>UNITED PARCEL SERVICE INC</td>
<td>84,628,000</td>
<td>543,000</td>
<td>120,442</td>
<td>44,254</td>
</tr>
<tr>
<td>HOME DEPOT INC</td>
<td>132,110,000</td>
<td>504,800</td>
<td>291,565</td>
<td>27,389</td>
</tr>
<tr>
<td>KROGER CO</td>
<td>132,498,000</td>
<td>465,000</td>
<td>26,266</td>
<td>24,617</td>
</tr>
<tr>
<td>TARGET CORP</td>
<td>93,561,000</td>
<td>409,000</td>
<td>90,725</td>
<td>24,535</td>
</tr>
<tr>
<td>INTL BUSINESS MACHINES</td>
<td>73,620,000</td>
<td>375,300</td>
<td>112,166</td>
<td>49,001</td>
</tr>
<tr>
<td>BERKSHIRE HATHAWAY INC.</td>
<td>65,841,000</td>
<td>360,000</td>
<td>317,883</td>
<td>68,543</td>
</tr>
<tr>
<td>STARBUCKS CORP</td>
<td>23,518,000</td>
<td>349,000</td>
<td>100,440</td>
<td>12,113</td>
</tr>
<tr>
<td>LOWE’S COMPANIES, INC.</td>
<td>89,597,000</td>
<td>340,000</td>
<td>122,255</td>
<td>24,554</td>
</tr>
</tbody>
</table>

Table 5: America’s ten largest corporations by market capitalization, 2021

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenues</th>
<th>Employees</th>
<th>Market_cap</th>
<th>Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLE INC.</td>
<td>274,515,000</td>
<td>147,000</td>
<td>2,007,837</td>
<td>57,783</td>
</tr>
<tr>
<td>AMAZON.COM, INC.</td>
<td>386,064,000</td>
<td>1,298,000</td>
<td>1,634,168</td>
<td>29,007</td>
</tr>
<tr>
<td>MICROSOFT CORPORATION</td>
<td>143,015,000</td>
<td>183,000</td>
<td>1,543,306</td>
<td>172,142</td>
</tr>
<tr>
<td>TESLA, INC.</td>
<td>31,536,000</td>
<td>70,757</td>
<td>668,905</td>
<td>58,455</td>
</tr>
<tr>
<td>FACEBOOK, INC.</td>
<td>85,965,000</td>
<td>58,604</td>
<td>656,668</td>
<td>262,633</td>
</tr>
<tr>
<td>ALPHABET INC.</td>
<td>182,527,000</td>
<td>135,301</td>
<td>526,920</td>
<td>273,493</td>
</tr>
<tr>
<td>JOHNSON &amp; JOHNSON</td>
<td>82,584,000</td>
<td>134,500</td>
<td>414,310</td>
<td>81,000</td>
</tr>
</tbody>
</table>

\textsuperscript{87} The data in these tables come from Orbis, downloaded May 2021.

\textsuperscript{88} This list excludes Yum China Holdings, whose 400,000 employees work almost exclusively in China.
For Peer Review

WALMART INC.  559,151,000  2,300,000  397,486  20,942
JPMORGAN CHASE & CO  119,995,000  249,184  387,335  80,102
MASTERCARD  14,980,000  21,000  352,825  132,114

Table 6: America’s ten largest corporations by revenues, 2021

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenues</th>
<th>Employees</th>
<th>Market_cap</th>
<th>Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALMART INC.</td>
<td>559,151,000</td>
<td>2,300,000</td>
<td>397,486</td>
<td>20,942</td>
</tr>
<tr>
<td>AMAZON.COM, INC.</td>
<td>386,064,000</td>
<td>1,298,000</td>
<td>1,634,168</td>
<td>29,007</td>
</tr>
<tr>
<td>APPLE INC.</td>
<td>274,515,000</td>
<td>147,000</td>
<td>2,007,837</td>
<td>57,783</td>
</tr>
<tr>
<td>CVS HEALTH CORPORATION</td>
<td>268,706,000</td>
<td>300,000</td>
<td>89,399</td>
<td>55,716</td>
</tr>
<tr>
<td>MCKESSON CORPORATION</td>
<td>238,228,000</td>
<td>76,000</td>
<td>31,044</td>
<td>40,601</td>
</tr>
<tr>
<td>AMERISOURCEBERGEN CORP</td>
<td>189,893,926</td>
<td>22,000</td>
<td>19,785</td>
<td>59,388</td>
</tr>
<tr>
<td>ALPHABET INC.</td>
<td>182,527,000</td>
<td>135,301</td>
<td>526,920</td>
<td>273,493</td>
</tr>
<tr>
<td>EXXON MOBIL CORP</td>
<td>178,574,000</td>
<td>72,000</td>
<td>174,288</td>
<td>183,234</td>
</tr>
<tr>
<td>AT&amp;T INC.</td>
<td>171,760,000</td>
<td>230,000</td>
<td>204,944</td>
<td>89,399</td>
</tr>
<tr>
<td>COSTCO WHOLESALE CORP</td>
<td>166,761,000</td>
<td>273,000</td>
<td>153,500</td>
<td>39,585</td>
</tr>
</tbody>
</table>

You will notice some clear patterns. America’s biggest employers are in retail, where wages are very low. Its most valuable companies are in technology -- and technology companies often employ few people, albeit at high wages. (Alphabet’s median employee brought home twice as much cash as the median employee at Goldman Sachs.) And some of the corporations with the biggest revenues are anonymous middlemen like AmerisourceBergen.

Not every company fits this description. Amazon and Walmart are mammoth on all dimensions -- employment, revenues, and market cap -- but they are distinctive in this respect. The other tech “giants” are mostly giant in market cap alone.

Contrast this with the biggest corporations in 1980. For the first four decades after World War II, the biggest businesses were biggest in all ways: sales, employment, assets, and market cap. When Fortune magazine began its Fortune 500 list in 1955, GM was at the top in all dimensions and represented the prototype of the large American corporation, held to account by an assertive union. The biggest companies provided high wages, generous benefits, and career employment with well-defined job ladders. There was a systematic “large firm wage premium” in which big employers paid better for the same jobs compared to small firms. The best-paying jobs, and the longest career ladders, were in the biggest corporations.

Table 7: America’s ten largest corporations by employment, 1980

<table>
<thead>
<tr>
<th>Company</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;T CORP</td>
<td>847,768</td>
</tr>
<tr>
<td>GENERAL MOTORS CO</td>
<td>746,000</td>
</tr>
<tr>
<td>FORD MOTOR CO</td>
<td>426,735</td>
</tr>
<tr>
<td>GENERAL ELECTRIC CO</td>
<td>402,000</td>
</tr>
<tr>
<td>SEARS ROEBUCK &amp; CO</td>
<td>391,200</td>
</tr>
</tbody>
</table>

89 See Cobb and Lin (2017) and Bloom et al. (2018) on the disappearing large firm wage premium.
Today the biggest employers are among the lowest paying, and the job ladders in retail are more like stepstools. The highest-paying corporations tend to be light in the number of jobs they offer, and they often rely heavily on contractors rather than full-time employees. As I noted previously, Alphabet relies primarily on temps, vendors, and contractors rather than full-time employees. Tech firms are especially rigorous about maintaining minimalist employment rolls. The “Prepackaged Software” companies that recently have gone public typically employ very few people: Airbnb (5465), Coursera (779), Olo (433), Asana (701), Palantir (2398), Bentley (4010), C2.ai (482), and Snowflake (2037) collectively employed fewer people than Under Armour, America’s 400th-biggest corporation.

This aversion to creating jobs is a distinctly American phenomenon that dates to choices made in the wake of WWII. America’s peculiar system of welfare provision, in which health insurance is provided by employers rather than the government, helps explain the hesitancy around employment. The average annual cost to an employer to provide health insurance to a head of household is over $20,000. That’s a benefit that would nearly double the employment cost of the average worker at Walmart or Target or Home Depot, and certainly gives pause to any company considering hiring full-time workers. To put it plainly, America’s lack of a national healthcare system is a job killer.

Big, or loud?

Corporate size is often equated with power: big corporations can throw their weight around, and some are deemed too big to fail. But which aspect of bigness is it that provides power? Home Depot, Kroger, and Target are three of America’s biggest employers, but are rarely singled out for their political swagger. Drug distributors McKesson and AmerisourceBergen have vast revenues, but this has not shielded them from prosecution for their alleged roles in the opioid epidemic. And even the concept of being “too big to fail,” emerging from the 2008 financial crisis, seems a bit too glib, given how many financial giants were, in fact, allowed to fail (or be acquired under duress): Lehman Brothers, Bear Sterns, Merrill Lynch, Wachovia, Washington Mutual, Countrywide, New Century, and many other financial giants evaporated within a brief period around 2008.

Compare these hapless giants with a company that became an inescapable daily companion for hundreds of millions of workers and students during the pandemic: Zoom Video Communications. During 2020 and 2021, like many of you, I averaged at least 10 hours per week on Zoom in meetings, classes, webinars, virtual cocktails hours, and impromptu catchups. (I doubt if I spent 10 hours total speaking on the phone during the lockdown.) At the beginning of 2020, relatively few people had even heard of Zoom. One year later, it was the oxygen of the work-from-home economy, scaling from anonymity to ubiquity in a few months, and adding useful features on a weekly basis. Yet its annual report from March 2021 notes that it has just 4422 employees globally and rents server space from

Amazon and Oracle.\footnote{https://www.sec.gov/ix?doc=/Archives/edgar/data/0001585521/000158552121000048/zm-20210131.htm} Put another way, by one crucial measure Home Depot is more than \textit{100 times bigger} than Zoom.

Minimal assets, few employees, and a market cap of over $100 billion: in some sense, Zoom is a prototype of the 21st century “big” tech company. Zoom’s tiny tangible footprint suggests that size is not a helpful metaphor anymore. Potent tech firms are not big -- they are loud.\footnote{https://iby.imd.org/magazine/big-or-loud-we-need-new-ways-to-define-where-the-power-lies/} Yet Zoom is also a mystery: why has it not been crushed by evil monopolists yet? Why are we not all using Apple’s FaceTime, Google Hangouts, Facebook Messenger, Microsoft Teams, Amazon...whatever? Why has a (far superior, continuously upgraded) product from out of nowhere managed to best the biggest stars of the tech firmament? And if Zoom can do it, can anyone else?
Every man an LLC? The hollow promise of entrepreneurship for all

It is often said that anyone with a credit card and a web connection can assemble a business today from parts available online -- capital, labor, supplies, and distribution. I opened with the example of the Instant Pot, a computerized pressure cooker launched by a tiny team in Ontario that reached a large global market via Amazon. But there are countless examples of such online-first enterprises that assemble digital supply chains through an entirely remote process.

We could have started with eyglassdepot.com, an unsavory vendor of designer sunglasses. The one-man company doesn’t hold any inventory, but simply collects orders online and passes them off to other (often counterfeit) sellers for fulfillment -- and handles customer complaints himself in a distinctive New York style.93 Or we could have gone to Amazon to see dozens of cryptic brands for clothing, toys, electronic products, and more.94

The barriers to entry for starting an enterprise online have never been lower. It also seems that many of the most successful ideas were hatched by kids in a dorm room after a few too many bong hits. “What if you could push a button on your phone and some guy would just show up in his car and take you where you want to go, and it would charge your credit card?” (That would be Uber.) “What if you could order a burrito on your phone and it would appear at your door?” (That would be DoorDash.) “What if you could get a vape pen, rolling papers, Ben & Jerry’s, and some beer to show up when you ran out?” (That would be GoPuff, currently valued at $9 billion.)

It’s not just stoner business models that have become easy to execute. If you have a beer recipe, you can find a vendor to brew it, bottle it, and paste on your label. Your grandma’s tomato sauce recipe could be produced by LiDestri of Rochester, New York -- like Newman’s Own and dozens of store brands. It is trivially easy to start a record label, YouTube channel, clothing line, or flat screen television brand. With the rise of commissary “ghost kitchens” (e.g., Uber founder Travis Kalanick’s new venture, CloudKitchens), anyone with a book of recipes can start a virtual delivery restaurant online. Robinhood demonstrates that you don’t need much background in finance to start a fintech business. Fisker shows that you don’t need to build a factory to start a car company. (And with the advent of electric car chassis makers, we may see a flood of new auto brands in the coming years, presumably sold on Amazon.95)

Monopoly is not always a barrier to entry. Until recently, the Federal Reserve seemed to have a monopoly on issuing currency in the US...but these days a new meme-based cryptocurrency seems to pop up weekly.

If anyone can start a business with modest startup costs, then why are there so few new businesses? The Kauffman Foundation tracks “startup density,” the proportion of businesses with at least one employee that are less than a year old. They find that today’s startup rates are half what they were in the late 1970s, when Jimmy Carter was president. “[W]hen compared to the levels in the 1980s, 1990s,

93 https://www.nytimes.com/2021/05/02/business/has-online-retails-biggest-bully-returned.html
95 https://www.fastcompany.com/90562654/car-design-is-about-to-change-forever-this-video-encapsulates-how
and early 2000s, Startup Density is in a long-term decline.” Or perhaps we are just measuring it wrong. Judging by applications for Employer Identification Numbers, Census Bureau data suggest that 2020 was a boom year for startups, increasing by 24% over the previous year (even as the failure rate of existing businesses also skyrocketed). Perhaps we are surrounded by startups that we have failed to notice. If I offer haircuts in my garage, or sell self-defense equipment out of my trunk, or write iOS apps on the weekend, or drive for Uber in the evenings, does that count as starting a company? If I change how I report book royalties on my income taxes, does that count as a new business? (According to the IRS: yes.) If I work as a contractor in construction and create an LLC to receive my compensation (as some general contractors require), am I now a firm?

As we have learned, many of the categories we use to understand the economy -- nationality, industry, size -- often fail us in a digital world.

Much of what we know about American business comes from Census Bureau data collected on “establishments.” According to the Bureau’s definition, “A firm is a business organization consisting of one or more establishments under common ownership or control. An establishment is a single physical location where business is conducted or where services or industrial operations are performed.” See the problem? If Coinbase chooses to operate with no physical facilities but just remote employees or contractors, is it not a firm?

If you wanted to assemble information on how many professional basketball games were played in the United States in March 2021 and what the outcomes were, you can do so with a quick internet search. If you’re obsessive, you can get data on every player in every game and second-by-second changes in the score. Now imagine collecting similar data on all pickup basketball games played in the US during the same time period. We know they are happening, but we have no way to measure it systematically. So it is with our ICT-mediated economy. This is especially true when it comes to “entrepreneurship,” a slippery concept with no clear definition but great potential value in pacifying the population as our economy becomes ever more atomized.

Entrepreneurship as an American ideology

No country in history has idolized business leaders the way America does. From Thomas Edison and Henry Ford to Jack Welch and Steve Jobs, the administrators who run our commercial enterprises are weirdly venerated. Fans follow Elon Musk’s every utterance about the latest crypto fad, titter at his pricing strategies ($69,420 for the Model S? Hilarious!), and zealously defend his honor as the founder of Tesla. (To be clear: Elon Musk is not the founder of Tesla -- he joined later as an investor.)

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99 What is a “firm,” anyway? According to the Core project’s book on “The Economy” ([https://www.core-econ.org/the-economy/book/text/06.html](https://www.core-econ.org/the-economy/book/text/06.html)), a firm is an “Economic organization in which private owners of capital goods hire and direct labour to produce goods and services for sale on markets to make a profit.” Does it matter if the capital goods are rented, or labor is provided by self-employed contractors responding to suggestions from an app?
There is perhaps nothing more American than wanting to be your own boss. Thomas Jefferson envisioned a nation of self-sufficient yeoman farmers controlling their own destiny on land that had only recently belonged to America’s indigenous peoples. This vision of the small farmer morphed into the small businessman and Main Street shopkeeper. The recent spate of books on the horrors of monopoly describe a lost golden era of local enterprise when the Sherman Act and baroque banking laws protected small towns from urban cosmopolitans back East. Look, there’s young Louis Brandeis strolling the idyllic streets of his native Louisville, Kentucky, chatting up the local petit bourgeoisie and enjoying a time evidently free of anti-semitism.

This enchanted world was threatened by the corporatization of the economy early in the 20th century. Working for someone else in a giant factory or a chain store would rob men of their vitality. Luckily we had antitrust to protect us from the accursed efficiencies of large-scale enterprise, allowing us to remain a nation of shopkeepers.

In America, entrepreneurship is not just a neutral description of certain forms of commercial activity -- it is a noble ideal of self-sufficiency and civic engagement, worthy of protection and nurturance. In that sense it is a useful tool for easing painful economic transitions. If you can convince an Uber driver that they are not an underpaid member of the lumpen proletariat but a self-employed entrepreneur, the rightful heir to Jefferson’s yeoman farmer, then you will certainly ease our coming walk through the fire swamp of large-scale labor dislocation. (Uber’s ad campaigns to recruit drivers bears this out.)

The problem with the ideology of entrepreneurship is that, like so much else, its stylized facts are simply wrong. Moreover, as we move toward an increasingly atomized online economy of all markets all the time, the ideology of entrepreneurship is likely to serve as a kind of palliative care for a more solidaristic economy.

**Startups and job creation**

Entrepreneurs are often hailed as job creators. According to the folklore, small businesses -- or possibly young businesses -- are the source of economic dynamism and job creation. When new enterprises create new products that succeed in the marketplace, they raise capital, invest in new plant and equipment, and -- crucially -- hire people to meet their new demand.

As you might expect by now, this narrative does not hold up well in the 21st century, when businesses can quickly scale up by renting supply, distribution, and labor. My analysis of every US business that did an IPO from 2001 to 2015 showed that very few firms subsequently created jobs at any scale. The median company “created” just 51 jobs after going public, and often the new jobs were just a reallocation of old jobs via acquisition. The company with the best record at creating genuinely new jobs was GameStop, the strip mall video game retailer whose average non-managerial employee earned just $8 per hour.

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100 See Eberhart, Barley, and Nelson (2021) for an acute dissection of the ideology of entrepreneurship.
101 See Dubal (2017) for a thoughtful analysis of our evolving employment categories and the functions they serve. Schor (2020) provides a detailed discussion of the gig economy.
102 See Decker et al. (2014) for an overview of startups, job creation, and the apparent decline in entrepreneurship in the 21st century American economy.
103 [https://www.brookings.edu/research/capital-markets-and-job-creation-in-the-21st-century/]
Even the most successful corporations limit their job growth to the extent possible. I have noted Alphabet’s primary reliance on a contingent workforce that is offered no path to permanent employment. This pattern is repeated across the high-wage tech sector, where permanent full-time employment is relatively scarce.

Moreover, technology is creating an increasingly job-lite workplace. A new gastropub in my hometown of Detroit presents patrons with a QR code on their table. When scanned with a smartphone, customers can view the menu, place their order, and pay via credit card, their conversation only briefly interrupted by an anonymous foodrunner dropping off their food and drink. Two kitchen staff and one foodrunner are sufficient for the entire establishment. 18 months into the pandemic, most sit-down restaurants in the US have added a QR code option to view the menu, or shifted entirely to the server-free model, which is estimated to cut 30-50% off labor costs. And the remaining staff may not even be employees: apps like Pared allow restaurants to recruit labor by the shift. Given the interoperability of most kitchen roles, it is not crazy to think that the kitchen staff might work at a different venue every night, with prevailing wages shifting according to market conditions.

**Competition and innovation**

A frequent refrain of the antimonopolists is that competition encourages innovation. Enabling competition via entrepreneurship makes for a healthier economy. Two shoe stores on Main Street make each other better, providing lower prices, friendlier service, better selection, more lush carpeting...far better than what a single shoe store (or perhaps Zappo’s) might offer.

Shareholder value capitalism indeed produces a lot of innovation: Juicero, Juul, Oxycontin, WeWork, Mugshots.com, for-profit toddler prisons, valet parking apps, ranch-flavored fentanyl, Farmville, Baby Shark, Ashley Madison, Parler. Americans benefit from a rich harvest of entrepreneurship. But sometimes we don’t need any more innovation. And sometimes competition is not the best path to get the innovation we need.

Clearly, competition works in some contexts. In the market for sugar, or lead, or cars, or military procurement, buyers benefit from robust competition to keep prices down and to incentivize new ways of doing things. But not all markets benefit from adding new competitors. We do not need more opioids, more hyperprocessed foods, more vape pods, more handguns, more petroleum pulled from the earth, more addictive social media, or more for-profit prisons. More is not always better, and broad policies to encourage more entrepreneurship can easily yield more businesses that make us worse off.

Moreover, for some products, monopoly plus collaboration makes the product better. The operating system Linux is arguably a monopoly, but it is given away for free and gets better with each release, improved through volunteer labor. Wikipedia also monopolizes the encyclopedia industry, and it is perhaps the greatest single compilation of human knowledge in history -- also free. The coding language Python is not exactly a monopolist, but it gets more useful over time through user-written routines that are shared freely online. And the Instant Pot, although not free itself, benefits from a vast community of enthusiasts who have posted tens of thousands of recipes online, along with countless YouTube videos.

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to walk newbies through them. There are Instant Pot competitors but...why bother? It is durable and
cheap, and the recipes are customized to its specific configuration of controls. (These are perhaps also
the reasons why Amazon has not created an Instant Pot knockoff yet.)

In short, competition has its place, but it is hardly the only way to promote desirable innovation.

**Sharecropping 2.0**

The publisher of *Wired* penned a story in 2018 that contained a soon-to-be immortal line describing the
relation between Facebook and traditional media: “Every publisher knows that, at best, they are
sharecroppers on Facebook’s massive industrial farm.”\(^{107}\) He was not wrong -- quite the contrary. Many
media consumers only come to know of an article or video or song because it has been shared on social
media -- and Facebook controls the platforms and the visibility.

In some sense, sharecropping is an apt description of many business ecosystems today, from meat
production to ridehailing. A platform of one sort or another serves as a gatekeeper standing between
customers on one side and “entrepreneurs” on the other. But the power that this conveys to the
gatekeeper differs by context. Understanding this helps interpret some of the peculiar dynamics as our
economy is reorganized.

Uber and Lyft are very clear that the millions of drivers whose cars bear their logo are not employees
but independent contractors. Like the chicken farmers who grow broilers on behalf of Tyson, Uber
drivers are self-employed entrepreneurs who control their own hours and work conditions and access to
health insurance (but not the price at which their service is sold). Their relation to the platform that
connects them to customers is as a sovereign, not an employee, and there is no chance that they will
wind up being incorporated into the platform.

Amazon and its Marketplace “partners” present a similar situation. Amazon is very good at getting
products into the homes of consumers -- it is a one-stop shop for distribution for its millions of vendors,
each of whom is an independent entrepreneur. Like Uber drivers and TVCs at Alphabet, Marketplace
vendors face almost no danger of being acquired by the mothership (but in some cases a real danger of
their product being “emulated”).

The situation is different for Big Tech conglomerates and tech startups. Big Tech companies are
acquisitive -- since 2000 they have made hundreds of acquisitions, and Tim Cook was quoted as saying
Apple bought a new company every two to three weeks.\(^ {108}\) This is sometimes taken as evidence of
monopoly power and industry consolidation in action. But that would be to misunderstand the nature of
tech entrepreneurship. Most tech startups are created with the intention of being acquired by big tech
corporations -- this is their preferred “exit strategy” from the start. (They can also exit by going public,
but getting acquired is a surer bet.)\(^ {109}\) Killer acquisitions exist, of course, but far more common is a
happy ending for founders and stockholding employees who have achieved their dream, cashed out,
and can move on to the next venture. What is being acquired here is intellectual property and,
sometimes, talent.


\(^{108}\) Subcommittee Report, p. 337.

\(^{109}\) See Arora et al. (2021).
A similar model holds for Big Pharma and biotech. Big Pharma companies like Pfizer and Merck are very good at running drug tests, managing the FDA approval process, and marketing medicines to physicians. In recent times they have been somewhat less good at new drug discovery, for some complicated reasons. Meanwhile, in any given year, a large proportion of IPOs consist of biotech companies who are developing new drugs and other therapies. Many or most will fail; some will come up with breakthroughs. Much like their Little Tech brethren, their dream is not to grow into Big Pharma conglomerates, but to be bought out at a large premium. Being acquired is not a bug; it’s a feature for those who develop valuable intellectual property. Acquisition by a massive tech or pharma corporation often provides the surest path to funding and scale and distribution that would otherwise be inaccessible, without the cost of building pointlessly redundant capacity.

For both Big Tech and Big Pharma, the existence of acquisitive platforms like Google and Pfizer does not dampen entrepreneurship -- it promotes it by creating a lucrative exit for entrepreneurs, who act as a kind of external R&D department.

ICTs are enabling the “platformization” of more and more markets -- creating opportunities for gatekeepers that stand between customers and entrepreneurs. If customers access markets through the Web, then those who control what is seen on the Web can shape the market. Call it Sharecropping 2.0.

Restaurants are one of the most basic forms of entrepreneurship. There were fast food kiosks in Pompeii. Nearly every town has at least one restaurant. Immigrant entrepreneurs often start out by opening a restaurant. But DoorDash and its ilk increasingly are inserting themselves between restaurants and customers. Online orders often end up routed through the site of a delivery platform, unbidden by the restaurant itself. DoorDash takes a hefty cut, some slice of which goes to its (non-employee) drivers. Sometimes this “service” is hard to escape. I recently ordered food to pick up from a restaurant two blocks from my house. Despite my efforts, the order was routed through DoorDash, which made an unwanted substitution that I discovered when I got home.\(^{110}\) When I returned to the restaurant on foot five minutes later, I was told “We can’t help you. Call DoorDash--they handle the orders.”

On the internet nobody knows you are a ghost kitchen, and Covid has hastened the creation of virtual delivery restaurants. Chuck E. Cheese outlets across the country began marketing Pasqually’s Pizza & Wings for delivery as a more palatable facade for unwary consumers, and other restaurants began employing their kitchens to create takeout food for their nominal competitors. The natural evolution of this trend is toward commissary kitchens, cuisine-agnostic facilities built for virtual delivery restaurants. Disused buildings or parking lots with ready access for delivery vehicles are ideal -- unlike real-world restaurants, there is no need for walkability or ambience. A given commissary kitchen could in principle cook for dozens of online-only restaurants, just as Foxconn manufactures products for Apple, Amazon, Xiaomi, and Sony. Think of it as Nikefication for food, where menu design is fully separated from production (e.g., CloudKitchens) and distribution (e.g., DoorDash).

In the not-too-distant future we are likely to see the manufacturing equivalent of the commissary kitchen: the universal fabrication facility. Some industries have already fully detached design and branding from manufacturing -- garments, electronics, consumer packaged goods. Foxconn and other

\(^{110}\) Note to DoorDash and friends: people who willingly order tofu almost certainly will not accept chicken as a substitute.
companies in the electronics manufacturing services (EMS) sector provided proof of concept that a broad mix of products can be designed anywhere and produced in bulk in the same factory -- phones, laptops, routers, webcams. (Coyle and Nguyen [2019] use the evocative term “factoryless manufacturing.”) TechShop and other commercial makerspaces demonstrated that low-cost capital equipment can enable localized production of globally-sourced designs. The pandemic has highlighted the dangers of relying on overseas vendors for crucial products, and ongoing trade tensions militate in favor of re-shoring. It is not hard to imagine on-demand manufacturing for certain goods being done by facilities adjacent to Amazon’s massive warehouses -- not this year, but one day.

We are already much of the way there. The “platformized” sharecropping model is pervasive, and may not be universally disastrous for entrepreneurs -- but the language of entrepreneurship is likely to serve as a Trojan horse to sugarcoat some brutal economic transitions (Eberhart et al., 2021). Last we consider what makes gatekeepers powerful or dispensable, and how to tame them.
What next? Business models and power

The digital revolution is fundamentally reshaping economies around the world by changing the raw materials of business: the input markets for capital, labor, supplies, and distribution, as well as methods of management. ICTs make it feasible to rent rather than own the core components of enterprise, through markets that would have been impossibly costly without the web and smartphones. As a result, corporations are far fewer in number and look very different than they did a generation ago. New non-corporate forms are proliferating but are largely invisible due to the way we gather data on the economy. The pandemic has further accelerated the move toward a more dispersed economy.

Public policy defines the rules for how input markets operate, erecting guardrails for how business evolves -- e.g., by establishing standards for what counts as an employee vs. a contractor. This is why the ride-hailing industry looks radically different around the world. American shareholder capitalism gives us Uber, a secretive scofflaw with opaque pricing, aggressive political engagement, and an army of precarious non-employee drivers. But the same technology is implemented very differently in Germany, or Sweden, or Indonesia, or India. Getting the rules right at the start is essential.

Over the course of the 20th century, America reined in its corporations by regulating the markets in which they participate: antitrust law (shaping how companies compete with each other and engage their suppliers), finance law (for banking and securities), labor law (for employment and unions), and corporate law (how corporations are created and governed). During the Nixon years, regulation reached directly into their operations: OSHA to protect workers from harm, the EEOC to make employment equitable, the CPSC to keep a company’s products safe, the EPA to reduce the negative environmental impact of business, and others. Regulations were squarely aimed at large, vertically-integrated, exchange-listed, US-based corporations as the modal form of enterprise. But as we have seen, this 20th century format no longer fits the 21st century economy.

Recent discussions of American capitalism are tinged with nostalgia for old-timey antitrust. If only we could return to a golden age of Main Street commerce that evidently lasted for a few weeks in 1950. More competitive markets would set us free. But as Konczal (2021) argues, sometimes freedom requires us to be protected from markets. In American capitalism, cheap wins, competitive markets get us to the cheapest price, and ICTs enable markets for everything. We may not love the results.

Think how your work life would change if every day you competed for a shift at your job in an online auction where the lowest bidder wins. After California’s Proposition 22, such a situation may not be far off, whether you are a teacher, a dishwasher, or an emergency room physician. Uber has the technology -- it only takes the will, and some legal tweaking, to unleash an Ayn Rand worker’s utopia. Everyone will be a self-employed entrepreneur running their own small (tiny, micro) business, and our yeoman dishwasher will create an LLC to receive their wage, which will vary from day to day according to market conditions. That may be a less corporate, more market-friendly future, but it will not be a better one.

New century, new forms of corporate power

111 Thelen (2018) and Davis and Sinha (2021) analyze how the Uber model was implemented in different countries around the world.
In the 20th century, corporate power came from size and concentration. Dominant corporations were those who were the biggest in the steel or auto or telecom or investment banking industry. But we have left that century behind. Kenney and Zysman (2016) put it well: “We are in the midst of a reorganization of our economy in which the platform owners are seemingly developing power that may be even more formidable than was that of the factory owners in the early industrial revolution.”

In a world where economic activities are increasingly mediated online, power flows not from size (however defined) but from being a gatekeeper. We find ourselves in an unfamiliar situation where powerful new entities arise as if out of nowhere, from a garage or a dorm room. The recent report of the University of Chicago’s Stigler Committee on Digital Platforms (DPs) describes these peculiar new domains:

The markets where DPs operate exhibit several economic features that, while not novel per se, appear together for the first time and push these markets towards monopolization by a single company. These features are: i) strong network effects (the more people use a product, the more appealing this product becomes for other users); ii) strong economies of scale and scope (the cost of producing more or of expanding in other sectors decreases with company’s size); iii) marginal costs close to zero (the cost of servicing another consumer is close to zero); (iv) high and increasing returns to the use of data (the more data you control, the better your product); and v) low distribution costs that allow for a global reach. This confluence of features means that these markets are prone to tipping; that is, they reach a point where the market will naturally tend towards a single, very dominant player (also known as “winner takes all markets”).

The source of power in these settings is not being the tallest building but being at the right intersection. Note that most tech firms are not significant gatekeepers, whatever their “bigness.” There are simply not that many profitable business models that lend themselves to being a bottleneck. If riders and drivers both have Uber and Lyft on their phones (“multihoming”), then neither is a gatekeeper. If a dozen firms can offer commission-free online trading of stocks, or free videoconferencing, or music streaming, or electric scooter rental, then none is a gatekeeper.

Corporations do not need to be gatekeepers to misbehave. Non-monopolists can be oppressive employers and noxious polluters and terrible citizens, peddling useless and dangerous products that make the world a worse place. There are plenty of evil business models that do not involve monopoly but still impose great costs on society.

But there are some kinds of gatekeepers that are particularly crucial to the economy and require greater scrutiny. Perhaps the most potent are those who control access to the building blocks of business: capital, labor, supplies, and distribution. Addressing the challenges created by gatekeepers in these domains is essential for getting the guardrails right.

We also want to keep in mind the long game. Facebook’s latest outrage or Amazon’s horrifying new patent are most salient today, but we are laying the foundations for the organization of the economy to come. Edmonton-based athlete Wayne Gretzky famously said “A good hockey player plays where the

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112 Rahman (2017) suggests that companies which are large in scale, provide significant inputs to other industries, and are able to limit access to vulnerable customers, deserve particular legal scrutiny.
puck is. A great hockey player plays where the puck is going to be." We have the technology to create a more democratic and equitable economy, and a widespread consensus that corporate power is out of control. Let’s use this opportunity to create the world we want, not just to give Pop Sockets a better placement on Amazon, or to get more dating apps on Google Play.

**The monopoly narrative is misguided**

Partisans on the left and right have converged on a monopoly narrative in recent years. In its stylized form, it goes like this: After Professor Bork published his treatise in 1978, antitrust in America fell into a coma, which unshackled an economic centripetal force that left nearly every industry dominated by monopolists. Monopolists drive up prices, drive down wages, make worse products, throttle innovation, and exercise unconstrained political power. The best policy response is to locate big companies, cut them down to size, and encourage more markets and more competition wherever possible.

As I have argued in this book, the monopoly narrative gets many things wrong. For two decades after Bork’s book, American industry became less concentrated, and corporations outsourced wherever they could. Since then, the digital transformation has scrambled the very idea of “industry” and “size” and “market share” -- not to mention “nationality” and “firm” and “employee.” The corporation itself is an increasingly obsolete way to organize economic activity in the US, and there are half as many of them as there were 25 years ago.

What happened? The digital revolution enabled more robust markets in successive domains. Capital markets (financialization), supply markets (Nikefication), distribution channels (Amazon), and labor markets (Uberization) have been fundamentally transformed in waves since the early 1980s. At the same time, the corporation itself has been transformed, shifting from a social institution to a financial vehicle singularly driven to create shareholder value. American shareholder capitalism is a machine exquisitely fine-tuned to create profit, whatever its source and whatever the outcome for society. Corporations that fail to heed the command to create shareholder value face swift retribution from outside investors. Monopoly is can be a useful tool for generating shareholder value, but it is hardly the only one. To revisit our earlier compendium, opioids, hyperprocessed food, nicotine pods, and petroleum can all be both competitive and profitable.

The danger of the consensus monopoly narrative is that it prescribes more markets and more competition as the solution to our ills. Markets have their proper place, but that place is not “everywhere.” Markets are intrinsically disruptive. Consider how the meaning of a date is different if money changes hands. Or a kidney donation. Or the adoption of a child. For-profit toddler prisons on the border with Mexico may be less costly than government-run facilities, but cost is not the only thing we value.

ICTs are enabling markets in ever more domains of social life. But to paraphrase Ronald Reagan: In this present crisis, markets are not the solution to our problem, markets ARE the problem. And if Josh Hawley shares your diagnosis of the situation, you should probably be anxious.

**Antitrust will not fix what ails American capitalism**
Lina Khan’s brilliant article “Amazon’s antitrust paradox” set the terms of the current debate around monopoly in the tech sector. She says: “If it is true that the economics of platform markets may encourage anticompetitive market structures, there are at least two approaches we can take. Key is deciding whether we want to govern online platform markets through competition, or want to accept that they are inherently monopolistic or oligopolistic and regulate them instead.” The first favors antitrust and perhaps breakups as a remedy; the second, regulation.

But antitrust is slow and unreliable and unlikely to survive scrutiny by courts that have been packed with Borkies for the past four decades. The limitations of antitrust are not just due to the narcotic effect of Robert Bork’s long-out-of-print writings. Wheeler et al. (2020) point out that “It’s not realistic to expect antitrust to have an important influence on privacy, data security, hate speech, imminent incitements to violence, malign foreign influence, or misinformation,” particularly if we need action soon. Antitrust cases commonly drag on for years and often end up before judges who are unimpressed. This is not just because so many judges (including a preponderance of justices on the current Supreme Court) have been marinated in Chicago School orthodoxy, although that does not help. It was an Obama-appointed federal judge who threw out the FTC’s case against Facebook in June 2021, pointing out that just because conventional wisdom calls it a monopolist doesn’t make it so under the law.113 Crane (2020) argues that the long history of antitrust in America shows Congress passing broad statutes seemingly aimed at reining in corporate power, and courts deciding matters much more narrowly and pragmatically. There is no point in passing high-minded legislation if its practical impact is rendered negligible by the courts.

It is not just the monopoliness of Facebook that makes it bad, it is Facebook’s noxious business model based on selling advertisements. If finely-targeted outrage and titillation and echo chambers drive engagement, and engagement enables Facebook to sell more ads, then it is not hard to predict what Facebook will do. Whistleblower Frances Haugen shared internal documents demonstrating that insiders are quite familiar with the horrifying collateral damage of Facebook’s business model – but boy, is it great for shareholder value.114 Facebook is a for-profit business. Moreover, antitrust is often far too indirect for the kinds of problems it is being asked to solve. Critics argue that Facebook was much more rigorous about protecting the privacy of user data back when it had competitors. But it is hard to believe that the surest path to better user privacy is to demand that Facebook spin off Instagram, thereby creating a vigorous competitive struggle ultimately yielding greater user privacy several years down the road. Or that more competition will produce a better solution to what should be done about Trump and social media. Using antitrust to address these problems is like trying to do surgery wearing oven mitts.

Google Search is a natural monopoly, and promoting a revival of Lycos and Alta Vista and AskJeeves would not yield better search results -- it would impose a burden on website owners who have to endure being crawled by endless bots seeking to create a map of the web as comprehensive as Google’s. (If you are wondering why so many websites ask you whether you are a robot, now you know. Google and Microsoft crawlers get waved in; the rest of us have to make it past a doorman, including the web-crawlers of prospective competitors to Google Search.) But there is no inherent non-commercial reason for Google Search to create horrifyingly intrusive profiles of its users to sell targeted ads. As with

114 https://www.washingtonpost.com/technology/2021/10/12/congress-regulate-facebook-algorithm/
Facebook, Google turned into a surveillance capitalist in order to sell ads. Surveillance capitalism turns out to be just shareholder capitalism plus online surveillance (see Zuboff, 2019; Morozov, 2019).

How about Amazon? From a consumer’s perspective, Amazon is a miracle unto the lord. Think back to how many hours you might have spent shopping for Ford Fusion hubcaps, headphones, cat litter, and vitamin D before Amazon. Do you really want to drive to the mall and wander through Sears rather than spend more time with your family? How many hours do you want to spend trying to find a parking space on Main Street to patronize the friendly local pharmacy and shoe store, only to find that they are out of stock? And how well would Americans have survived the pandemic without delivery services on a massive scale? There is good reason why consumer-oriented antitrust has led to a consumer’s paradise (albeit a nightmare for labor and the environment).

**Fight the real enemy**

The Biden Administration has unleashed the most sweeping effort to rein in corporate power since the time of Wilson and Brandeis over a century ago. Biden’s July 2021 “Executive Order on Promoting Competition in the American Economy” established “a whole-of-government effort to promote competition in the American economy. The Order includes 72 initiatives by more than a dozen federal agencies to promptly tackle some of the most pressing competition problems across our economy.”

These efforts range from encouraging the FTC to enforce antitrust laws more aggressively, particularly in Big Tech, to allowing hearing aids to be sold over the counter and third-party repair shops to fix phones and tractors. The initiatives are a wildly diverse grab bag, as if a giant suggestion box of consumer grievances had been tossed into a single policy lashed together by a theme of competition.

Many of the proposed initiatives will help consumers, workers, or both. As a citizen, I would be delighted to see many of these policies enacted. But to the extent that there is a coherent theory underlying this effort, it is the misguided monopoly narrative and the “curse of bigness,” for which the cure is more competition. Like the many recent anti-monopoly books, Biden’s executive order relies on the same narrative and the same problematic evidence to justify its proposals – the claim that 75% of industries have become more concentrated is featured in the second paragraph of the “Fact Sheet.”

We are living through a radical re-organization of the economy driven in large part by information and communication technologies. Because software is eating the world, markets are eating the world. If we want to guide the development of the economy in a humane and democratic direction in the face of this tectonic shift, a shotgun approach simply will not work. “Promoting competition” in an economy driven by shareholder value will not yield stable jobs, healthy communities, or a stronger democracy. Public policy needs to be grounded in a forward-looking sense of what enterprise can and should look like.

For the most pressing problems created by Big Tech, there are several recent proposals that draw on experiences in other industries and countries to limit the power of our tech oligarchs. The simplest solution to noxious ad-based business models is to tax targeted online ads, as Maryland and other states are now endeavoring to do. Economist Paul Romer has proposed exactly this: a progressive Pigovian tax

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on targeted digital ads, on the theory that if you want less of something, tax it.\textsuperscript{116} Stoller et al. (2020) go further still, proposing a ban on targeted advertising to discourage intrusive data collection on users. Business models will adapt to these new realities, perhaps by shifting to subscription income and scrapping the surveillance. Remove the incentive to collective intrusive data, and the problem may solve itself.\textsuperscript{117}

Recent proposals to target outrages more specific to Facebook are to regulate the algorithm that determines what shows up in one’s newsfeed in what order. This could be done by eliminating protections from liability for feeding particular kinds of content: those that promote discrimination against protected classes, or civil rights violations, or terrorism, or medical misinformation. Alternatively, Facebook could be required to open up the algo to enable third party services to determine the order of the newsfeed, perhaps shaped by user preferences.\textsuperscript{118} Doctorow (2021) points out that requiring tech companies to be better at filtering what their users see is unlikely to work as expected; for instance, algos generally can’t tell the difference between copyright infringement (which is illegal) and parody (which is not). Moreover, it would inherently advantage incumbent tech giants who can afford to build these costly services. Instead, he proposes implementing mandatory interoperability – requiring competitive compatibility that opens up the incumbents’ operations to competing services so that, for instance, a user could leave Facebook, take their data with them, and still communicate with their erstwhile platform-friends. Such a landscape would encourage new entrants with innovative services not beholden to our current tech overlords.

A bipartisan group of senators led by Amy Klobuchar and Chuck Grassley has also proposed legislation to prevent Amazon, Apple, Facebook, and Google from self-preferencing their own company’s products. Thus, Google could not place Alphabet products inappropriately high in search results, and Amazon could not preference Amazon Basics.\textsuperscript{119}

As this brief discussion illustrates, the range of grievances against Big Tech is like a Swiss army knife of offenses: privacy violations, targeted ads, content served up to enrage or to advantage the incumbents’ own offerings. The broader problem of the tech economy is the one identified by the Stigler Center report: the tendency for certain kinds of ICT-enabled activities to become natural monopolies, or more aptly “gatekeepers.” As with data privacy, European regulators took this issue on long before Americans did. The European Commission’s Digital Markets Act (DMA) creates an explicit designation of a “gatekeeper” identified using quantitative criteria – annual revenues, market capitalization, number of users, geographic spread of activities. Gatekeepers then become subject to a set of obligations aimed at preserving competition in their markets. Caffara and Scott Morton (2021) note that “Intuitively, we think of a gatekeeper as an intermediary who essentially controls access to critical constituencies on either side of a platform that cannot be reached otherwise, and as a result can engage in conduct and impose rules that counterparties cannot avoid.” But they also point out that the implications of being a

\textsuperscript{116} Romer describes his proposal here: https://www.nytimes.com/2019/05/06/opinion/tax-facebook-google.html and in more detail in this interview: https://review.chicagobooth.edu/economics/2021/article/capitalism-t-why-we-should-tax-digital-advertising

\textsuperscript{117} One option to ease the shift away from ad-based business models: give Facebook and Google the franchise to collect income taxes on the top 1% of earners, for a 0.5% fee. This might put their competences to good use while overcoming the budget limitations of the IRS.

\textsuperscript{118} https://www.washingtonpost.com/technology/2021/10/12/congress-regulate-facebook-algorithm/

\textsuperscript{119} https://www.washingtonpost.com/technology/2021/10/14/klobuchar-grassley-antitrust-bill/
gatekeepers are not the same across all markets, and that regulators ought to approach them differently depending on their underlying business model: ad-funded platforms (Google Search, Facebook); transaction or market-making platforms (Uber, Amazon); operating systems (iOS, Android, Windows, Amazon Web Services).

I would add that the core markets for enterprises are particularly fraught and require special scrutiny: those for capital, labor, supply, and distribution. At the moment, markets for capital and labor appear least prone to “gatekeeperization,” while distribution (via Amazon in particular) is most troubling.

Given the evident limits of antitrust for Big Tech, the smartest proposal to address the power of gatekeepers is to create a new regulatory agency along the lines of the Federal Communications Commission or the Consumer Financial Protection Bureau: a Digital Platform Agency (DPA) that would be as nimble as the entities it governed. Detailed arguments for such an agency emerged from a University of Chicago task force on the digital economy (Stigler Center, 2019) and were refined in a recent white paper from the Harvard Kennedy School (Wheeler et al., 2020). As the authors put it, “Neither antitrust nor traditional regulatory tools are capable of moving nimbly or quickly enough, let alone reliably enough, to address immediate impediments to competition and fair dealing that result from the power of dominant digital platforms.” (Wheeler et al., 2020). Instead, they propose a new style of agency whose approach would draw on two long-standing common law approaches: the duty of care and the duty to deal. The duty of care establishes responsibility for providers of goods and services to find and mitigate bad outcomes from their use. The duty to deal requires those who provide essential services to allow nondiscriminatory access to those services. These old principles have evident applications to digital platforms.

There are many precedents for creating a new regulatory agency for new industry, starting with the railroads and including drugs, communications, and air travel, and the Wheeler et al. (2020) design for a DPA draws thoughtfully on the history of these prior organizations. The proposal is also attentive to the peculiarities of the digital economy, including its extremely rapid and ongoing evolution, as well as the depth of the intertwining of information technology and our daily lives today.

The under-appreciated threat (or opportunity) unleashed by new technology is not around product markets but around labor markets. The Covid pandemic has revealed just how much work can be done from anywhere, and there is every reason to expect that more and more firms will rely on contract labor recruited from remote locales – including outside the US. It is not the threat of monopsony in labor markets (that is, a big local employer providing an outsize share of the jobs) that worries me – it is the threat that “jobs” in a particular place will be replaced by “tasks” that are completed by a shifting crew of non-employee contractors. Nothing would do more to “promote competition in the American economy” than having ongoing bidding wars for shifts by desperate contractors around the world, driving wages to an irreducible minimum that varied from day to day. Anyone familiar with the folkways of online labor knows what a nightmare scenario this would be (see Gray and Suri, 2019).

This time, how about more democracy?
A Pigovian tax on targeted ads will help tame some of the horrors of our new surveillance economy. Interoperability will open incumbents up to new competition. A Digital Platform Agency can help address the excesses of our new tech overlords. But we face a bigger threat, and a bigger opportunity.

The Covid pandemic demonstrated just how fully intermediated our lives have become, relying on electronic technologies for our most basic human activities. Kindergartners found themselves on lengthy Zoom calls with their teachers and youthful colleagues while their frazzled parents were ordering daily essentials from Instacart and hoping that their work colleagues did not realize they were dialed in from the bathroom. Human contact was limited to desultory cocktail hour FaceTime calls. For many of us, our knowledge of what was going on in the outside world was entirely filtered through apps and social media. Culture was absorbed by streaming dystopian fiction that did not look all that different from Covid life, TBH. Tesla’s $1.5 billion investment in Bitcoin was responsible for more carbon emissions than all carbon savings from every car they ever made. Whatever happened to that noisy orange guy who used to be on Twitter all the time? Has Zuckerberg been replaced by an emotionless replicant? Was Qanon renewed for another season?

It does not have to be this way. We have the technologies in hand to create a more sustainable, more inclusive, more equitable, and more democratic economy. We could create human-scale enterprise that meets the needs of human community; build democracy and accountability into the daily operations of their workplace; fairly compensate care workers for their essential labor; reduce work hours to enable a more balanced life; and start to build a “cosmopolitan locavore” community that is both global and local. But we will not get there as long as shareholder capitalism reigns over us – nor will more markets and more competition get us closer. It is time to privilege democracy over markets.

Under shareholder capitalism, smartphones in labor markets create precarity (for on-demand labor markets such as Uber) or control (as an electronic leash for intrusive monitoring of workers). But the same technology could just as easily be used to increase democracy and worker control (see Ferreras, 2017). Hayek might have pointed out that there is a lot of knowledge spread throughout an organization. Now we have a low-cost means of aggregating it, to share information and make choices. Online polls are pervasive – why not at work? The recent spread of democratic social movements in tech firms indicate that times have changed. 20,000 Google workers walked off the job in November 2018 to protest the corporation’s failure to live up to its values of equity. Salesforce employees demanded that the company cut its ties to the US Customs and Border Protection Agency because they did not want the technology they created to aid in imprisoning toddlers at the border. Microsoft workers sought to cancel a Pentagon contract to develop augmented reality goggles for battlefield use. 1500 Amazon employees walked off the job as part of a climate strike, in part due to the company’s dealings with petroleum companies. And Facebook workers in the summer of 2020 demanded that Trump be de-platformed for his use of the service to undermine American democracy.120 What detractors call “woke capitalism” is spreading through the tech sector and beyond.

Ironically, at the same time democracy is spreading at the grassroots, autocracy is spreading at the apex. Nearly half the tech firms that have gone public in the past few years have given their founders excessive voting rights – often 10 or 20 votes per share – that guarantee their personal control and drastically diminish the power of those outside the executive suite, including their own shareholders.

120 See Davis (2021) for particulars.
Under a peculiar Ayn Rand-inflected theory about the special value of visionary founders, the American venture capitalism industry is creating a corporate sector that is even less democratically accountable.\textsuperscript{121}

Let’s not waste this moment. There is broad consensus on the hazards of corporate power, and there is righteous anger at the autocrats of Silicon Valley. But the path to a better society is not through more competition and more markets. What we need most now is more democracy.

References


