

CONTENTS

1	Introduction	1
PART I. THE ORIGINS OF MARKET POWER		21
2	The Art of Managing the Moat	23
3	Technological Change and Superiority	42
PART II. THE HARMFUL CONSEQUENCES OF MARKET POWER		69
4	A Falling Tide Lowers All Boats	71
5	Economy of Stars	95
6	Unequal We Stand	115
7	The Gold Watch Myth	143
8	Rich Suburbanite, Poor Suburbanite	154
PART III. THE FUTURE OF WORK AND FINDING SOLUTIONS		173
9	Plenty of Reasons to Be Optimistic	175

10	The Future of Work	205
11	The Quest for Facts	216
12	Putting the Trust Back into Antitrust	234
	Epilogue	275

Acknowledgments 283

Notes 287

Bibliography 301

Index 315

1

Introduction

IT WAS LIKE a science fiction movie. While I was on another phone I saw Erin, who was a few thousand miles away, enter my daughter Elena's smartphone and move around among apps to troubleshoot. The high-speed data transmission was not working, and I had called technical support. After talking to several lower-level technicians who each did the same checks, switching the phone on and off or toggling the carrier settings, I was transferred to Erin, a senior technical advisor. It was pretty clear that she had a deeper knowledge of the technical characteristics of the device, and she asked me to change settings I was not even aware existed.

She spoke with an emphatic and confident voice, further accentuating her technical know-how. She gave the impression from the first instant that she would be able to resolve the issue. And she did. As a senior technical advisor, Erin's job is to analyze issues lower-level technicians cannot resolve. She gets the hard technical problems. In all we had four phone conversations for a total of more than three hours spread over several days. During that time she got several other people on the phone, including the telecom provider, to find out if it was an issue with the SIM card. At stages where she could not resolve a particular technical issue, she would do research and call me back the following day. In the end, she found out what the problem was: one batch of an older-model phone was incompatible with the newest SIM technology.

After everything was done, I wondered why it made business sense for a senior technical advisor to spend over three hours on the case.

Surely her hourly cost—her wage, the employer contribution, and the overhead associated with her work space—must be considerably higher than the replacement cost of the older-model smartphone, which at that point was sold for around \$300, but the production cost to the company must be substantially lower, estimated to be around \$150. Why not spend \$150 on a replacement phone instead of spending the high labor cost of a skilled technical advisor? Additionally, to compensate for the technical failure and the time it took to resolve the problem, the company even let me choose a \$150 accessory from their store. After the issue was resolved I asked Erin to talk outside the troubleshooting environment in order to find out.

Erin has two bachelor's degrees, one in journalism and one in social psychology from different universities. She also has a master's degree in sociology from another university, where she was a teaching assistant. When I first talked to her, I was surprised to learn that she had no schooling in engineering or the sciences. She told me that personal skills are the most important asset necessary to earn a promotion.

These social skills—which include things such as being able to show empathy or to understand the situation a customer is in—can't really be learned at school, in part because they are rarely taught. Erin described people getting angry on the phone, which required all her composure to remain even-tempered in order to deescalate the situation without taking things personally. The technical skills came later and required no formal education. Once you got the customer in the right place, you could comfortably get to the technical issues.

When she first took the job, she started at the bottom of the ladder, and within less than a year she had made her way to the highest technical advisor level. Despite being at the highest technical level, she didn't supervise others. Lower-level technicians passed problems on to her but they did not report to her.

After finishing her graduate degree and enjoying life in New Mexico, Erin decided to stay on as a technical advisor. The local establishment of her company had only one client, a large smartphone company. While the smartphone manufacturer outsourced the technical support work, the parent company closely monitored the operations and set the

quality standards of the service provided. Externally it looked like the parent company interacted with the customer: the technical advisors identified themselves with the name of the parent company, and their email addresses ended in @the-parent-company-name.com. The technical support they provided was by telephone, email, and by remotely accessing a customer's device.

Work was closely monitored and measured by all kinds of metrics, such as the average duration of the handle time, the after-call time, whether the technical advisor kept the commitment to a scheduled out-call, and of course by customer surveys.

Calls were recorded, and the representatives of the smartphone manufacturer listened in. The physical environment, as it was before the COVID-19 outbreak at least, was unappealing, with a lot of people crammed into a large open space. To get a space to work, you had to arrive early. Still, Erin said, the interaction with coworkers was very pleasant. You could ask colleagues questions on how to handle difficult problems, management was friendly, and the trainers were extremely helpful. "It is definitely a lot more pleasant than working for small companies, which I did through a temp agency. In a way, it is much less impersonal here in such a giant service firm dotted with half-cubicles than in those small firms. But the company management in those firms is much more aggravating."

With two bachelor's degrees and a master's degree, Erin is highly educated, in the top 15 percent of US citizens in terms of education.¹ But years of schooling is of course not the best measure of productivity. Many without college degrees earn outrageous amounts of money on Wall Street, and others with advanced degrees in the arts wait tables. Erin is doing a technical job and has excellent social and interpersonal skills, but despite her job title as a senior technical advisor, the substance of her job does not require higher education. She does this job because she cannot find a more gratifying job for which she has trained.

When Erin told me how much she earns, I was astonished: twelve dollars an hour before taxes, and no paid holidays. She works around forty hours a week, thus making \$480 a week, or \$23,000 a year when working forty-eight weeks. That is substantially below the country-wide

median wage of \$917 per week (\$47,684 per year over 52 weeks).² Typical jobs in the area for recent high school graduates without experience pay even less—\$9 per hour. But hers is the job of a senior technical advisor with experience, and she has a postgraduate degree, yet her pay is only just over half the median wage.

Now it makes sense why the smartphone company chooses to spend three hours of a senior technical advisor's time resolving a technical problem instead of sending a new phone. At an hourly wage of \$12, her total labor cost including employment contributions is somewhere between \$15 and \$20. The troubleshooting labor cost was probably \$50–\$60, substantially below the replacement cost. In fact, the company spent more on the \$150 gift.

Erin Is Not Alone

Erin's earnings are representative of work for most in the current economy. Since the 1980s, for workers who do not supervise others, for those who perform routine tasks, and for those with fewer years of schooling, wages have stagnated. These three categories make up the majority of all jobs. Fewer than one in five people have a supervisory role, and even today many jobs involve a routine activity such as secretarial work or driving a car,³ and more than 55 percent of all workers do not have college degrees.⁴ In real terms after adjusting for inflation, those wages have been virtually constant.

What's more striking is that during that same period, from the 1980s to the present, workers have become increasingly productive. Worker productivity, the total value produced in the economy divided by all workers, including higher-paid workers, has grown at a steady rate of 1.7 percent on average per year, as shown in figure 1.⁵ The value of the output workers produce has grown, yet what most workers get in exchange for producing that output has not kept up. Since 1980 there has been a clear break between the evolution of worker productivity and that of wages for most workers.

This growing wedge between flat wages for most workers and rising productivity clearly indicates that the majority of workers are getting a



FIGURE 1. Average wages of nonsupervisory production workers and productivity of all workers. *Source:* U.S. Bureau of Labor Statistics, Current Employment Statistics. For further details, see www.TheProfitParadox.com.

smaller share of the pie. The striking development is therefore not so much that wages in dollar terms are stagnating, it is that workers are now doing worse relative to the wealth they generate. The share of output in the economy that goes to wages—what economists call the labor share—is declining.

Ordinary working people notice that they are doing worse than their parents. Despite working hard, they're moving down the social ladder. And it's not like workers walking but staying in place—they're walking fast and moving backward.

Not All Workers Are Worse Off

Wage stagnation is not equally distributed. Figure 2 illustrates that the evolution of average wages is very different depending on education. Workers with only a high school diploma or those who have dropped out of high school have seen their wages decline by 15 percent. Even those with some college education—for example, a two-year professional

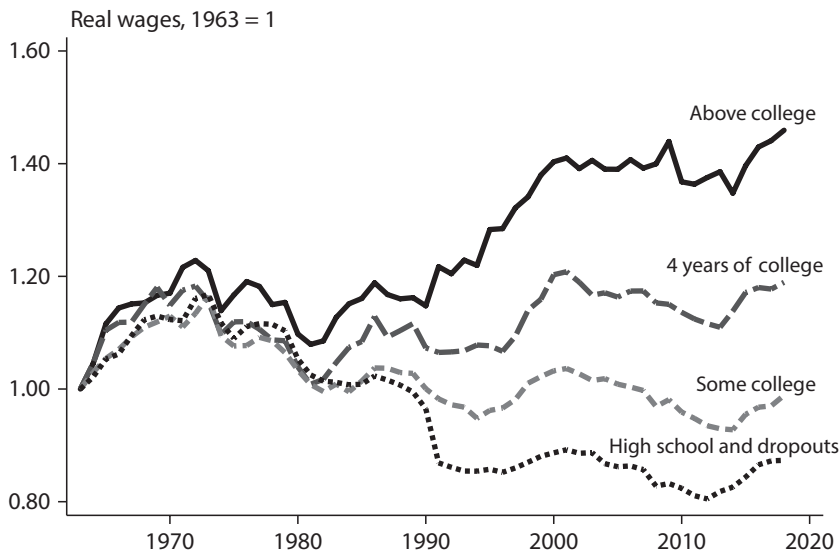


FIGURE 2. Wages by education. *Source:* U.S. Census Bureau, Current Population Survey. For further details, see www.TheProfitParadox.com.

degree—have not experienced any increase. The workers in these two education categories are the vast majority of the working population (80 percent in 1980).

While the wages of the less educated have languished, the wages of the more educated have increased. Those with a four-year college degree have seen a 20 percent increase since 1980, and especially those with higher-level education such as master's degrees and PhDs have experienced the highest wage increase. The sharp rise since the 1980s in the wage gap between those with a full college education and those without is often called the college premium. In the United States, a worker with a college degree or higher now on average earns 96 percent more than a worker with at most a high school diploma, up from 46 percent more in 1980.⁶

The evolution of the college premium is hard to rationalize with standard explanations. Nearly twice as many workers have a college degree today compared to workers in 1980. With more skilled workers vying for the high-skilled jobs, it should be easier for firms to hire high-skilled employees. Therefore we expect that the wages firms need to pay to hire those college graduates would be lower.

The idea that tougher competition among college graduates leads to lower wages is clearly at odds with what the data tells us—that there is a rise in the college premium. This is all the more striking if we acknowledge that there are many workers like Erin who do have a college degree but who perform a noncollege job—and as a result earn low wages. How many of our brightest college-educated musicians wait tables in Nashville?

Something else is going on. The most prominent explanation is that technology has changed in a way that makes skilled workers disproportionately more productive. Information technology (IT) allows a logistics manager to change the efficiency in thousands of stores of a wholesale distributor like Walmart or Amazon. Cheaper capital goods, such as computers and software, affect productivity of the central office software developer at Uber much more than it affects the drivers. For example, the technology makes the drivers more productive because downtime is minimized, but those gains originate from the input of the developers, not from the input of the drivers.

The workers who generate those gains also get compensated proportionately to what they generate. And then there is the extent of the market. With better communication technology and cheaper transportation and shipping, the reach of technology is extremely far. With a minor innovation businesses now can capture the world market, whereas before 1980 they were much more constrained by the local market. In the case of Uber, this creates a winner-take-all payoff that is extremely lucrative for those whose input in production changes the product, the efficiency, or the sales, but very little changes for the driver. Likewise, a new attractive feature of a cell phone developed at headquarters may substantially raise sales, but it does little for a senior technical advisor like Erin.

Such technological change is most visible in the economics of superstars.⁷ Before high-quality recording technology became available, the only way to listen to music or see a play was to go to a concert hall, the opera house, or the theatre. There are only so many seats in each hall, and there are only so many performances an artist can give. The best opera singer might demand a slightly higher ticket price and the largest opera house, but there is not much else that scales his or her better skill.

Once radio, television, and general recording technology became widely available, the people who could claim to have heard Maria Callas sing jumped from a few thousand to millions or even billions. Superstar pay then simply reflects the fact that her voice and persona generate enormous economic value. In the same way, Mick Jagger and Adam Levine command astronomical incomes because millions of people pay to stream their music; Leo Messi and Neymar Jr. earn millions in salary and royalties because of the television rights to their games, and the shirts with their names on them that are sold from Beijing to Buenos Aires.

This does not necessarily mean that the best opera singer today is better than the best opera singer a hundred years ago, or that superstar earnings reflect an equally abysmal difference in their abilities and performances. The role of the superstar phenomenon is to amplify even minor differences in ability into huge differences in stardom and in earnings.

These are the winner-take-all markets. The winner who not only takes the trophy but sells more jerseys will have more viewers for the next game, and so on. The superstar who can do this commands a share of the output that corresponds to the amount of profits that his or her contribution generates. Superstar pay reflects how much a star's ability contributes to the output it generates. Technological change in a globalized economy screens the superstar's game to more eyes and leads to the sale of more jerseys with their name around the globe. The same skill now commands a higher income for the winner.

Whether it is the famous superstar or the not-so-famous data scientist, medical doctor, or Wall Street banker, technological change has made some workers disproportionately more productive. As a result, they earn multiple times what Erin makes as a senior technical advisor. However, technological change is not the only driver behind the rise in income inequality. The same determinants that lead to a decline in the wages of the common worker also create a wedge between the high- and low-earnings workers: the rise of market power by dominant firms.

The force behind the atrophying labor market is the decline of competition in the marketplace for goods and services. From tech to textiles,

our age is marked by rapid technological progress—progress that means just a few companies now dominate the railway lines of wireless technology. These technological advances bestow enormous power to those few firms. In turn, the accompanying lack of competition creates brutally unequal outcomes among workers.

It is evident that firms play a crucial role when we look at the origins of the increase in wage inequality. The lion's share of the rise in wage inequality is driven by the fact that firms now increasingly look different from one another. Most firms used to have a solid share of both low- and high-skilled workers on the books. Now, some firms almost exclusively house the highly valued and highly paid workers, where they rely on outside companies for more menial services such as cleaning and food preparation.

This is true even in the high-tech industry, where there are a number of firms full of extremely high-skilled workers with high salaries and benefits, especially in Silicon Valley. Who doesn't want to be a well-paid programmer at Google headquarters, where subsidized amenities such as high-end food, laundry service, and day care are available in the building?

But in that high-tech industry there are also firms such as the one where Erin works as a senior technical advisor, where she and most other employees are on the low end of the pay scale, especially compared to the salaries at the Google headquarters in Silicon Valley. You can think of Erin's firm as the help-desk function within any company. Only now, the help-desk function is outsourced at a different firm.

The result is two firms, one with low salaries performing the help-desk tasks, and the headquarters with the design and development tasks. Some time ago the two tasks were most likely in the same firm. In the same way that the cleaners and security personnel were hired within the firm, now most firms outsource all those functions.

As a result, the increase in wage inequality that we observe is nearly entirely due to the fact that businesses now look more different from one another. Those who design the phones, as well as the coders and developers, have high wages, and those working for the firm sourcing the help-desk function have low wages. The rise in wage inequality that

we observe is mainly driven by the increase in inequality between firms, with some firms paying high wages to all their highly productive workers whose work is scalable and other firms paying low wages to their workers who perform menial services.

While inequality between firms has increased, there is little increase in inequality in wages within firms. The top 1 percent worker now earns on average twenty times more than the bottom 99 percent worker in the same firm, which is only slightly higher than what it was in 1980. Nonetheless, there has been a much sharper increase in wage inequality economy-wide, and more than two-thirds of that rise in wage inequality is due to the increase in inequality between firms.⁸

The implication of course is that firms look very different from each other: working at Google headquarters with one day per week to work on your own project is very different from Erin's environment with cubicles, low ceilings, and stained and curled-up wall-to-wall carpet. Until 1980 they might all have been located at the same site, neither as fancy as Google nor as basic as the tech support site. And if the sites where people work are different, so are the wages. The gap between companies and the wages that they are paying has grown since 1980. The rise in economy-wide wage inequality is driven by this gap between companies.

The higher earnings of a minority of workers are not enough to offset lower earnings for the majority, the common workers. Even if we consider the salaries of all workers, including those in high-paying jobs and the superstars, the amount the economy spends on labor has decreased steadily since 1980. The labor share, the total expenditure on wages as a share of production in the economy, has historically been around two-thirds, or 65 percent. The remaining one-third is expenditure on capital and profits. Today the labor share is below 58 percent.⁹ A decline of seven percentage points—or 10 percent—may seem tiny, but that includes the salaries of all those top earners, not just the low-paid workers. It means that work in total takes a 10 percent smaller share of the pie.

This is a huge decline, and it is unprecedented. It is even more surprising if we add that the capital share has declined. Firms also spend a

smaller share investing in capital. What has happened since 1980 is that the profits have risen sharply economy-wide.

This is evidence that large firms dominate the market of the goods they sell. This is a fundamental change in the economy that reduces the compensation workers receive for their labor, while those owning the firms—including all of us who own pension funds that invest in those firms—are doing better.

However, the decline in the labor share is not simply the redistribution from those who work to those who own capital, with some winners and some losers. In this book I will argue that what is happening in the economy is to the detriment of all, except for a few capital owners. The big loser is work, but the economy as a whole, including most of the owners of capital, is worse off, too.

The Gold Watch Myth

Wage stagnation and the rise in wage inequality are not the only developments in the market for work. Since 1980, other long-term trends are profoundly transforming work. In this book I offer a bird's-eye view of the state of work in modern times. Some of the facts about work are well known and others are less so, or even counterintuitive.

There are several myths about the economics of work. Relying on data and research, I will attempt to debunk these myths. One is the Gold Watch myth. Most people believe that the generations of our parents and grandparents had jobs that were safer and lasted longer. A job used to be something you could count on for your entire professional life. As a youngster you would start work at a corporation or the local factory and you would gradually get promoted until the day you retired, when you received your gold watch in appreciation and a handshake from the boss.

This Gold Watch moment is a myth because jobs today on average last substantially longer than they used to. It may not fit our view of what is happening in the economy, but the data tells us that the duration of jobs has become longer. On average, jobs today last one year longer than in the 1980s.¹⁰ This is a huge change.

If job duration is longer, it necessarily means that people switch jobs less frequently. It is like children going to the local fair. If the horse carousel rides are longer, then they switch less frequently to a different attraction. Job duration and the frequency of job switching are therefore inversely related. When we look at the data, we find that the decrease in job switching is striking. The likelihood of switching a job in a given month is 31 percent lower than what it was in 1994, the first year the data was collected.¹¹ This decline in the dynamism of the labor market is massive. And if workers switch jobs less often, then we naturally see a decline in the adjustment of the workforce. In other words, there is a decline in business dynamism.

Another way of examining this labor market dynamism is to look into migration rates between cities. Since most people who relocate from one city to another do so because of a job change, the data naturally also shows a substantial decrease in the migration rates within the country. Migration rates have decreased by about half. Whereas thirty years ago the fraction of the population that migrated between states in a given month was 3 percent, now it is 1.5 percent.¹²

This large decline in the dynamism of the labor market is a cause for concern. I will argue that despite the desirability of job security, the slowdown in job switches is harmful. It hampers social mobility, as workers get promoted at a lower rate and they climb up the job ladder at a slower pace, which affects some workers much more than others, in particular the young and new graduates. It now takes the young longer before they can find a job, which hurts them and the economy because they lose out on the largest growth in their productivity.

The absence of job prospects when young is also the reason why many people in European countries live with their parents until their mid-thirties, and why they marry and have children late or not at all.

With low labor market dynamism, older workers who happen to lose their jobs at or after the age of fifty are doomed because it is much harder to find a new job. A telling example is that of the Danish labor market. Until the 1990s, workers in Denmark experienced low labor market dynamism and hence long unemployment durations comparable to workers in Mediterranean countries today. The Danish

government introduced policies that would do away with the rigidity of job security precisely to make job finding more fluid. Now both old and young Danish workers can find jobs more quickly, and that compensates for their lack of job security because there are no doomsday scenarios for those above age fifty (this is discussed in greater detail in chapter 11).

Every new job originates at a firm that expands, and whether a firm expands is driven by innovation. Young firms create disproportionately more jobs than older and more established firms do.¹³ One of the most striking facts is that currently there are fewer new startup firms than there were four decades ago.

If at a cocktail party you insist that startups are down, you risk not being taken seriously. Surely, with fast technological change and the new, fast-growing firms out of Silicon Valley, there are more startups than ever, people argue. And yes, some are startups like *pets.com* that never live up to their promise, but at least they try and they innovate. But this is not what the data tells us.

Across the economy in all sectors, such as retail, manufacturing, transportation, energy, banking, and so on, about half as many new businesses are started every year compared to forty years ago.¹⁴ The decline in startups is true even in the tech sector!¹⁵ After all, who will enter to compete with Google or Facebook? It may have come as a surprise, but the startup boom is a myth.

Modern Times Then

All these ailments that affect the current state of work—lower wages for the common worker, rising wage inequality, a declining labor share, declining labor dynamism and mobility, declining startups—are new since 1980. The main aim of this book is to go on a quest to discover why work has lost its luster.

Undoubtedly, the past forty years has been a period of remarkable technological change, globalization, and changing demographics. These profound changes are the first candidates to explain this evolution and development. And technology deserves particular attention. But

technology is not the villain in this murder mystery. Rather, it resembles Javier Pereira in the series *Good Behavior* (2016–2017), where all are bad and he is the least bad. More importantly, when you watch the series, you tend to sympathize with him. It is the same with technological change: many of the ailments that we observe in the data about work originate in technology. And while technological change is very often the cause, it is also the solution.

To find the real villain we need to take a detour, because even if what is going on with work in the past forty years is remarkable, it is not unique in history. The current state of work is not all that different from a hundred years ago, so our detour takes us to the original “modern times.”

In the full onslaught of the Great Depression, Charlie Chaplin’s silent film *Modern Times* tells the story of a factory worker whose labor is dehumanized—where the meaning of his work is equated to that of a cog, a screw, or a coil. In conjunction with the repetitiveness of his actions, he fights in frustration against the effect of the machine and the assembly line from the Industrial Age. For the last time Chaplin plays his favorite character, the Little Tramp, who first appeared on screen in 1914 and made him a familiar and popular persona around the world.

Poor and destitute, well-mannered and educated, and with a heart of gold, the Tramp is from a lost generation that is doing worse than their parents. Whenever he can, he dresses up elegantly with a white collar, a hat, and a three-piece suit. Even if he only has one pea to eat, he serves the meal on white linen.

He is poor because as a middle-class worker, he has been dealt a bad hand. He has received some education and is well prepared for doing any job, but the only jobs he can get are those on the assembly line where it is hard work for little pay, and where his middle-class background and education is not valued. Work conditions are harsh, the pay is low, and the work is dehumanizing. By the time Chaplin makes *Modern Times*, his focus is on the origins of why work is so miserable.

Modern Times premiered in February 1936 at the Rivoli Theatre in New York City. The movie was not an immediate box-office success in the United States, but it had a big impact in Europe, both popularly and

with intellectuals. Jean-Paul Sartre and Simone de Beauvoir used the title of the movie to name their French existentialist literary magazine (*Les Temps modernes*), which was published from 1945 to 2019. The images the movie portrayed had a lasting legacy. The idea of Big Brother screens controlling the workers made it into George Orwell's novel *1984*, which was not published until 1949, and the assembly line scene has been an inspiration for many other comedy features.

When the movie was made, the economy was at the height of the Great Depression.¹⁶ It was the first global economic recession after the first truly global conflict, World War I. The global conflict and economic downturn came on the heels of the first global economic epoch, which had seen unprecedented expansion of industrial production, technological innovation, and an enormously dense network of international trade routes.

The Second Industrial Revolution, between 1870 and World War I, saw an explosion of inventions in manufacturing in the use of machine tools and steel production, as well as in the spread of electrification, the use of petroleum, and the development of new materials and chemicals. Those technological developments in manufacturing gradually led to a large increase in mobility and communication—a massive expansion of the railroad network around the world, the introduction and dissemination of the internal combustion engine, the development of the electric engine, the introduction of the manufacturing production line, and the use of new communication technology such as the telegraph, the telephone, and the radio.

While the groundwork for these developments was often laid decades earlier, in the first half of the nineteenth century, it was not until the availability of other technologies that large-scale production led to rapid economic development toward the turn of the twentieth century.

Trade and mobility of goods, people, and ideas contributed to the spread of technology and growth. Both nationally and internationally, the interdependence of economic flows and interests was greater than ever. International trade before World War I, with 30 percent of output, was at its highest level ever following rapid growth during the preceding decades.¹⁷ Then, following World War I and the Great Depression in

the 1930s, trade dropped back to 10 percent and would not reach 30 percent of gross domestic product until more than half a century later, in the mid-1970s.

In conjunction with rapid economic growth and progress, the rise of technological change also allowed firms to organize in ways that enabled them to exert more market power. Firms that opened up new markets not only were the first to enter new markets, but the technology also allowed them to build on the first-mover advantage to maintain market dominance.

Lack of entry of firms competing away those profits was due either to the technological aspects (huge entry costs for railroads), to the implicit protection by government policies, to the lack of enforcement of antitrust, or to explicit collusion. The individuals behind the business empires that they managed to build were often accused of unscrupulous and amoral tactics, lending the name “robber barons” to those entrepreneurial heavyweights such as Andrew W. Mellon, J. P. Morgan, Andrew Carnegie, Charles M. Schwab, Leland Stanford, Russell Sage, Cornelius Vanderbilt, and John D. Rockefeller.

While some have argued that the robber barons were captains of industry who created economic progress, many historians view them in a negative light, as obstructionists who plundered and cheated investors, customers, and the government. John D. Rockefeller’s Standard Oil, for example, had been buying up many smaller firms to exert market power in an industry where competition would bring down profits; and J. P. Morgan reorganized and consolidated competing railroad companies along the US East Coast and in the Midwest, where he created the controversial Northern Securities Company, which had a virtual monopoly around Chicago.

A by-product of that period of enormous wealth accumulation in the hands of a few companies and individuals has left us with a long-lasting legacy of philanthropy, much of it to the benefit of universities and research institutions that got their names from those wealthy families, such as Stanford, Carnegie-Mellon, Duke, and Vanderbilt Universities and the Russell Sage Foundation. Andrew Carnegie gave away 90 percent of his wealth, much like the Giving Pledge campaign launched

by Bill Gates and Warren Buffett, inspiring contemporary billionaires to give away at least half their wealth.

Interestingly, a nonnegligible share of last century's wealth accumulated in the hands of a few gigantic corporations has ended up in the richest foundations that fund social intervention as well as research into social issues. Cynically, those causes are often related, directly or indirectly, to putting right the wrongs of the moneymaking activities of the founders of the foundations.

Massive wealth also made for amazing architecture. Impressive buildings like Grand Central Station or the offices of General Motors in New York would probably not have been built if Vanderbilt or Ford had very thin margins.¹⁸ This was not exclusive to the United States. Major architectural achievements at the turn of the century would not have been built without philanthropy of the rich: the Eiffel Tower in Paris, the art nouveau buildings by Horta in Brussels, and the modernist buildings by Gaudí in Barcelona.

The wealth accumulation and the economic growth that technological progress brought looked extremely good on paper. The extreme global interconnectedness of the economic activity even led people to believe that finally the world had reached a point where there was no way back: the economic prosperity was there to stay. Recall, this is the period in which international travel across most advanced countries was unrestricted and no passports were needed.¹⁹

In 1910 Norman Angell published *The Great Illusion*, arguing that the economies of different countries were so interdependent through trade flows and credit that the economic losses of this economic independence would be too great to ever curtail it, and no nation would have any incentive to wage war. Even if a country conquered another and seized its property, the need to maintain the conquered population would require the occupying country to grant property rights, as well as to incur the cost of occupation.²⁰ It is the ultimate view of capitalism: capital, human or physical, in a modern open economy does not see borders or respond to nationalities or countries.

Of course, Angell's thesis was itself a great illusion and proven wrong only four years after publication with the onset of World War I. In the

ensuing years he reformulated his thesis, saying that given economic development and interconnectedness, war was not impossible but pointless and economically irrational. Underneath this unbridled optimism reflecting unprecedented average economic growth and average wealth accumulation, however, was the entirely skewed distribution of those gains.

Chaplin's *Modern Times* illustrates that those gains were not equally spread and that the vast majority of the working population was worse off despite the progress. Even Angell's refurbished view did not take into consideration the fact that for the economic system the gains must be distributed sufficiently evenly, or else the majority of the population has nothing to lose if the whole progress machine is destroyed.

Modern Times Now

The central tenet of the profit paradox is that rapid technological change creates enormous potential for economic and social progress. Innovating firms improve efficiency and the lives of citizens. At the same time, the new technology lets firms build up market power and dominance that is detrimental for work.

The profit paradox, and its development since 1980, has a lot in common with how it developed over a century ago. Modern times now are not unlike Chaplin's *Modern Times*. A well-trained, educated worker like Erin who works as a senior technical advisor in IT earns strikingly low wages, while her parent company reports enormous profits and reaches an unprecedented stock market valuation.

Just like the development of electricity, the telegraph, and the combustion engine in the eighteenth century, technological development after World War II gave rise to computers, the internet, and mobile communication. Half a century after those individual discoveries, the democratization and the resulting scale of the operations at the turn of the twenty-first century led to the widespread adoption of mobile phones and the transformation of many sectors, retail not the least. This huge technological disruption has not only brought progress, but it has also created the possibility for first movers to develop market power and to stifle competition.

The highway of digital communication today is the equivalent of the railways of the early twentieth century. Just like J. P. Morgan created market power by consolidating competing operators and raising prices, in current times Mark Zuckerberg has consolidated the large social media platforms Facebook, Instagram, and WhatsApp.

That market power has brought enormous profits and has created huge wealth. In fifty years our grandchildren and great-grandchildren are likely to apply for grants from a Zuckerberg Fund, if it exists, or the Bezos Family Foundation, and buildings and museums with those family or company names will be on the list of landmarks, just like the Guggenheim Museum today.

Most of today's bankers, hedge fund owners, entrepreneurs, and Silicon Valley billionaires still do not have bad reputations, at least for now. Let us hope that the economic impact of today's market power is less acute than it was a century ago.

Even the robber baron's market power in the Gilded Age was a decaffeinated version of full monopoly power that the Crown granted to the Dutch East India Company in the seventeenth century.²¹ However, there is no doubt a parallel that market power by firms in the output market has far-reaching implications for work today, as it did over a century ago.

The point of this book is to document that the evolution of work we have seen in the past forty years is the result of a rise in market power, and that the causes and implications bear a remarkable resemblance to what happened in Chaplin's *Modern Times*.

I am taking the liberty to describe current times as "modern" because in economic terms, our times resemble that period usually identified as modern—the turn of the twentieth century. It is a similar socioeconomic epoch with fast technological progress, with globalization and economic interdependence, and with substantial disparities in how the economic gains from this progress are distributed.

Interestingly enough, there is a double meaning to the word "modern." More colloquially, with *modo* (meaning "just now") as its root, "modern" stands for something current, or an event in the not-too-distant past. For example, modern batteries now give electric cars a

range of up to 350 miles. The terms “modern” and “contemporary” are synonyms in vernacular English. At the same time, it indicates a particular epoch.

The focus of the book is on documenting all aspects of work and how they have evolved in the past four decades. I will report the facts and what we know, as well as how things have changed and are in the process of changing. In addition to the facts, we have a wealth of economic research that analyzes and interprets the facts from current times. This allows us to search for the causes.

What follows is a quest for what is the cause of the current state of work, based on the facts and economic research. But this book is also inspired by Studs Terkel’s book *Working* (1974), which recounts what ordinary (and not-so-ordinary) people do all day. Throughout the book I will accompany my quest for the facts and statistics with the stories of individuals like Erin that are related to work. While there is a sharp scientific contrast between the large number of observations with statistical significance and the singular experience of an individual worker, I cannot state it more lucidly than Stefan Zweig that both are valuable: “It is not the cold fact which has meaning, but rather the human and emotional element contained within it.”²²

INDEX

Note: Page numbers in *italics* indicate figures and tables.

- AB InBev: corporate history and dominance, 37–41, 60, 78, 262, 267, 271; headquarters, 32, 38
- academia: data sharing in, 258; economic theory in, 167–168, 246, 247, 248–249, 252; philanthropy for, 117, 118, 120–121; super- and mini-star phenomenon in, 115–118, 121–126, 141
- acquisitions and mergers: antitrust review of, 244–245, 250–251, 260, 261, 262, 264, 268–269, 270, 272; killer acquisitions, 39, 194, 264; market power via, 36–37, 40, 41, 60, 78, 94, 250–251, 262, 263–264; slowing or halting of, 261, 262–264
- addictions, 64–65, 118–119, 159, 160
- advertising. *See* marketing and advertising
- agglomeration benefits, 136–137, 138
- agricultural economies: in American history, 71, 155–156; horses in, 212, 213–214; in world history, 179, 183, 190–191
- airline industry: concentration in, and market power, 40, 164, 185; innovations and discounts in, 180–181, 185; price transparency in, 210, 274; safety regulation of, 235–237
- algorithms. *See* artificial intelligence and machine learning
- Amazon: distribution by, 45, 46; leaders, 177; market power of, 42–43, 46, 60–61, 166–167, 228, 247; pricing and profit of, 46, 60–61, 166–167; robotic labor of, 141–142, 264; supplier relations of, 52, 89, 264
- American Medical Association, 91–92, 247–248
- antitrust policy: challenges of, 243–245, 248–249, 250–251, 252; enforcement laxity, 16, 185, 249–250, 260, 264, 270–271; improvement ideas and illustrations, 260–271, 271–274; killer acquisitions and, 39, 264; laws and oversight, 46, 244–245, 248–251, 252, 260, 262, 264, 265, 268–274; literature on, 243, 249–250; of railroads, 59; sabotage monopoly practices, 60; schools of thought on, 236, 245–252, 253. *See also* monopolies
- antitrust suits, 270–271; on patents, 240–241, 259; on social media services, 263; on web browsers, 265, 266–267, 269–270
- Apple: iPhone, and costs, 66–67, 243; products' operability, 265; profit ratios at, 34–35; stores, 109
- Arnold, Thurman, 252
- artificial intelligence and machine learning: algorithms and applications of, 51, 206–207, 209–210, 210–211, 255–256; market power and, 52, 207–215, 257, 259–260; skilled workers and earnings in, 104; translation tools of, 51, 205–206; web page ranking by, 210–211
- athletes' pay, 87, 104–105, 107, 108
- AT&T, 245, 248, 249

- automation: of labor and workers, 14, 180, 181, 183; low-skilled work and wage effects, 123, 140, 179, 180, 182, 214; productivity and market power from, 141–142, 180; resistance to, 175, 179–180, 181, 182; robot labor described, 141–142, 183, 264
- automotive industry: market power in, 38; patents in, 242; self-driving cars, 51–52, 209, 255–256, 258–259
- baby boom generation, 157–158, 160
- barriers to market entry: firms' creation for others, 25, 54–55, 166–167, 185, 208, 240–241, 257, 259–260; vs. free, 191–195; lowering of, 242, 255; of most challenging sectors, 18–19, 27, 43, 44, 59, 257, 266
- bartering, 63, 189
- Berge, Wendell, 243
- beverage industry, market power, 35–41, 78–79, 267
- biases: algorithm corrections for, 206–207; in data collection, 226–228; from grievances, 159; human behavioral, 62–63, 64–65, 178, 272; technological, for labor, 122–123, 140–141, 214–215
- biotechnology firms, 32–33, 56–57, 66, 72
- birth rates, 157, 158
- Boeing, 235–237
- Bongo, 192–194
- Bork, Robert, 247, 249–250, 265
- Bowley, Arthur, 72
- boycotts, 202–203
- Brandeis, Louis, and Brandeisian school of thought, 245–247, 252, 261
- brands: discount, 109–110, 180–181; industry/market choices for, 35–36, 37–38; internationalization of, 36–38, 47; marketing bolstering and effects, 50–51, 55, 58; modernization attempts of, 109–110
- business size: executive salary links to, 97–98, 99–101; and financial regulation, 273; and market power, 35, 101, 165, 246; pro-big business environment, 161–162, 164, 165
- cable companies and contracts, 23–24, 238
- capital costs: considering, with market power, 32–33, 76–77; elements of, 32, 76; human capital as, 55; intangible vs. tangible, 56, 58
- capitalism, as economic system, 65–66, 123, 166, 171, 182, 234–235
- capital share and investment, 76, 191; benefits of capital owners, 11, 191, 213; person-level examples of, 188; trends and rates of, 10–11, 71–72, 76, 77, 171–172
- career life spans. *See* job changes and durations
- catalog and mail ordering, 45–46
- causation vs. correlation, 221–222
- central banks: function and systems of, 167–169, 170, 171, 268, 270; risk protections of, 190
- CEO salaries. *See* executive wages and salaries
- charity. *See* philanthropic giving
- Chicago school, 245–252, 253
- China, 134–135, 176–177, 178–179
- Clayton Antitrust Act (1914), 46, 244, 250, 262, 265
- clothing chains, 30, 47, 84–86, 109–110
- “college premium,” 121–126, 141
- collusion: algorithmic, 209–210; price fixing as, 40–41
- colonial systems, 238, 239
- Comcast, 23–24, 238
- common ownership, 39–40
- commuting (labor), 148–149, 154
- comparative advantage, 188
- competition: common ownership vs., 39–40; decreased via firm dominance, 11, 18–19, 26–27, 31–32, 35, 37–39, 42–43, 45, 52, 54, 55–56, 75, 79, 158, 162, 166, 185, 202; decreased via technology, 8–9, 18, 31, 42, 43, 181–182, 208; driving technological innovation, 24–25, 180–181; federal authorities for, 260–261, 264, 268–269,

- 270, 271–274; free entry to, 191–195; of free market, and critiques, 26, 31–32, 158, 162, 235, 236, 251, 252, 253; labor market illustrations, 74–75, 122, 123–124, 129, 130, 146–147, 201; licensing’s effects on, 92, 93, 94, 247–248; perfect, 26, 146, 171, 185; superstars among, 103, 118, 158. *See also* barriers to market entry; monopolies; oligopolies
- complete pass-through, 145–146
- connection quantification, 210–211
- consolidation, industry. *See* acquisitions and mergers; monopolies
- consumer behavior: biases within, 62–63, 64–65; boycotts, 202–203; brand loyalty, 50–51, 55, 64, 109–110; data collection and tracking of, 62–64, 210, 217–218, 220, 255–256, 272–273
- consumer welfare, as antitrust consideration, 250, 260, 262–263, 272
- contracts: for flexible labor, 223–224; nature of exchange, 63–64; tactics and terms of, 62, 266, 267; in telecommunications, 23–24, 266; zero-hours and gigs, 200
- correlation vs. causation, 221–222
- cost cutting, 60–61, 85, 180–181
- cost of living: through lowered relative prices, 176; wages and locations details, 88, 137, 150, 197
- costs. *See* capital costs; cost cutting; fixed costs; overhead costs; payroll; pricing
- COVID-19 pandemic: regulation during, 237; stock market effects from, 161, 163, 164; travel during, 150; unemployment during, 80, 163, 230; vaccines for, 176, 242
- creative destruction: jobs effects of, 181, 183, 186–187; vs. profit paradox, 59; theory of, 24, 27, 59, 66, 194–195. *See also* technological change and innovations
- credit ratings, 125–126, 273
- currency, 168, 268
- customer service: examples of, 1–4, 42–43, 45–46; work and skill, 1–4, 9, 126–129, 129–130
- data: biases in, 226–228; collection, of and for consumer behavior, 47, 62–64, 208, 209–210, 216–218, 255–256, 260, 269, 272–273; collection, of and for learning applications, 51–52, 206–207, 208, 209–210, 254–255, 257, 258–259; government data and reports, 218, 228–229; hoarding and sharing of, 254, 255, 257–259; as labor, 255–256; and market power analysis, 28, 32–33, 54–55, 162–163, 216, 255, 257, 259–260, 272–273, 274; quality and completeness issues of, 226–233, 259; quantitative analysis of, 211; transparency of, 219, 220–221, 273–274; use to understand economy and work, 211, 216–233, 273–274
- delivery jobs, 198, 202–204
- demand-related economies of scale, 47–51, 208
- demography. *See* birth rates; immigration and emigration; life expectancy; populations and population data
- Denmark: data and transparency policy in, 221–226; labor market realities, 12–13, 132, 223–226
- differentiation: marketing for, 50–51; in platformed services, 49–50, 256; and product choice decisions, 62
- discount brands, 109–110, 180–181, 185
- distribution, wages, 82–83, 139–142, 220
- distribution channels: brands’ internationalization, 36; density requirements in, 47; market dominance and, 37–38, 45–46, 267; vertical integration in, 52, 61. *See also* logistics management
- distribution of wealth, 164
- division of labor, 128; specialization and innovation in, 187–191, 211; work sorting, 130, 138

- Dow Jones Industrial Average, 161, 164
- drug addiction and deaths, 64, 119, 159, 160
- eBay, 48, 50, 206, 208
- economic analysis: data collection, and understanding work, 216–233; experimentation in, 222–226; quantitative, 211; statistics regularity for, 71–74. *See also* gross domestic product (GDP)
- economic backgrounds, individuals, 105, 124–125
- economic stimulus actions, 168, 172
- economic theory: of competition, 26, 234–235, 247, 248–249; of interest rates and inflation, 167–172; of labor and capital, 71–74, 76, 79–80, 210–211
- economies of scale: cost effects of, 44–45, 46, 167; globalization amplifications of, 52–54, 132; natural monopolies' creation, 43, 265; sources of, 43–51, 208–209; technological change and, 43–52, 54
- education levels: college enrollment rates, 122; college tuition costs and, 117, 122; health and, 160; job polarization outcomes, 141, 215; signaling theory of, 125; and underemployment, 3, 122, 124–125, 151; and wages, 3–4, 5–7, 6, 117, 121–126, 141, 215
- elasticity of labor supply, 82, 182–183
- empathy, 2, 207
- employment statistics: of hours worked, 195–197; of wages and education, 5–6, 6; of wages and productivity, 4–5, 5
- Engel's law, 176, 190, 197
- entrepreneurship: capitalism history and changes in, 114; competition and markets for, 13, 23–25, 166, 167. *See also* startups
- equilibrium outcome, 96, 99–100, 166, 226, 268
- Europe: competition law in, 244–245, 262, 266, 268–269; labor markets in, 12–13, 152–153, 184, 223–226, 232; migration history and immigration policy in, 149, 150, 151, 184; taxation policy of, 109; travel and leisure in, 192–194, 197
- evolutionary biology, 131, 187
- exchange rates, 146
- executive wages and salaries: controversial nature of, 98–99, 100; market power's effects on, 28, 95, 97–98, 99, 100–101, 110–111, 116, 126; packages and hiring, 97, 98–100, 110; talents and abilities and, 97, 99, 228
- experimentation: in biotechnology, 57, 72; in national labor policy, 223–226; research steps of, 222–223
- exploitation: of consumer biases, 62–63, 272; of monopsony power and wage abuse, 86–90, 200, 202–203
- exploration, global, 238
- Facebook: customer data use by, 256, 272–273; lack of competition with, 19, 39, 248, 250, 256, 263–264, 272–273; profit ratio of, 35
- family structures and support, 159
- federal competition authorities, 260–261, 264, 268–269, 270, 271–274
- Federal Reserve System, 268, 270–271; economists and theory of, 31, 60; monetary policy of, 170, 171, 270
- Federal Trade Commission, 244, 262, 268, 270
- financial industries: central banks, 167–169, 170, 171, 268, 270; managers in, and salaries, 111–112, 116; monopolies within, 16, 44–45; regulation of, 273, 274
- financial statements, firms, 58, 221, 273
- first-mover advantage: data collection and learning for, 52, 209; for new markets and services, 16, 18–19, 44, 48, 52, 185, 202
- fixed costs, 32–33, 59
- flexible work: of gig economy, 196, 198–204; national labor policies of, 223–226
- food expenditures, 176, 182, 190
- France, 184
- free entry of competitors, 191–195
- free goods: illusion of, 39, 63–64, 256, 265, 269; information as, 257–259

- free market economy: competition in, 26, 31–32, 162, 235, 236, 247, 251, 252, 253; schools of thought on, 236, 245–252, 253; theory of, 26, 234–235, 236
- free-rider problem, 40, 41, 223
- Friedman, Milton, 92, 247, 248–249
- games, 25–26, 94, 102–103, 111–112
- gas prices, 145–146
- Gates, Bill, 269–270
- gender, and labor participation, 81, 82, 184
- geography and economics. *See* globalization; migration of labor; spatial sorting, as wage effect; urban wage premium
- gifts: cards and services, 192–194; personal charitable, 199–200
- gig economy, 196, 198–204
- Gilded Age, 16, 19
- globalization: economic interdependence of, 17–18, 19, 211; and importing inequality, 133–136; as market power amplifier, 52–54; via technological progress, 8, 15, 53, 132, 135, 136, 175–177; US retail challenges amid, 31; wage inequality from, 132, 135–136
- Gold Watch myth, 11–12, 143–144, 147, 150
- Google: algorithm sharing by, 255, 256, 258; apps and features of, 63, 64, 218, 255, 256; investment focus and market power of, 59, 264; labor clauses at, 89; search engine functionality of, 210–211; translation tools of, 51, 205–206
- government expenditures: financing of, and inflation, 168–169; innovation incentivization, 241–242; research investments and, 65–66, 218
- government interventions. *See* antitrust policy; political influence; regulation
- Great Depression, 15–16, 182
- Great Recession: economy of, 161, 164, 194; markup trends after, 28–30; unemployment in and after, 80, 224
- gross domestic product (GDP): charitable giving within, 120; elements, labor and capital, 72, 73, 76, 77, 79–80, 83, 218; growth and loss rates of, 83, 163; intangible assets valuation, 57; per capita figures, 178–179; welfare costs in, 270
- gross output, 73, 191
- guilds, 92, 94
- Haag, Matthew, 102–103, 107
- Harberger, Arnold, 247, 248
- Harvard University, 117, 120, 121, 246
- Hayek, Friedrich, 26, 251
- health outcomes: with lack of care, 247–248; with lack of regulations, 65, 237; technological progress and well-being, 175–176, 177, 178; white American declines, 159–161
- high-skilled work. *See* skilled work and workers
- hiring: and executive packages, 97; in gig economy, 198; market power interplay with, 55, 82, 88, 124, 182; in monopsony power, 86–90; résumé review during, 206–207; seasonal variation in, 146–147. *See also* job creation
- horses, 212, 213–214
- hours worked: gig economy options, 199–200, 203–204; labor vs. leisure, 195–198, 212–213
- household labor: by at-home workers, 81, 82, 182; division and specialization, 187–189
- housing: construction eras, 154–155; costs of, 137, 158, 170
- human behavior: biases and manipulation in, 62–63, 64–65, 178, 206–207, 272; courtship, 96–97; evolution and survival, 131, 187–189, 212; regulation of, 65. *See also* consumer behavior; health outcomes
- human capital, 55, 56, 57, 113
- hyperinflation, 168

- IKEA, 58, 180–181
- immigration and emigration: anti-immigrant sentiment and policy, 159, 184; history and costs of, 149–150, 151; workers and incomes, 151, 155, 159
- inactive workers, 81, 82, 183, 213
- income data and statements, 58, 219, 220–221, 273
- India, 134–135, 176–177, 178–179
- industrialists, American, 16–17; foundations and philanthropy of, 16–17, 119–120; monopolistic behavior by, 16, 26, 246, 269
- Industrial Revolutions: First, 56; Second, 15, 56, 177, 179–180; Third, 56, 60
- inflation, 168, 170, 270; and falling interest rates, 167–172; financial indexes, adjusted, 161
- information and communication technology (ICT): interoperability in, 265–266; IT departments' logistics and productivity, 7, 123; job skills and wages, 131–132, 140–141, 156; as market power amplifiers, 43, 47, 56. *See also* technological change and innovations
- innovations. *See* patents; product/service innovations; technological change and innovations
- input-output matrix, 210–211
- intangible assets: ideas as, 58, 66; as market power amplifiers, 54–60; valuation challenges for, 57–58, 251
- intellectual property: ideas as intangible assets, 58, 194; patents, 66, 181, 239–241, 257, 258, 273
- interest rates, 167–172
- intermediate inputs, 72–73, 191
- Internet Explorer (browser), 265, 266–267, 269–270
- interoperability, 257, 261, 265–267, 272
- investing and investments: by financial managers, 111, 112; for firms' growth, 25, 42, 43, 44–46, 54–55, 76–77, 113, 166–167; government-level, 65–66; in intangibles, 54–59, 66; in “moat-protected” entities, 23, 25, 45, 52, 58–59; personal, 39, 164, 171–172; in R&D, 54–55, 56, 57–59, 115–116, 189; in startups, and risk, 43, 56–57, 165, 167, 190. *See also* capital share and investment; labor share and investment; overhead costs; stock market
- J. C. Penney, 109–110
- job changes and durations: duration rates, 11–12, 143–144, 147–148, 232; labor market turnover, 229–230; occupation switch challenges, 183, 186–187, 212; relocation/migration rates, 12, 148, 150–151; upward promotions, 12, 152–153, 157–158. *See also* hiring; job elimination; job hunting
- job creation: firms' influence in, 13, 75, 230; human capacity for, 182–183, 212, 214; national policies of, 223–226; replacement as, 179, 229–233; reports and data of, 228–233. *See also* hiring
- job elimination: vs. lower-wage options, 180, 183, 214–215; and older workers, 184, 186–187, 198, 232; via technological displacement, 179, 180, 181, 182, 183, 186–187, 214–215, 231
- job hunting: résumé review, 206–207; by younger and older workers, 12–13, 157–158, 186–187, 232
- job polarization: from technological change, 156–158, 215; from wage inequality, 139–142, 158–159
- job security: employment security, and unemployment, 231–233; via outsourcing firms, 127; policy changes, 12–13, 143, 223–224; as social stabilizer, 152–153; and worker loyalty and rewards, 11–12, 143–144, 147–148, 152–153
- Kaldor, Nicholas, 71–74, 76, 191
- Keynes, John Maynard, 197
- knowledge economies. *See* service and knowledge economies

- labor force participation: gender and, 81, 82, 184, 231; jobs and workers in, 80–82, 157, 182–184, 213, 224, 228–233; leisure vs., 195–198, 213; low wage effects on, 83–84
- labor markets: college education rates in, 122, 123–124; competitive wages/benefits in, 74–75, 122, 123–124, 129, 130; dynamism of, 11–13, 144, 152–153; equilibrium in, 82, 182–183, 226; labor force participation rates, 80–82, 83–84, 113, 157, 182–183, 184, 213, 224, 231; migration in, 148–153, 156, 180; mobility within, 12, 13, 89, 92–93, 102, 108–109, 144, 148–153, 180; monopsony power in, 86–90, 200; policy experimentation in, 223–226; seasonal variation in, 146–147; supply and demand in, 82, 83–84, 99, 100, 122, 124, 141, 146–147, 152, 157, 182–183, 203, 226, 231, 233
- labor share and investment, 72, 80, 191; calculation of, 73–74, 78–79; within profit paradox, 18, 75; trends and rates of, 5, 10–11, 13, 18, 71–75, 77, 79–80, 83, 87; wages and, 72, 73–75, 80, 83, 88, 180, 195
- labor unions, 92, 94, 144
- language translation tools, 51, 205–206
- lawyers, 92–93
- learning processes: of humans, 212; of machines, 206, 209, 254–255
- learning-related economies of scale, 51–52, 209
- legal privilege, monopoly rights as, 238–239
- legal system and norms, 234, 260, 262
- leisure time and activities: vs. labor, 195–198, 212–213; travel, 150, 192–194
- Leontief, Wassily, 210–213
- licensing, 89–94, 201, 247–248
- life expectancy, 159, 160–161, 176, 177
- lobbying: for fair wages, 203; pro-business/anti-regulation, 253–254, 269; by professional associations, 247–248; for sabotage monopoly, 60
- local markets, 84–86, 88, 136–139
- logistics management: data use for, 47, 208; by dominant retailers, 46, 47; outsourcing of work and, 128; technology and productivity in, 7, 85, 180, 181, 208; translation and communication for, 206. *See also* distribution channels
- low-skilled work and workers: automation and displacement of, 123, 140, 179, 182, 214; mix, vs. skilled, 9, 123, 124, 128, 130, 137–139, 140, 214–215; substitutability of, 87–88, 123, 186, 212, 214; wage levels of, 201, 202–204, 214–215
- luck, 104–111, 111–112
- Luddites, 175, 179–180, 182, 186
- lump of labor fallacy, 182–187, 191, 214, 231
- machine learning. *See* artificial intelligence and machine learning
- Malthusian theory, 149, 183–184
- manufacturers, and manufactured goods: in American economic history, 71–72, 155–156; market share and monopolies of, 27; technological revolutions of, 15, 56; worker skill levels in, 123, 130, 140; in world history, 179, 190–191
- marketing and advertising: investments and outcomes, 55, 58; for product differentiation, 50–51; in social media platforms, 39, 256, 260, 269
- market power: amplifiers of, 52–54, 243; artificial intelligence and, 52, 207–215, 257, 259–260; defending, 25, 98, 132–133, 166, 185, 202, 208, 240; demand advantages for, 47–51, 208–209; via economies of scale, 43–52, 55, 59, 132; harms of, 98, 121, 233, 246; via human manipulation, 62–65; and inflation, 169–172; via investments in intangibles, 58–59; from killer acquisitions, 39, 194, 264; from labor routinization, 141–142; learning advantages for, 51–52, 209; licensing as, 89–94, 201, 247–248; measurement of, 27–28, 32–33, 54–55, 216, 221–228; policies for ameliorating/improving, 260–271; and political influence, 253–254; study of history and

- market power (*continued*)
evolution, 27–32, 54–55, 71–74, 79–80, 166, 169, 221, 252, 260; superstar phenomenon and, 8, 105–114, 124, 158, 215; supply advantages for, 43–47, 61, 145–146, 208; technology paths to, 7, 16, 18–19, 24–25, 27, 31, 42–67, 185, 215, 240–241, 259–260; temporary, 24–25, 26, 59, 66; wages effects of, 28, 33–35, 61, 74–75, 77, 78–84, 95–96, 101–102, 116–117, 121, 132, 160–161, 163, 164, 203, 213. *See also* antitrust policy; competition; markets; market share; monopolies
- markets: cost fluctuations in, 145–146; decreasing competition, 8–9, 11, 18–19; expanded via new technologies, 15–16, 185, 255–256; and first-mover advantage, 16, 18–19, 44, 48, 52, 185, 209; history and evolution of, 188–189, 190, 234; size, and firms' reach, 7, 8, 132, 165–166, 190; winner-take-all, 7–8, 26, 31–32, 55–56, 59, 103–104, 108, 235, 255. *See also* barriers to market entry; free market economy; market power; market share; specialized markets; stock market
- market share: growing, via innovations, 181; of large firms, 27, 166–167, 185; pricing links, 30, 145–146
- market thickness, 48, 208–209
- markets: market power and trends of, 28–31, 30, 32, 47, 54, 58–59, 60–61, 77, 78, 79, 139, 170–171; in monopolistic industries, 44–45
- mean reversion, 112–113
- medical devices: pricing, and nature of markets, 30–31, 161–162; suppliers' market shares, 27
- medical professionals: licensing of, 90–92, 93–94; market competition of, 247–248; salaries of, 104, 113, 116
- Mercer County, New Jersey, 154–155
- mergers. *See* acquisitions and mergers
- message apps, 263–264
- Microsoft, 265, 266–267, 269–270
- middle-paying occupations, 139–142
- migration of labor: costs of, 149–150; in economic transitions, 71, 155–156; international, 150–151, 180; vs. labor mobility, 148–153; migrant labor vulnerabilities, 88; rates of, 12, 148–149, 152
- “minimum wage plus two” wages, 200–201, 202
- models and modeling, 98
- monetary policy, 168–169, 170, 171, 268, 270
- money in politics, 254, 269, 270
- monopolies: of American makers, 16, 26, 27, 44–45, 242; antimonopolist contrasts, 25–26, 239–240, 242, 243–274; in history, 16, 26, 237–242, 246, 269; idealization of permanence of, 23, 25, 27; licensing as, 90–94, 201, 247–248; local, 92, 94, 267; market power of, 23–25, 44–45, 86, 238–239, 240, 242; natural, 43, 265; pricing freedom in, 44–45; sabotage, 60; of social media platforms, 19, 256; temporary/leapfrogging, 24–25, 26. *See also* antitrust policy; patents
- monopsony power, 86–90; reactions against, 94, 261; squeezing suppliers, 89, 132; wages effects of, 86–89, 200
- Moore's law, 169–170
- Morgan, J. P., 16, 26, 44–45, 269
- mortality rates, 160
- national accounts, 73
- natural monopolies, 43, 265
- Netscape (browser), 265, 266–267
- network externalities, 48–50, 208, 256–257
- network of input-output relations, 210–211
- noncompete clauses, 88–89
- nonrival goods, 257–259
- norms, legal, 234, 260, 262
- Norway, 218–219
- Norwegian (airline), 180, 181
- older workers: economic mobility challenges of, 156–157, 158, 183, 186–187; labor

- market, jobs, and retirement, 12–13, 152–153, 157–158, 183, 186–187, 198–199, 224, 232; technology use and savvy, 156, 158, 186
- oligopolies, 24
- oligopsony, 87
- online auctions, 48, 50, 208
- open source data, 242, 255, 258
- opioids, 119, 159, 221–222
- Orwell, George, 15, 26, 176, 182
- outsourced work: environments of, 3, 10, 56–57, 127–130; increased trends of, 129, 130–133; in-firm inequality examples, 126–133; of production, 85, 128, 132; staffing for, 127–129, 130–131, 132; in tech support, 2–4, 9, 129–130, 132
- overhead costs: considering, with market power, 32–33, 54–55; investments in, 54–59
- parallel services, redundancy, 44, 48, 52
- pass-through: business income, 114; complete, 145; and exchange rate impacts, 146; incomplete, 145–146, 147
- patents, 66, 181, 238, 239–240, 257; inverse, for data, 258–259; rates of invention, 240, 241–242; regulation of, 273; system abuse and trolling, 240–241, 259; system wastes, 242
- payroll: costs, and profit ratios compared, 34, 34–35; management, 130–131
- personal information collection and tracking, 63–64, 210, 217–218, 220, 255–256, 272–273
- pharmaceutical industry: drug research and patents in, 118–119, 242, 257; killer acquisitions by, 39; pricing, and nature of markets, 30–31, 161–162, 257; profit to payroll ratios in, 35, 155; startup investments, 56–57
- philanthropic giving: by American industrialists, 16–17; of architecture and art, 17, 118; foundations for, 17, 119–120; personal gifting, 199–200; to universities, 117, 118, 120–121; voluntary nature of, 120–121
- physicians, 90–92, 93–94, 104, 113, 116, 247–248
- platforms: economies of scale in demand, 47–51, 208, 256–257; interoperability, 266–267, 272; as marketplaces, 48–49, 208–209, 256
- political influence: market power and, 253–254, 268–269, 270; money’s role in, 254, 269, 270
- polls, 217
- populations and population data: baby boom generation, 157–158, 160; growth, and wage data for, 134–135, 136; health outcomes for, 159–161; heredity of, 112–113, 131; Malthusian theory on, 149, 183–184; migration history of, 12, 149–150, 151; official collection of, 218
- poverty rates and reduction, 176–177, 178–179, 234
- price discrimination: algorithmic collusion and, 209–210; antitrust law against, 46
- price setting, 40–41, 117, 209–210
- pricing: of cheap substitutes, 60; and competition levels considered, 24, 42–43, 44, 46, 47, 54, 66, 85, 145–146, 147, 166, 181–182, 191–192, 195, 244, 247; competitive, 47, 64, 66, 145–146; amid cost cutting, 60–61, 85, 180–182, 185; harms to customers, 40–41, 43, 50, 61, 98, 146, 185; labor market effects of, 146, 147; maximization of, and revenue effects, 23–24, 146, 243; in monopolies, 44–45, 238, 243; and profit paradox, 60–61, 66–67; strategy, and customer choices, 42–43, 46, 66–67, 78, 85, 145–146, 195, 209–210, 244
- privacy: of corporate information, 221, 236, 273; rights, 219–220; as tool in market power, 272–273. *See also* transparency
- prizes, 241–242
- production cycles: enabling retail responsiveness, 47, 208; ties to labor needs, 146–147

- productivity: agglomeration benefits of, 136–137, 138; personal, labor, 12, 99, 188; via technology improvements, 7, 8, 55–56, 123, 124, 131–132, 141–142, 213; wages and, 4–6, 5, 99, 213
- product/service innovations: cost savings, results of, 180–181; creation and marketing examples, 192–194, 205–206; free entry to market, 192–194
- professors, 115–118, 121
- profit paradox, 18, 59, 75, 185, 253; pricing and markups and, 60–61, 66–67, 243–244; in stock market vs. real economy, 161–164
- profits: excess, 24, 38, 66–67, 75, 194, 243–244, 270; via markups, 30, 44–45, 77, 78; raise trends, vs. labor and capital shares, 10–11, 18, 75, 76, 172; rate calculation of, 33; rise of market power and, 32–35, 59, 77, 78–79, 98, 162, 166–167, 243–244; supplier struggles, 52, 89; US firms' averages, 33, 34; via volume sales, 30, 89, 145–146
- property prices, 154–155, 158
- property rights, 17, 234–235, 240
- public domain information, 220, 242, 255, 257–259
- Purdue Pharma, 119
- quality issues, in data, 226–228, 259
- quality of life: division of labor improvements for, 188; leisure aspects of, 195–198, 212; public opinion about, 178–179; technology and modern improvements to, 175–176, 177
- quantitative analysis, 211
- railroads, 16, 44–45, 59, 266
- real income, increases, 182, 185
- redistribution of wealth, 164
- regression to the mean, 112–113
- regulation: anti-regulation and self-regulation views, 236–237, 247–248, 253–254, 261–262, 269; antitrust and pro-competitive policy, 159, 185, 234, 238, 243–252, 268–274; behavioral biases and, 64–65; for national services, 266; for norms and success, 234; for safety and health, 235–237, 247–248
- rent extraction, 238–239, 274
- reputations, corporate, 19, 202, 235–236
- research and development (R&D): for employment data collection, 218; investments, and market power, 54–55, 56, 57–59, 115–116, 118; pharmaceutical, 118–119, 189, 257
- research and researchers: academic stars, 115–116, 118; for competitive markets, 264, 267, 270–271; data sharing in, 258–259; scientific methods used, 222–223, 226, 227–228
- résumés, 206–207
- retail sector: clothing stores in, 84–85, 109–110; domestic retail challenges in, 31; firm dominance, examples of, 42–43, 46–47, 247; firms' failures in, 109–110, 112; markups and pricing in, 30, 46; supply returns to scale, 45–47, 208
- retirees, 154–155, 156, 157, 158
- retirement policies, 184, 232
- revenue, 72–73, 193
- ridesharing apps, 7, 196, 198–203, 267
- risk and reward: assessment methods for, 125–126; of investing in startups, 56–57, 165, 190; of labor experimentation, 138–139, 189
- risk-free rate, 169, 171, 172
- rival and nonrival goods, 257–259
- robber barons, 16, 19, 246
- Robinson, Joan, 86–87
- Rockefeller, John D., 16, 26, 119–120
- Roosevelt, Theodore, 59, 119–120, 246, 252, 269
- Rosen, Sherwin, 103
- Rosling, Hans, 178–179
- sabotage: data tampering as, 259; as monopoly type, 60
- safety regulation, 65, 235–237
- Samuelson, Paul, 72, 153

- saving, households, 164, 171–172
- Schumpeter, Joseph, 24, 59
- scientific research methods, 222–223, 226, 227–228
- S-corporations, 114
- search engines: functionality of, 210–211; web browser antitrust cases, 265, 266–267, 269–270
- Sears, 45–46, 112
- seasonal variations, 146–147
- selection bias, 227–228
- self-driving cars, 51–52, 209, 255–256, 258–259
- self-regulation, 236–237, 247–248, 253–254
- sellers' markets, and thickness, 48, 208
- service and knowledge economies: division of labor in, 128–129, 130, 138, 189–191; gig economy within, 196, 198–204; history and transitions to, 71, 156, 184–185, 197; hours worked in, 196–197; job duration in, 144; low-skill labor substitutability, 87–88, 123, 186; outsourcing in, 126–131; skilled labor substitutability, 123, 186
- service innovations. *See* product/service innovations
- Sherman Antitrust Act (1890), 244, 250, 262
- Simpson's Paradox, 133–136, 134
- skill-biased technological change, 122–123, 140–141, 214–215
- skilled work and workers: investments in human capital, 55, 56, 113, 131–132; licensing for, 89–94, 247; mix, vs. unskilled, 9, 123, 124, 128, 130, 137–139, 140, 214–215; substitutability, 123, 186; “superstar” economics and, 7–8, 102–114, 115–118, 124; wages and salaries of, 6–7, 7–8, 88, 97–114, 121–122, 123, 124–125, 126, 129–130, 131–132, 137–138, 140, 155, 183, 214–215
- smartphone industry: contracts and competition in, 266; patent law in, 240; product choices and features, 62–64; tech support and customer service for, 1–4
- Smith, Adam, 26, 92, 128, 132, 191, 244
- social and personal skills, 2–4, 125–126, 207
- social media: addiction to, 64–65; auctions, 50; consumer data and privacy issues in, 256, 272–273; influencers, followers, and subscribers of, 103; as low-competition industry, 19, 27, 39, 250, 256, 272–273; markets and market share of, 13, 27, 248, 256, 263–264
- Spain, 80, 232
- spatial sorting, as wage effect, 137–139, 154–158
- specialized labor, 189–190; within division of labor, 187–191, 211; exploitation and monopsony power of, 87, 88; geographic hubs for, 138; job displacement of, 156, 182; job polarization and, 140–141; superstar phenomenon and salaries of, 115–118; technology-related, 131–132
- specialized markets: within globalization, 54, 132; markups and pricing in, 30–31; platforms for, 49–50
- stabilizing factors: for inflation, 167, 168–172; job and social stability, 152–153; regression to the mean, 113
- stakeholder focus: vs. CEO pay, 98, 101; for rethinking market power, 253–254, 261–262, 268
- standards. *See* quality of life; technological standards
- startups: bought as killer acquisitions, 39, 194, 264; falling rates of, 13, 165–167; free entry illustrations, 192–194; investments in, 43, 56–57, 165, 167, 190; of tech industry, 13, 39, 43, 165, 167
- statistical accounts, national, 218–219
- statistics. *See* economic analysis; employment statistics; Simpson's Paradox; statistical accounts, national
- Stigler, George, 247, 248–249
- stock market: economic power of, 162–163, 164, 165; exchanges of, 49; pandemic and unemployment effects on, 161, 163, 164, 216; vs. real economy, 161–164
- subscription model, 62, 256
- subsidization model, 9, 200–202

- substitute goods, 60, 237–238
- substitute labor, 87–88, 123, 186, 212, 214
- substitution effect, 197
- superstar phenomenon: in academia, 115–118, 121–126, 141; economic details of, 7–8, 158, 215, 248; and executive pay, 109–111, 116; in financial management, 111–114; immigrant successes, 155, 159; in sports and entertainment, 103–109
- supply chain management: ethics aspects of, 202, 203; market power amplifiers, 52, 61; solvency issues in, 221
- supply-related economies of scale: business locations and, 145–146; buying and supplier power and, 52, 61, 89, 132; supply returns and, 43–47, 145–146, 208
- survival bias, 227–228
- switching costs, 52, 65
- taxation policy: charity deductions and, 120–121; for corporations, 114, 243–244; for high-income earners, 108–109; on labor income, 26, 220; rent extraction and, 239
- tax returns, transparency, 219, 220
- tech industries: lobbying by, 254; market power of, 18–19, 132, 240–241, 255–257, 264; markup trends in, 29; noncompete clauses of, 88–89; personal and private data collection by, 218, 219–220, 255–256; profit-to-payroll ratios in, 34–35; self-regulation by, 248; social media addiction and, 64–65; startups of, 13, 39, 43, 165, 167; workers' skill and pay levels in, 3–4, 9–10, 123–124, 129–130, 132, 156. *See also* patents; social media; technological change and innovations
- technological change and innovations: age- and era-defining, 8–9, 13–14, 15–16, 18–19, 56, 63, 155–156, 175, 179–180; gig economy as, 198–204; and globalization, 8, 15, 53, 132, 135, 136, 175–177; growing business sizes, 100–101; growing market power, 7, 16, 18–19, 24–25, 27, 31, 42–67, 103, 141–142, 170–171, 208, 215, 259–260, 265; incentivization for, 241–242, 258; increasing productivity, 7, 8, 55, 123, 124, 131–132, 141–142, 180, 213–214; job/wage polarization causes, 140, 156–158; markups for, 29–30; platforms, and adoption, 49, 50; skill-biased, 122–123, 140–141, 214–215. *See also* tech industries; specific firms and inventions
- technological standards, 265
- telecommunications industry: mergers and breakups in, 245, 248, 265; monopolies in, 23–24, 238; spectrum auctions in, 251
- telephone surveys and numbers, 216–217
- Telser, Lester, 249
- Tesla, 242
- textile industry and labor, 175, 179–180, 181
- Toyota, 86–87
- trade history, 15–16, 234, 238
- trade liberalization. *See* globalization
- translation tools, 51, 205–206
- transparency: data policy for, 219, 220–221, 272–274; lack of, in self-regulation, 236–237, 248; social and policy benefits of, 219, 220–221, 273
- travel and tourism, 150, 192–194. *See also* airline industry
- tuition, 117, 122
- Uber, 7, 196, 198–203, 267
- underemployment: examples of, 3–4, 122, 124–125, 151; with stifled opportunity, 152–153
- unemployment and unemployment rates: duration issues, 219, 224–225, 231, 232; in Europe, 12–13, 80, 184, 223–226, 232; flexible labor policy for, 223–226; labor force participation and, 80–82, 182–184, 224, 231–233; pandemic effects of, 80, 163, 230, 232; surveys on, 216–217; in United States, 80–81, 163, 184, 216–217, 230, 232
- unskilled labor. *See* low-skilled work and workers

- Urban Outfitters, 84, 86
- urban wage premium, 88, 136–139
- US Constitution, 239
- US Department of Justice, 244, 245, 250, 268, 270
- US Department of Labor, reports, 228–229
- value added, 72–73, 172, 191, 270
- vertical integration, 52, 61, 264
- wage and income inequality: from college premium, 121–126, 141; within countries, 133, 134, 135, 136, 155; across firms, 9–10, 126, 131–133; within firms, 10, 101–102, 126–133; geographical, 88, 134–135, 136–139, 176–177; health and mortality outcomes of, 160–161; historical examples of, 95–97, 130–131; importing, via globalization, 132, 135–136; from job polarization, 139–142, 215; market power's effects on, 95, 101, 121, 124, 126, 139, 160–161, 164; spatial sorting effects of, 137–139, 154–158; technological change, effects of, 8–9, 131–132, 183, 214–215; trends and rates of, 10–11, 83, 126, 131–132, 134–136, 138, 160–161, 219; wage and income distribution with, 82–83, 113, 134, 139–142, 164, 220. *See also* wages and salaries
- wages and salaries: in competitive markets, 74–75, 97–114, 115–118, 123, 201; in customer service, 3–4, 9; distribution, 82–83, 139–142; education levels and, 3–4, 5–7, 6, 117, 121–126, 141, 215; in gig economy, 200–202; labor supply elasticity and, 82, 182–183; location influences of, 88, 95, 136–139, 150; market power's effects on, 28, 33–35, 61, 74–75, 77, 78–84, 94, 95, 99, 101–102, 110–111, 116–117, 121, 124, 126, 152, 163, 164, 213, 215; under monopsony power, 86–90, 200; noncompete clauses and, 88–89; outsourcing's effects on, 129–131; productivity and, 4–6, 5, 99, 213; profit ratios compared, 34–35; real income increases, 182, 185; for skilled work, 6–7, 7–8, 88, 97–114, 121–122, 123, 124–125, 126, 129–130, 131–132, 137–138, 140, 155, 183, 214–215; stagnation of, 83, 113; in tech industries, 3–4, 9–10; trends and rates of, 4–6, 5, 10, 11, 72, 83–84, 113, 129, 219. *See also* executive wages and salaries; wage and income inequality
- Wald, Abraham, 227–228
- Walmart: retail business, pricing, and profit, 24, 30, 46; supplier relations, 52, 89; technology and logistics of, 46, 208, 218
- wealth accumulation: in American history, 16–17; data sharing policy and, 219, 220; effect on hours worked, 197; by foundations, 17, 19, 119–120; via labor, 191; modern challenges for, 164
- Wilson, Woodrow, 244, 245–246
- Windows (operating system), 265, 269–270
- work, future of: artificial intelligence and machine learning in, 206–209; impossibility of knowing, 207–208, 214; skills, jobs, and wages in, 212–215
- work, state of: facts and data collection on, 216–233; as loser in economy, 11, 13, 18; market power's effects on, 35, 75, 172, 210, 213, 216; market transformations, 11–12, 19–20, 155–156, 212; technology-induced problems and solutions, 14–15, 212
- workers. *See* labor markets; licensing; work, state of
- working conditions: and hours worked, 195–198, 212–213; improvement demands, 179–180, 186; in monopsony power, 88, 200
- World War II, 95–97, 102, 133, 227
- young workers: job hunting, and labor markets, 12–13, 157–158, 224; unemployment of, 232
- Zara (brand), 30, 47, 85, 208
- zero-hours contracts, 200
- zero prices, 63–64