


The Darker Side of Information Technology

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by mordecai kurz

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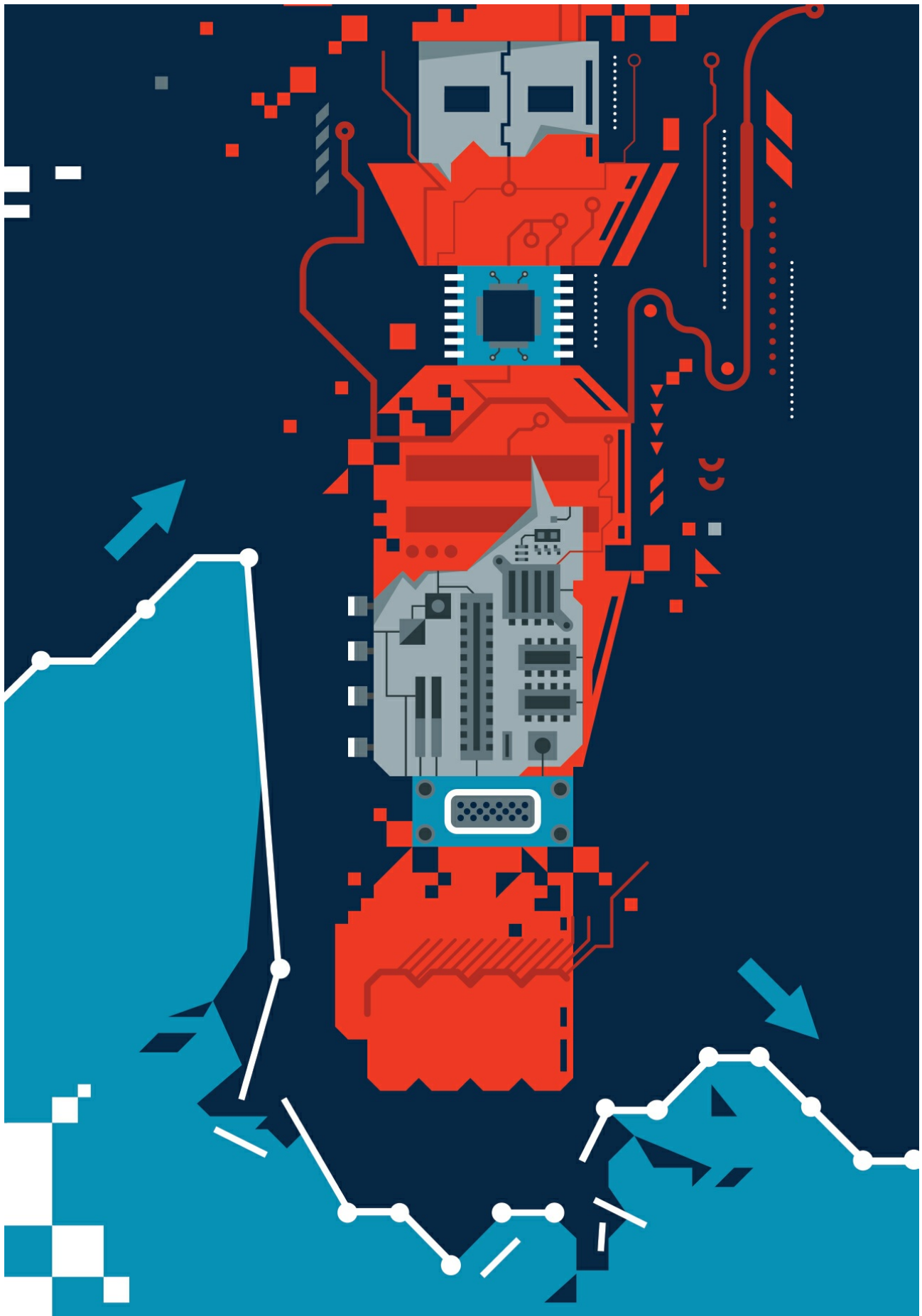
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In the ongoing divisive debate about the health of the American economy and how to improve it, virtually everyone seems to agree on one thing: information technology has been spectacularly successful in driving the economy forward, and offers hope for accelerating growth and raising living standards for those who have been left behind. In fact, a close look at the impact of IT in the past half century leads to very different conclusions. I would argue that it has proved a mixed blessing, causing considerable collateral damage that can and should be contained.

Since the early 1980s in the advanced economies — in particular, in the United States — median wages have lagged far behind productivity, while growth in GDP has been tepid at best. This malaise, however, has not been echoed in the fortunes of American business and its owners: both corporate profits and stock prices have risen sharply. And by no coincidence, wealth and income inequality have risen as well.

Explanations for the twin problems of slower growth and rising inequality run the gamut from globalization to inadequate investment in infrastructure, both physical and human. But my own recent research suggests these changes were primarily caused by the rise of modern information technology. If you're skeptical, it's understandable: technological change is almost always seen as part of the solution, not part of the problem. But when you drill down to examine how markets and legal institutions divide the bounty created by advances in IT, and how successful IT companies have strong incentives to limit technological change by outsiders, it's clear that the conventional wisdom is misleading.

You know some of this story well. The PC, the internet and mobile technology have transformed communications, opening the door to disruptive industries reaching from social media to online retailing to urban transportation. Meanwhile, the rise of other key technologies ranging from genome sequencing to artificial intelligence could not have happened without revolutionary changes in information technology. And there is every reason to believe that the digital revolution that went into high gear in the early 1980s will continue for some time, diffusing into every industry and almost every human endeavor.



Few people would want to slow the pace of change in information technology and related fields. Some do fear the potential for harm, particularly from advances in genetic engineering.

But in forming the near-consensus that technological change is the best hope for curing what ails, little attention has been paid to the damage arising from its interplay with market economies.

IT has enabled the rapid growth of legal monopoly power. And once such power is gained, a combination of legislated intellectual property protection, trade secrets, economies of scale, first-mover advantages and network effects make it hard to challenge. That, in turn, tends to choke off innovation by outsiders. Arguably worse, the rapid growth of monopoly profits has dramatically increased inequality in wealth and income.

An Econ Refresher

Let me slow down here and revisit some basics. I use the term “monopoly power” in the broadest sense: a firm with monopoly power can affect its profitability by changing prices. In technical terms, this includes pricing discretion through monopoly, oligopoly, monopolistic competition or monopsony power over suppliers. A firm’s monopoly power arises from barriers to entry by potential competitors, which allows it either to raise prices above the cost of producing an extra unit of output or to lower the price it pays suppliers so as to increase its profitability.

Some forms of behavior that create monopoly power, such as conspiring with rivals to limit output, are crimes. Moreover, the government has discretion to challenge through civil suits a wide variety of actions that serve the same end — among them, mergers and acquisitions of potential rivals.

But some sources of monopoly power are simply part of the familiar landscape of modern capitalism. A firm can raise barriers to entry by building positive brand identity through quality control or service or advertising. And some barriers are even applauded: barriers built on patents, copyrights and trade secrets are seen as rewards for innovation, without which the goose would cease to lay the golden eggs. Thus we are inclined to cheer on the latest Silicon Valley “unicorn” — a young company valued at a billion dollars by virtue of ownership of intellectual property or “first mover” advantage that disproportionately rewards the first company to reach the market.

The source of monopoly power matters a lot in terms of what could and should be done about it in a free-market economy — and we’ll get back to the issue. But the source matters relatively little in analyzing the economywide impact on growth, productivity and wealth/income distribution.

Measuring Monopoly Power

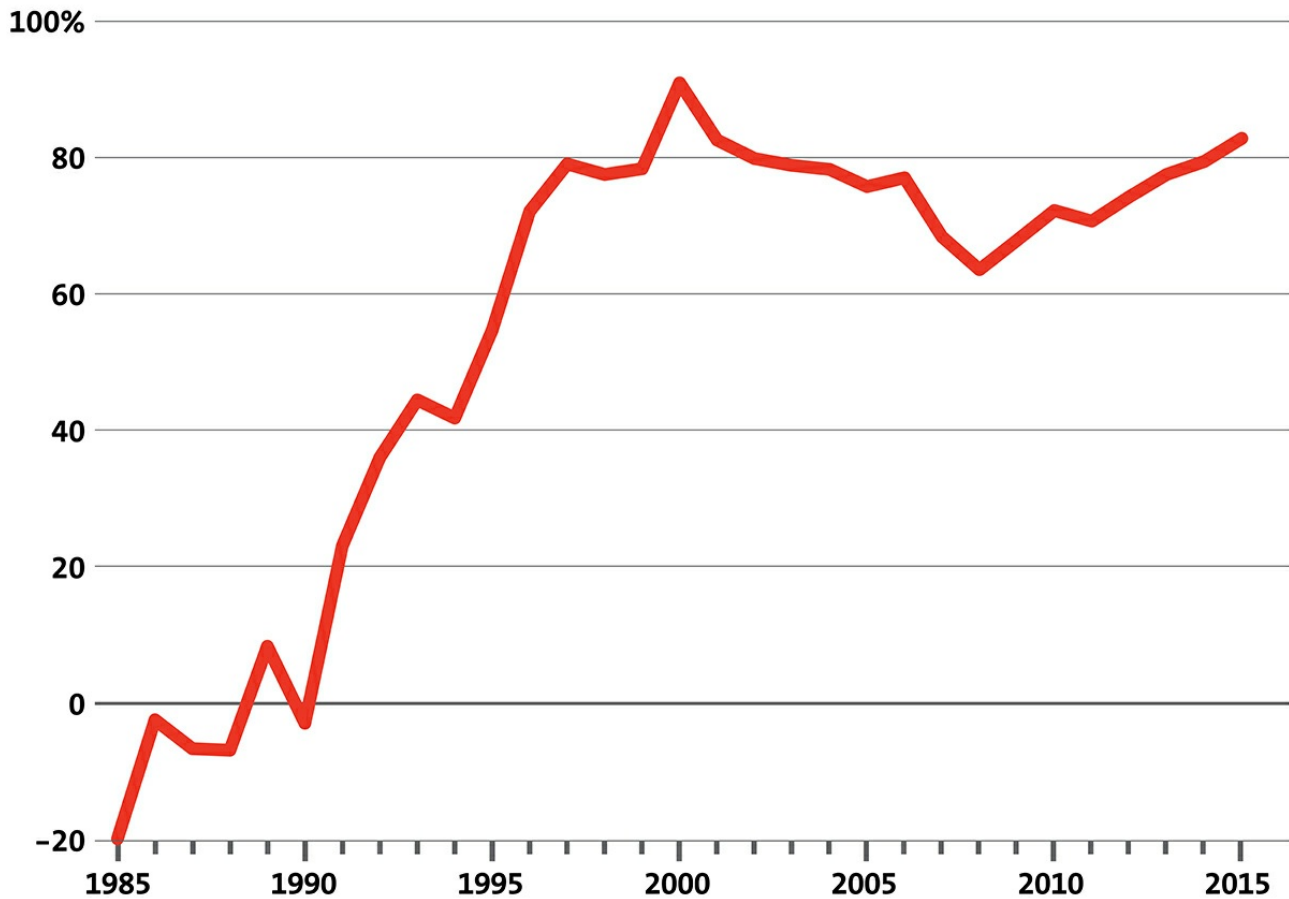
As noted above, monopoly power makes it possible to price products higher or pay suppliers less with the goal of generating profits that exceed normal competitive-market returns on capital. Monopoly profits translate into monopoly wealth: above-competitive returns increase the value of a company’s stock above the market value of the capital it employs. Both stock prices and profits fluctuate, but if profits and stock prices rise much above their normal levels for a long period, common sense suggests this is a reflection of monopoly power.

In a recent paper, “On the Formation of Capital and Wealth,” I estimated the monopoly component of U.S. stock values for 1950-2015, which I call “monopoly wealth,” and the monopoly component of corporate profits, which I call “monopoly profits.” Although the reliability of individual company estimates decreases with market fluctuations, I mostly focus on the aggregate values of all U.S. companies whose securities trade on public exchanges. Such estimates are reasonably accurate – or at least accurate enough to serve as a guide to the magnitude of monopoly wealth.

During the hardware innovation phase of the IT revolution (1945-70), monopoly wealth rose, reaching an estimated 43 percent of the total market value of stocks in 1968. This wealth did not last. Analyses of the economic malaise of the early 1970s generally emphasize the productivity slowdown and the puzzling rise of inflation in spite of the existence of considerable surplus productive capacity. But the effect on profits and private wealth was shattering: total monopoly wealth collapsed from \$372 billion in 1968 to minus \$590 billion (yes, minus) in 1974. In other words, stocks became less valuable than the competitive market value of the capital invested.

A new era began in the 1980s, when the “software innovation” phase of the IT revolution began. IBM adopted Microsoft’s DOS as the PC operating system in 1981, the military communication network (Arpanet) adopted the TCP/IP protocol in 1983 that accelerated development of what we now know as the internet and Microsoft went public in 1986.

MONOPOLY WEALTH AS A PERCENT OF TOTAL STOCK MARKET VALUE



SOURCE: The author

As seen in the figure to the above, practically speaking, there was no monopoly wealth in 1986. But it ballooned thereafter, reaching an astonishing 82 percent of the total market value of U.S. stocks in December 2015 (which was \$29 trillion). This component of wealth is highly volatile, jumping during the dotcom boom of 2000 and plunging at the beginning of the Great Recession (2008). But adjusting for both extremes, the rise of monopoly power has continued unabated.

An important factor contributing to the outsized monopoly component of total stock market value in 2015 was the rise in borrowing. U.S. corporations increased leverage from 22 percent of capital assets in 1960 to 78 percent in 2015. Many advanced technology firms have debt/capital ratios greater than one, which suggests that lenders routinely accept monopoly wealth as collateral. If one considers a corporation as a partnership of stockholders and bondholders, rising leverage implies that bondholders/lenders finance an increasing fraction of capital employed. We are, therefore, approaching a future in which bondholders finance all capital invested and receive a known return, while stockholders own and trade highly leveraged monopoly wealth, bearing most of the residual risk of volatility in profits.

RIISING REAL MONOPOLY WEALTH (2015 US\$, BILLIONS)

YEAR	TOTAL MONOPOLY WEALTH
1974	-\$2,052.85
1980	-2,234.86
1986	-95.31
1992	2,676.31
2000	17,970.68
2010	14,126.56
2014	23,982.67
2015	23,848.25

The table here shows my estimates of U.S. monopoly wealth in 2015 dollars. Between 1986 and 2015 the owners realized an increase of \$23.9 trillion above and beyond the rise in real asset values created by the regular process of savings and capital accumulation. Since all of this wealth is held in the form of financial securities, its ownership is heavily concentrated in a relatively small number of hands. Its contribution to the rising inequality of wealth is thus obvious.

Beyond Casual Empiricism

I find the apparent correspondence in the timing of the IT evolution with the growth of monopoly wealth compelling. But to show a direct association, one would like to demonstrate a quantitative relationship of monopoly wealth with some index of IT transformation across a large number of firms in my 2015 data. This is not possible for two reasons.

First, some monopoly wealth is due to ownership of brands with known pricing power (e.g., Pepsi, Marlboro), not IT. Second, the diversity of sectors transformed by IT implies that such an index cannot be one-dimensional. Consider, for example, Apple, Facebook, Biogen and Expedia. These are four different platform firms defending against the entry of competitors by individually distinct sets of factors and strategies. Thus, no single index would predict the differences in monopoly wealth among them.

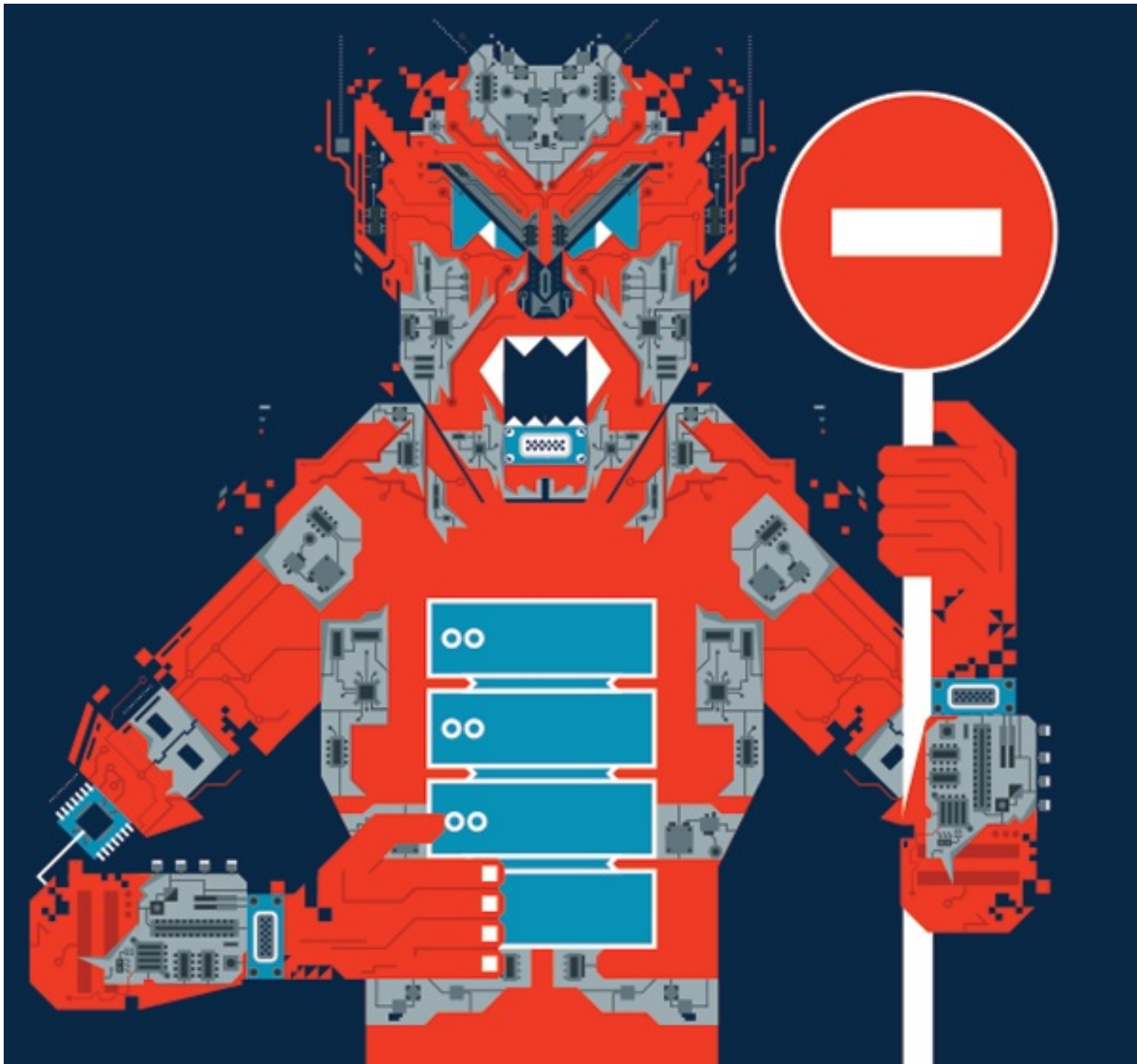
My alternative demonstrated association is as follows. First, I list the generally recognized “IT-transformed sectors,” ranging from semiconductors to telecommunications to artificial intelligence to genetically modified plants.

I then identify each firm in my 2015 universe either as an IT-transformed firm or not. Therefore, for any sample of firms, I can compute the proportion of the IT-transformed firms in that sample. Next, I compute the monopoly wealth of each firm in my universe, so that for any two samples I can then compute its monopoly wealth and the proportion of IT-transformed firms in that sample.

If IT is not associated with monopoly wealth, then any two random samples with *different* monopoly wealth should have the *same* proportion of IT-transformed firms. This hypothesis is strongly rejected by the data. Samples with large monopoly wealth also have a large proportion of IT-transformed firms, supporting the conclusion of a strong association of IT with monopoly wealth. [*Note: a full explanation of the procedure can be found in the [technical version](#) of this article.*]

The fact that IT is the cause of rising monopoly wealth has an added implication. It explains why profits and stock prices have risen so sharply since 1985, even as the growth of GDP slowed. But it also provides a converse warning: high stock prices depend upon continued rapidly growing profits regardless of the growth of GDP, and this is possible only if monopoly power continues to rise.

This is not likely to be the case for two reasons. First, competitive forces (including international sources) and the public policy response (see below) will serve as strong headwinds to rising monopoly power. Second, as in all innovation waves, at some point the arrival of new ideas slows down. When this occurs, monopoly power will stop rising or might even decline, and profits will fall or rise more slowly. This will cause high stock market volatility and, possibly, a repetition of the 1968-80 experience in which stock prices largely stagnated.



The very nature of IT enables the formation of monopoly power since IT innovators are sole proprietors of valuable knowledge or information, which they prevent others from using.

The Bad News

All successful innovations lead to some monopoly power created by legally protected intellectual property rights — patents and copyrights — or by trade secrets. The very nature of IT enables the formation of monopoly power since IT innovators are sole proprietors of valuable knowledge or information, which they prevent others from using. Indeed, the value of their proprietary knowledge is exactly the market value of their right to prevent other firms from using this knowledge.

An IT innovator becomes a monopolist of the activity enabled by the innovation, and in this sense IT enables a firm to become a market leader. Over time, innovators build layers of related IT innovations, in part legally protected, that constitute a defensive “moat” around the initial innovation.

In the long run, the power that brings down an innovator's monopoly is a competing innovation that replaces one innovator's pricing power with another's. Hence, during long periods of rapid technical advance, consumers face a sequence of firms with monopoly power, each replaced by a new innovator with "the next big thing." When innovation slows, markets return to competitive conditions (assuming more traditional barriers to entry are not significant). But if the pace of innovation declines rapidly, a market collapse similar to the one that occurred in 1968-70 (when the Dow Jones Industrial Average dropped 36 percent from its peak), after the wave of IT hardware innovations that began in the early 1950s. The subsequent software phase, which took hold in the 1980s, led to monopoly power that was qualitatively as well as quantitatively different from anything previously experienced.

Successful IT innovations result in entrepreneurs retaining much of the wealth.

IT firms can and often do defend monopoly power through patents or copyrights. But these routes require making trade secrets public. So, for strategic reasons, many firms forgo legal protection and consolidate a dominant market position by creating layers of trade secrets or by ongoing software updates that, by default, serve as barriers that are difficult for competitors to breach and which turn the firm into a "platform." When potential competing technologies emerge, larger firms often acquire their challengers, either to develop the competing technologies on their own, or to suppress them.

Once an innovative firm establishes platform dominance, it has two advantages. First, it has scale advantages since, given the low incremental cost of delivering the service, IT enables vast amounts of information to be shared by a large number of users. This means that the firm enjoys increasing returns to scale and disproportionate growth in profits as users multiply (think Google and Facebook).

Second, since the cost of processing, storing and transmitting information has declined dramatically in recent years, firms transformed by IT have enjoyed ongoing declines in cost, independent of scale. These firms further entrench their position by using information gleaned from their customers — for example, what products search-engine users are interested in — as a strategic asset. Such information is a source of market power due to a growing use of big data in marketing and artificial intelligence in business decisions. These advantages are almost impossible for would-be competitors to overcome.

In short, IT has enabled the creation of formidable barriers to market entry, and then provided potent tools to leading firms that have allowed them to consolidate their power in growing numbers of sectors of the economy. With the pace of IT innovation increasing, and with IT transforming a growing number of sectors of the economy, monopoly power is also rising.

More Bad News

Monopoly profit grows at the expense of the incomes of labor and the owners of competitively provided capital. It therefore lowers the share of total income delivered in the form of wages and interest.

Distinct from this impact on the division of income between the factors of production, the growth of IT-transformed sectors also increases income and wealth inequality among individuals. In part that's because IT monopoly profits are largely reflected in stocks, and stock ownership is very concentrated. But that explanation is insufficient for two reasons.

First, earlier in the 20th century the proportion of stock owners was equally small or, perhaps, smaller than today. Nevertheless, wealth inequality is now greater and wealth ownership is more concentrated. Second, stock owners have traditionally been older people, whereas IT entrepreneurs tend to be much younger.

To the first point, the major drivers of growth in the 19th and early 20th century were heavy industries – steel, railroads, autos, etc. – which required substantial investments of capital. To raise that capital, innovators had to surrender a substantial ownership share. Also, since profits arrived after investments and after marketing development, the innovator realized most value only after the idea proved successful – at which time the wealth created would be spread among more stakeholders.

In contrast, innovations in the recent software stage of IT are typically purely increments to information and knowledge. Their key feature is that, once an innovator has the idea, it typically requires only modest venture capital, in the range of \$20 million or less, to prove their viability – sums that are available without surrendering a major share of the stock. Development of the innovation is subsequently accomplished with public capital raised by selling shares at a much higher price. Hence, successful IT innovations result in entrepreneurs retaining much of the wealth.

There are exceptions. Pharmaceuticals are very expensive to develop because they must undergo long (and risky) clinical trials. But then, monopoly wealth developed by drug companies is also among the highest and pharma's cash flow is so large that the big companies can finance further drug developments without much equity dilution – which again, contributes to higher concentration of income and wealth.

To address the issue of entrepreneurs' ages, recall that since the 1980s innovations in IT have been mostly software-based, requiring technical knowledge of computer software. This gave young innovators an advantage because they were far more likely to have computer science training.

Even More Bad News

A formal analysis suggests there are other unwelcome macroeconomic consequences of rising monopoly power. As noted earlier, income created by firms with monopoly power is divided in three shares: labor income, normal interest income paid to capital and monopoly profits. My computations show that during the 1960s, monopoly profits turned positive. In the early 1980s, they were virtually zero, but since 1982 the share of monopoly profits has steadily risen, reaching 23 percent of total income produced by U.S. corporations in 2015. This means that during the 1982-2015 period, the combined shares of wages and normal interest on capital declined by 23 percent.

Note a distinction here: rising productivity and capital accumulation did increase wage and capital income, even as monopoly power sharply reduced labor and (normal) capital's shares of income. But rising monopoly power did serve as a headwind, slowing gains in living standards for workers. Indeed, while automation and globalization are always the villains in explanations for the discontent of America's struggling working class, rising monopoly power was no small factor.

Consider, too, that while the slowdown of U.S. growth is often linked to lower rates of private investment, a key explanation for the slow rate of domestic investment lies in the rising monopoly power of corporations. With unchanging production technology, there are only two ways to raise profits: sell a smaller amount at a higher price and/or pay suppliers less per unit purchased. And these changes are made possible by rising monopoly power.

If customers buy less than before because prices are higher than they would otherwise be, or if suppliers supply less than before, the firm needs smaller capacity and therefore it reduces investment. This explains how rising market power causes a fall in private investment. This is hardly radical thinking: the simple formal models of the economy introduced in Econ 101 confirm that higher monopoly power leads to lower capacity and a lower rate of private investment.

There is even more to concern us here. Smaller productive capacity and lower rates of investment also imply lower wages, lower consumption and, of course, lower GDP.

While the slowdown of U.S. growth is often linked to lower rates of private investment, a key explanation for the slow rate of domestic investment lies in the rising monopoly power of corporations.

The impact of rising monopoly power on growth and interest rates is more complex and depends upon the way innovations are introduced. Every invention changes economic capacity in some way. Standard economic growth theories assume that once a new technology is developed, all assets in use — such as buildings, machinery, factories, etc. — incorporate the new knowledge and adjust their utilization to reflect this new productivity. The alternative theory: new knowledge is incorporated only in new investments (buildings, equipment, etc.), and old assets cannot be altered at acceptable cost to incorporate new technology.

Since the former essentially assumes all productive assets can be remodeled costlessly to incorporate the new technology, it is less realistic. Under the second (and more plausible) theory, rising monopoly power that causes a decline in the level of investment also lowers the economy's growth rate and its interest rate.

What to Do

Rising market power raises antitrust issues, but most monopoly power created in the past half century is legal since it results from the introduction of protected intellectual property.

Consequently, apart from the Microsoft case (the remedy for which had only a modest effect on the company's capacity to exercise market power), actual antitrust action has been very

limited in the IT sphere. A private civil suit did successfully challenge Silicon Valley's collusion to prevent movement of quality workers among platform firms. But this sort of anticompetitive behavior is not directly related to the issues discussed here.

The European Union has more restrictive anti-competition laws, which have been used to curb the IT platform firms. The most recent lawsuit rejected Google's "deceptive" search process, which does not make search criteria transparent and gives preference to sites that pay Google a fee. The EU imposed a fine of \$2.72 billion. However, the EU is apparently not prepared to systematically limit the reach of IT platforms.

The main reason for this limited response is that IT-transformed industries have raised questions that the law has never addressed before, allowing the platform firms to exploit the legal ambiguities created by the rise of IT-related market power. Three examples will clarify the point.

- It is far from obvious that a firm with IT monopoly power should be allowed to exploit or sell private information gained from its customers. Today, this information is a major source of profit for many of the platforms.
- Free speech has boundaries set by society's goals of public safety and social order. These same principles should apply to firms that enable the circulation of socially damaging rumors and demonstrable falsehoods.
- Contracts transferring mineral rights — in particular, transfers from the government — typically require these rights to be developed within a fixed period or else revert to the prior owner. Why should the law protect the rights of a firm to purchase an IT innovation in order to suppress it?

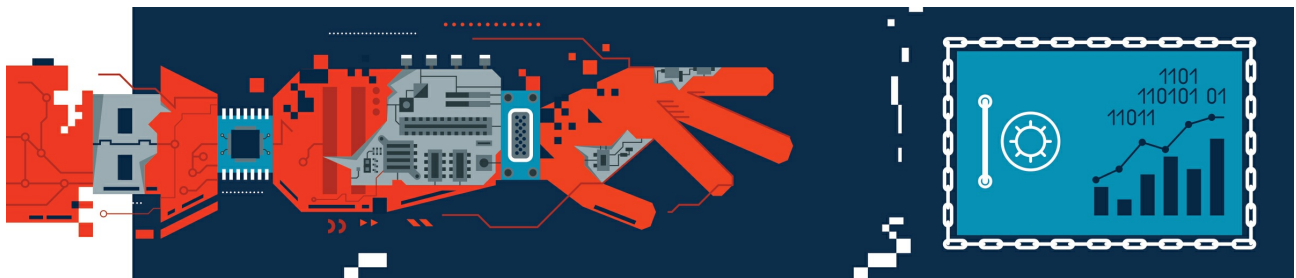
Much of the value of platform companies comes from their ability to collect and use private information. We should consider laws that prohibit use, sale or purchase of private information but give consumers the right to choose when their information may be used.

These examples suggest there are broad issues of public policy here that extend well beyond the intent of laws protecting intellectual property. We are all aware of the ways the IT platform firms have transformed the economy for the better. We have yet to come to terms, though — or, for that matter, even acknowledge — the negative consequences of IT-derived monopoly power on income and wealth distribution or economic growth. Nor is it reaching to say that this source of legal monopoly power undermines social and political stability and even threatens the vitality of democratic institutions.

I believe a strong policy response — in part through regulation, in part through taxation — is warranted. Before elaborating, though, it's important to address the elephant in the room: the conventional wisdom that any action to limit monopoly power created by intellectual property or to tax away the resulting monopoly profits would curtail the innovative American spirit. I think the argument has some merit, but leads to the wrong conclusion.

As every student who paid attention in introductory economics knows, virtually all taxes and regulations distort market outcomes in some way. Thus, if we looked only at the costs of those distortions, we would hardly ever tax or regulate anything. But public policy entails making choices that weigh costs against benefits. And while in many cases we do not have accurate measures of these positive or negative effects, good policy can still be based on rough estimates of their impact.

Limitations on IT protection need not have much quantitative impact on innovation. When a creative person comes up with an idea, he or she rarely has a precise idea on how valuable it may prove to be. Moreover, most studies of major innovations show that, initially, the innovators are largely motivated by the search for knowledge for its own sake. Even if financial gain is high on the agenda, they may well incorrectly estimate the potential payoff by orders of magnitude.



Mark Zuckerberg could not have imagined the value of Facebook when he started the site at Harvard, and Steve Jobs certainly didn't expect to have launched what would become the most valuable corporation in the world when he was enjoying initial successes with the Apple II personal computer. At the time of their innovations, the corporate tax rate was 35 percent. But suppose the rate had been 50 percent. Would that have significantly reduced their incentive to innovate?

Most experts would say no, but also believe that increasing the tax would reduce incentives for “easy” or transparent R&D work, in which corporate effort focuses on specific tasks with more predictable results. One class of such innovations consists of those that have social value but tend to be minor in scope — in which case a reduction in the pace of innovation would not be especially costly. Another class of transparent innovations consists of those with questionable social value. Glaring examples here include innovations designed to strengthen corporate “moats” around important innovations and thereby consolidate monopoly power.

One can quarrel about which minor innovations fit in which category. But there's rather strong evidence that the negative consequences of redistributing IT-based monopoly profits are modest. That doesn't mean how you do it doesn't matter. The goal is to design policy that minimizes the costs in terms of innovations and maximize the benefits in terms of growth.

Regulation of monopoly behavior

Four approaches that would increase social value at the expense of innovators' profits are natural extensions of existing laws:

Invasion of privacy. Much of the value of platform companies comes from their ability to collect and use private information. We should consider laws that prohibit use, sale or purchase of private information but give consumers the right to choose when their information may be used. For example, consumers who benefit from Google's ability to tailor their ads to their needs may elect to permit the use of their information, but preserve the right for periodic review of such consent.

National security. Social media has become a powerful force shaping public opinion that can be manipulated by groups or countries with harmful intent. Regulations will have to address the national security aspects of public media.

Use of intellectual property rights to suppress competing innovation. It's often difficult to read the intent of Company A in its purchase of patents or copyrights from Company B. But public policy could nudge buyers in the right direction by requiring rights to revert to the seller if an innovation is not actively developed within a fixed period.

Stronger enforcement of antitrust laws. IT lowers costs, enhances increasing returns to scale and raises incentives for firms to grow bigger. It also increases the likelihood of "winner take all" market outcomes. This trend could be better managed by more aggressive enforcement of merger policy, putting a stronger burden on large companies to show that the purchase of potential rivals would not limit competition. Breaking up very large platforms may have to be considered as well.

I also think there should be a debate over more radical measures to limit the societal impact of IT-protected monopolies that, admittedly, raise significant questions of fairness and practicality. Here are three examples.

Internalize social costs of network platforms. Make owners more responsible for illegal and/or injurious activity facilitated by their networks. The idea would be to force networks to regulate their traffic more rigorously, removing damaging material and barring bad actors swiftly. Of course, the policy would have to be designed around vexing questions of what constitutes due diligence on the part of the platform owners and the degree to which offending behavior constitutes protected free speech.

Revise legal protection of intellectual property. The idea is to better distinguish between patents on new innovations (primary) and those that build on top of an existing patent (secondary) and designed only to bolster the exclusivity duration of the underlying patent. With such a distinction one could, for example, have patents with different durations so that an innovation built on top of an existing one is granted a shorter duration of exclusivity.

Increase search-based marketing transparency. Require networks that are paid to direct traffic to commercial sites to disclose how they decide on search matches.

Taxation of Monopoly Profits

To contain monopoly power, standard theory of optimal taxation concludes that the appropriate tax on monopoly profits should be 100 percent — but that competitively earned corporate capital income should be free from tax. This theory ignores the consequences in terms of incentives to innovate, but I have provided reasons that a tax rate of 35 to 50 percent would have small but acceptable incentive effects.

The highly regressive tax changes passed by Congress in December cut the corporate tax rate from 35 percent to 21 percent. While few economists believe that the reduction will have much effect on domestic investment, there is hope that it will increase incentives for corporations to realize profits in the United States rather than in lower-tax foreign jurisdictions. In any event, since the law makes no distinction between types of profit, it's clear that the lower tax rate will reduce, rather than increase, taxes on monopoly profits.

A superior policy would tax monopoly profits more without increasing incentives to invest outside the United States. This could be done by allowing the immediate expensing (rather than scheduled long-term depreciation) of domestic investments — or even going further by subsidizing new domestic investment with tax credits — and by offsetting the revenue loss with a higher tax on corporate profits. The net tax would then fall only on monopoly profits.

Since most income of the very rich is due to monopoly profits of companies from which they draw their dividend income and capital gains, taxation of these income sources has nothing to do with incentives to work.

Some perspective is needed here. Legal restrictions would have limited ability to restrain monopoly power arising due to technology, and the problem of inequality must be addressed by a more aggressive sharing of monopoly profits by taxation of income.

First, the new effective corporate tax rate is only 9 percent, not 21 percent, because of the special tax treatment of many interest groups. None of these tax breaks supports a national policy objective, and all should be abolished. Second, rates of personal income tax need to be raised. The standard argument in support of lower individual tax rates is that they increase incentives to work harder and create new businesses. But since most income of the very rich is due to monopoly profits of companies from which they draw their dividend income and capital gains, taxation of these income sources has nothing to do with incentives to work.

For a more equitable sharing of monopoly profits, we need a more progressive tax burden with four features:

- Individual rates with progressivity that rises to a marginal rate of 50 percent on incomes over \$1 million
- Lower rates for middle-income families
- A corporate tax with an effective rate of 21 percent (not 9 percent).
- Tighter legal restrictions on tax-exempt foundations to ensure tax exemption are provided only for activities that benefit genuine U.S. public welfare.

These provisions would raise enough to finance a long array of public initiatives that would begin the long road of rebuilding the middle class.

A Final Note

Rising inequality is far more than unfair. Unchecked, it may lead the United States to class struggle that results in economic turmoil and political strife the likes of which we have not seen since the Gilded Age and the Great Depression. The problem today is unique in that rising inequality does not result from a normal sorting of households according to differences in work ethic, inclination to save and entrepreneurial ability. Rather, it has resulted from rising monopoly power in open markets, brought about by IT.

What has yet to be widely understood is that we are not prisoners of market outcomes — in particular, that the redistribution of income and provision of public services through tax policy need not reduce the size of the economic pie. Indeed, the recognition that much of business income amounts to monopoly profits that could be taxed with little or no impact on productivity or economic growth makes the failure to move in this direction all the more poignant.

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