

# Book Review: *The Great Reversal* by Thomas Philippon<sup>†</sup>

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*Thomas Philippon's The Great Reversal: How America Gave Up on Free Markets is a remarkable piece of research that draws our attention to a timely and relevant issue: the rise of market power and its macroeconomic implications. The book documents the facts, offers a number of hypotheses to explain those facts, and discusses the policy interventions needed to remedy market power. This essay reviews the contribution of the book, especially the conceptual and empirical foundations that lead to the main conclusions. The main virtue of the book is to offer a wealth of facts and implications that highlight the different aspects of the evolution of market power. This essay also considers instances that permit an alternative viewpoint. First, I maintain that the reliance on concentration indices to measure market power can be misleading. Second, the essay argues that to date there is no evidence that bestows a different experience in the evolution of market power in Europe compared to the United States. Third, the book gives most air time to antitrust and merger review as the main cause. While antitrust is relevant, technological change is at least as, if not more, important for the observed rise of market power. This essay manifests that technological change has fundamental implications for welfare and therefore for policy intervention. (JEL D24, E22, G31, G34, K21, L13)*

## 1. Introduction

In the last few years, many economists' views on market power have undergone a dramatic sea change. Several recent studies find that since 1980, market power is on the rise, and this has profound implications

for the macroeconomy. The rise of market power at the micro level is widespread across a large variety of markets, and this can explain secular trends in the macroeconomy. As one of the authors contributing to this literature, Thomas Philippon has written *The Great Reversal: How America Gave Up on Free Markets*, which documents these facts. There are other books on the topic<sup>1</sup>

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<sup>1</sup> See, for example, Baker (2019), who argues that current antitrust policy is outdated. Full disclosure: the book, *The Profit Paradox* (Eeckhout 2021), is by the author of this review essay.

and *The Great Reversal* is an academically founded piece. Philippon deserves all the credit for a well-researched and nicely written book. It documents a wealth of facts and is rife with ideas that stimulate further thinking. Philippon is a professor of finance at New York University and has managed to condense, in the book, much of his impressive research, not only on market power, but also on political economy, finance, and macroeconomics.

Let me stress from the outset that I strongly recommend this book. It draws the attention to a hugely important issue in economics and in the public discourse. Moreover, the book is carefully researched and offers a comprehensive view of the facts and the literature by one of the leading scholars in the field. Anyone interested in what is at the top of the economic policy agenda should read the book, whether as an academic, a policy maker, or an interested layperson. In this review, I offer a critical appraisal because that is the task of an academic reviewer. But let there be no doubt that my praise outweighs, by orders of magnitude, my critique.

The main thesis of the book can be summarized as follows: (i) concentration in the United States has increased, whereas it has not in Europe; (ii) even in a growing economy, lack of competition leads to a decline in investment, a decline in technological innovation, and a slowdown in the rise of wages; and (iii) this rise of market power in the United States and the different outcome in Europe are due to policy choices, mainly antitrust policy.

Many economists will agree with (i), that there is abundant evidence of the rise of market power. While I completely agree with this fact and conclusion, I have some qualms regarding the use of concentration ratios to establish this fact and how the author comes to these conclusions. Below, I outline the shortcomings of using the Herfindahl–Hirschman index (HHI) as a measure of market power.

One of the major developments in the academic industrial organization (IO) literature since the 1980s has been to shed the HHI as a reliable measure of market power. Now that the macroeconomic literature is increasingly addressing the fundamental question of market power, it would be beneficial if it used the modern techniques developed in IO. Granted, the HHI is still widely used in policy circles where antitrust policy has impactful billion dollar implications, most notably under merger review by the Department of Justice (DOJ) and the Federal Trade Commission (FTC). Still, there are by now enough academic grounds to question the reliability of the HHI. The book heavily leans on the HHI as a measure of market power, which can lead to erroneous conclusions.

I respectfully disagree on the talking point of the book that stands out most, namely the schism between the United States and Europe. I realize that a counterintuitive claim—that the United States, the land of free competition and capitalism, has seen a rise of market power, whereas stale and overregulated Europe has not—does catch the attention. Still, the evidence in the book, as well as other research to date, does not back up this claim. Below, I will show contrary evidence that supports a similar pattern in Europe as in the United States, and explain how the book has reached the opposite conclusion.

I fully agree that the rise of market power has profound macroeconomic implications, point (ii) of the book's main thesis. The book chooses to focus mainly on the impact market power has on investment and productivity growth. I would argue that the implications are even broader. The book does mention some of these implications in passing, such as the decline in the labor share, for example, while other macro implications such as the general equilibrium effects of product market power on the wage level and inequality are not discussed at all.

Point (iii) of the book's thesis, that the rise of market power is driven by policy choices, is true, but it does not paint the complete picture of the market power story. One question is how an inadequate policy choice regarding merger review and antitrust enforcement affects market power; a different question is how technological change increased market power given the existing merger and antitrust regime. There is ample evidence to support the technological change hypothesis in addition to lax antitrust enforcement.<sup>2</sup> Technological change leads to fundamentally different welfare and policy conclusions than lax merger review. In addition to the welfare implications, the claim that antitrust policy, or the lack thereof, is the dominant explanation for the rise of market power leads to an easy yet erroneous conclusion that Europe is different from the United States. That conclusion is much harder to reach when the determinant of the rise of market power is technological change.

The book is somewhat lopsided in its organization. Understandably, the author focuses on his expertise and the body of his research. The book is a compendium of Philippon's research output of the last decades, with a special focus on the most recent years of his work. That is commendable given the stature he has as a top researcher and the quality of output that he has produced. But it also takes away from the main focus of this book, which is the rise of market power and the macroeconomic implications. For example, of the four parts, the book spends one entire part discussing the political economy of lobbying and money in politics. This is an interesting topic, and his years of research on the topic make Philippon the ideal expert to explain it, but it occupies a disproportionate share of real estate in this book on market power,

while leaving out much of the evidence, for example, in support of technological change as a driver of market power.

On the up side, it is a delight to read Philippon on the topics in finance where most of his research output lies, and especially how he uses his knowledge of the intricacies in finance to link it to market power. His breadth of research topics makes for very interesting and novel viewpoints. That is a laudable achievement.

The book is written for an audience with a background in academic economics. The lay audience may find the book too encyclopedic, going over many different topics and ideas without fully developing them and without giving the reader sufficient time to absorb the novelty of the ideas. That said, for the academic reader, the book is appealing and thought provoking. At each page, you cannot stay indifferent: either you are in awe or you want to poke at the analysis and dig deeper. This is quite an achievement for an academic piece that doesn't shy away from rigorously reporting facts and explaining complex economic analysis. Yet, the prose is well written and in an engaging style, peppered with *Economist*-like puns (such as the "French boiling frog," "the Entry of Free," and "Apples (inc) and oranges").

## 2. *The Hazards of HHI*

A firm exerts market power if it can sell goods even if the price is above the cost of production; hence the firm makes excess profits. Instead, under perfect competition and given the law of one price, a minor decrease in the price leads to losses (the cost is higher than the revenue) and a minor increase in the price leads to no sales (customers buy from cheaper competitors). Technically, under competition the firm faces a perfectly elastic (flat) residual demand. Instead, a firm with market power faces a residual demand elasticity that is less

<sup>2</sup>See for example De Loecker, Eeckhout, and Unger (2020); Autor et al. (2017); De Loecker, Eeckhout, and Mongey (2021); and Edmond, Midrigan, and Xu (2018).

than infinity, and as a result, it can set prices above marginal cost. In order to measure the extent of a firm's market power we are interested in the discrepancy between the output price and the marginal cost. To evaluate market power, the appropriate measure is the markup, defined as the ratio between the price and the marginal cost. In addition, and to account for the overhead costs, we need measures of profitability.

Because marginal costs (and to a lesser extent prices) are difficult to measure, historically the literature has indirectly inferred market power from concentration ratios. The HHI is defined as the sum of the squared market shares expressed in percentages. A monopolist has a market share of 100 percent, so the HHI is 10,000. Under perfect competition all firms have an infinitesimal market share and the HHI is zero. The major advantage of the HHI is its simplicity. It only requires data on sales for all firms in a given market and we can readily calculate the HHI. In the absence of data on *all* firms, people use variations of concentration ratios such as the concentration ratio of the top  $n$  firms (typically denoted by  $CR(n)$ ).

To document the rise of market power, this book relies predominantly on these concentration measures. Unfortunately, HHI is not an adequate measure of market power. The author is aware that "concentration alone is not a reliable indicator of competition" (p. 35) and recognizes the need to also look at profits and prices. He therefore also reports some aggregate evidence of profits and prices, to which I will come back below.

The HHI as a measure of concentration is not a reliable measure for market power for several reasons. First, theoretically there is no universal link between market power and concentration. The HHI directly relates to market power in the workhorse model of Cournot competition, for example. There, the markup can be written directly as an increasing function of the market share

for each firm. It immediately follows that the HHI is increasing as aggregate market power increases. However, in other models (for example Melitz 2003 and Melitz and Ottaviano 2008) more market power leads to *lower* concentration and a lower HHI, which is possible through selection of potential entrants depending on the degree of substitutability between heterogeneous goods. The measurement of a higher HHI therefore implies opposite conclusions regarding market power. As Syverson (2019) points out, "[a] negative relationship between market power and concentration is not just a theoretical curiosity. Many empirical studies in varied settings have found that greater [competition leads to higher HHI]" (p. 27).

Second, the measured HHI crucially depends on how we define a market. The main problem is that the precise market definition is most often not observable. This is of particular relevance in the macroeconomics context. The market definition depends on the product and industry, on the geography, and on the population density. For example, the appropriate market for a furniture retailer like IKEA might be the metropolitan area, whereas that for a coffee store or a dry cleaner is more like a few blocks. And even for the same industry, the geographical market definition in New York is different from that in Springfield, Ohio. Macro studies that use HHI pool all industries in the same market definition, despite the huge differences across industries and geography.

To make things worse, the market definition evolves over time. Therefore, any measures of market power must account for the time-varying change in the market definition. This has led to misleading conclusions by Rossi-Hansberg, Sarte, and Trachter (2018) about the evolution of market power. They find that local HHI are decreasing, whereas economy-wide HHI are increasing. In a discussion of their results, Eeckhout (2020) shows that this finding is purely

mechanical: local HHI can decrease while national HHI increases and while aggregate markups increase. The result is mechanical because due to population growth, the number of establishments increases while the market definition (say furniture retail in the Philadelphia metropolitan area) remains unchanged. As the number of establishments increases, HHI decreases by construction. Population is of course not an adequate measure of competition. This illustrates that relying on a static market definition to analyze the evolution of market power is problematic.

Third, in addition to the theoretical ambiguity of the markup-concentration relation and the unobserved market definition, regressions with markups on the left-hand side and HHI on the right-hand side are ill posed and do not offer a clear interpretation. For a review of the issues, see Berry, Gaynor, and Scott Morton (2019). The main problem is that concentration is an *endogenous outcome* and there is no obvious instrumental approach because markups and concentration depend on all components of preferences and technology, and hence prices, sales and marginal cost. While the regression method with HHI on the right-hand side had been discarded already in the 1980s in the IO literature, the current revival and interest in market power in the macroeconomic context has been using exactly these discarded methods. The knee-jerk reaction to rely on these regressions to infer information about market power from concentration is understandable,<sup>3</sup> but it obviates 30 years of research progress. There is no point making the same mistakes again. We can use the insights from the IO literature also in macro.

<sup>3</sup>The book is not alone in using HHI regressions. Other recent papers that use the same methodology include Azar, Marinescu, and Steinbaum (2017); Barkai (2020); Bessen (2017); Grullon, Larkin, and Michaely (2016); and Benmelech, Bergman, and Kim (2018).

This tells us that the book's regressions to analyze the effect of concentration on productivity growth, for example (box 4.2., p. 77), do not inform us about the question at hand. The conclusion that higher concentration leads to lower productivity may well be true, but we cannot conclude it from the regression results.

Beyond the identification concern, there is the additional issue that the productivity measure we are interested in is at the firm level, not at the industry level. As we find in De Loecker, Eeckhout, and Unger (2020), most of the rise of market power is due to some firms within the industry becoming dominant, not some industries becoming dominant. The rise of market power is happening everywhere, from tech to textiles, yet within each sector only a few firms have market power and are dominant. Most firms face stiff competition from those dominant firms.

*Alternatives to HHI.*—All this does not mean that concentration measures are useless, but we need to exercise extreme caution when interpreting them. As a result, starting in the early 1980s, the IO literature has therefore moved away from using HHI as a measure of market power. In the quest for a firm-level measure of market power came the advent of the modern IO approach (most often associated with Bresnahan 1989 and Berry, Levinsohn, and Pakes 1995) and researchers started analyzing market power in the context of a well-defined market (cars, breakfast cereal, cement, et cetera). Under certain assumptions regarding consumer preferences, the production technology, and market conduct, together with detailed data on prices and quantities, this so-called demand approach generates individual firm-level markups. The structure of the model produces an estimate for the marginal cost of the firm and with pricing data, therefore also a measure of the markup (price over marginal cost).

While the demand approach is the most complete and detailed method—call it the Rolls Royce of all methods—it suffers from two practical drawbacks. First, this approach requires a lot of detailed data, especially on firm-level prices and conduct. Second, we still need to define the boundaries of a market. While the market structure can be delineated for a well-defined product such as breakfast cereal, this is a lot harder at the aggregate macroeconomic level.

With the desire to calculate market power for the entire economy (i.e., at a macroeconomic level), and in the absence of detailed data, there is an alternative in the so-called production approach (see Hall 1988; De Loecker and Warzynski 2012; and De Loecker, Eeckhout, and Unger 2020). From the cost minimization decision of firms, this approach uses readily available accounting data to calculate the firm-level markup. The advantage is that we can calculate markups for the economy as a whole and for a long time series, without making any assumptions on the unobserved market structure or using measures of the market concentration.

Now we can use the firm-level micro estimates of markups to analyze the economy-wide distribution of market power and the evolution over time. Key is that we can focus on the *distribution* of markups and hence all the moments associated with this distribution, including the joint distributions of markups, sales, market shares, employment, cost shares, ... Because the HHI gives us only one moment of that distribution, it can not inform us about what is underlying this change in the markup distribution. For example, two different distributions of markups can give rise to the same HHI.

Finally, once we take into account the firm's overhead costs and properly account for the user cost of capital, we can calculate firm-level profits, not just markups.

*Findings: The Distribution of Market Power.* The key aspects of market power that we learn from analyzing the economy-wide distributions of markups and profit rates and that we cannot simply obtain from analyzing the HHI are the following:

1. Aggregate markups and profit rates have increased since the 1980s, with episodes of sharp increases during 1980–2000 and 2010–present, and an episode of no change during 2000–2010. HHI does not seem to capture this episode of stagnation during 2000–2010.
2. Underlying the increases in the aggregates are important distributional changes: there are huge increases in the top percentiles whereas the median is unchanged. This indicates that the rise of market power is consistent with the rise of dominance by some firms, at the expense of most firms. Rather than business as a whole dominating the economy, it is more accurate to state that some large firms dominate the vast majority of other firms, as well as the rest of the economy, most notably the workers (see below for the macroeconomic implications).
3. Using industry or economy-wide averages is misleading. Most of the action is within industry.
4. In the United States, most (two thirds) of the rise in aggregate market power is due to the reallocation of market share toward high-markup firms, and only part is due to the rise in markups themselves. This is consistent with the superstar firm hypothesis proposed by Autor et al. (2017).

The book acknowledges the need to go beyond concentration measures and to analyze markups and profits. However, the approach in the book does not go far enough. First, it uses only aggregate outcomes and we know that average markups based on economy- or industry-wide averages do not capture that most of the change in markups is *within* industry (see Hall 2018 and De Loecker, Eeckhout, and Unger 2020) and that there is substantial reallocation of market share toward high-markup firms, which happens mainly within industry.

Second, in an attempt to get at markups, the book analyzes prices (see figure 2.3), again at the aggregate, economy-wide level. But prices are clearly not enough; what we need is the relation of prices to the marginal cost, i.e., we need a measure of the markup. To see that using the price level is problematic, consider the following example. If the only good we consumed was RAM memory or microchips, we would find a massive decline in the price. Due to technological progress, the number of transistors in an integrated circuit roughly doubles every two years (Moore's law). Depending on production costs, we expect to see a massive drop in the unit price of (quality adjusted) memory or processing capacity. Does this drop in prices imply that competition has increased? Clearly not. To complicate things even further, there are huge differences across sector for the price evolution. Most manufactured goods (clothes, furniture,...) and tech products have seen a decline in absolute prices; health-care services and education have seen an increase. To evaluate whether there is more or less competition we need to evaluate the price *relative* to the marginal cost, not simply the price level.

Eventually the book moves beyond prices to construct a measure of markups when it discusses the difference between the United States and Europe in chapter 7. Unfortunately, that calculation uses

aggregate price levels (CPI and Big Mac prices) only. This method (box 7.1 and figures 7.1. and 7.2) does not inform us about the evolution of competition at the firm level and we cannot distinguish between the rise of market power of all firms in the economy or of a few dominant firms at the detriment of their competitors.

Between using concentration ratios (HHI) and calculating markups for aggregate outcomes (figure 7.2), the methodology in the book is inadequate on two fronts. Based on this analysis then, the book concludes that Europe is different from the United States.

Next, I turn to the difference between Europe and the United States. But before doing so, I want to point out that in the context of HHI measures I do like an interesting insight the book puts forward that applies to any micro level measure of market power (such as the market level HHI) or at the level of the firm. The book calculates the persistence of market power by considering the top percentage of firms, or by calculating a measure of reshuffling (1 minus rank correlation). This tells us how dynamic the market is (see also Kehrig and Vincent 2017). This is closely related to the impact market power has on the startup rate of firms or the reallocation of labor (see De Loecker, Eeckhout, and Mongey 2021), as discussed in the literature on labor dynamism (Decker et al. 2014). Market power affects the pass-through of cost shocks, which in turn affects the rate of adjustment of inputs (labor and capital) as well as the incentives to enter the market.

### 3. *Europe: To Be or Not to Be Like the United States?*

One of the main punchlines in the narrative of the book is that in sharp contrast to the United States, Europe has not seen the same rise of market power. The book argues: "Starting around 2000, profit rates

and concentration ratios increased in the US but remained stable or decreased in Europe” (p. 124). I disagree. Based on the evidence the book puts forward, we cannot conclude that Europe has experienced no rise while the United States has experienced a rise of market power. I base my conclusion on three premises: (i) the dates where there is no rise in Europe; (ii) the nonrepresentativeness of examples; and (iii) the role of technology.

*Dates.*—For the European study, the book relies on Gutiérrez and Philippon (2017), which uses the Orbis data commercialized by Bureau Van Dijk. Because before 2000 there are few observations for most countries, the rise of market power in Europe using Orbis can only be analyzed starting in the year 2000. Instead, for the United States we have better data coverage going back to the 1950s. Using different data on publicly traded firms (Worldscope), we can also analyze aggregate markups in Europe from 1980 onwards.

Incidentally, in the United States, the first decade of the twenty-first century (2000–2010) has seen flat average markups and a moderate increase only in the upper percentiles, compared to share increases between 1980–2000 and after 2010. This can be seen in figure 1, panel A. The pattern for Europe is remarkably similar (figure 1, panel B), as it is for the entire world economy. The main observation here is that for the period 2000–2010, there is no rise of market power in Europe, which largely overlaps with the period that the book covers in the analysis on Europe. But neither is there a rise of market power for that period in the United States. Either we conclude that markups went up from 1980 until now (with a caveat of a period of stagnation 2000–2010) or we conclude that for the period 2000–2010 there was stagnation. In both conclusions, the pattern for Europe is the same as the pattern for the United States. This

evidence does not let me conclude that there is a schism in the European experience, different from that in the United States.

Because the book mostly focusses on the period starting in 2000, a period of stagnating market power in both Europe and the United States, some statements on the period before 2000 do not square with the facts. For example, the book agrees with a quote by a US antitrust official who, in 1998, claimed that “our economy is more competitive today than it has been in a long, long time” (p. 45). The timing of that claim is particularly striking since the end of the 1990s marked the single most pronounced increase in markups from 1.2 to 1.5, as can be seen in figure 1, panel A.

The book hinges this argument mostly on the evidence that the concentration ratio  $CR(8)$  in the United States increases by 7 percent between 2000 and 2010 and that measure for Europe is unchanged for the same period. The concentration suffers from the same hazards as the HHI that I have outlined above, so we cannot imply that changes in concentration ratios are evidence of changes in market power. But even the measurement of the concentration is not beyond doubt. In a recent paper, Bajgar et al. (2019) find that even in Europe concentration ratios have increased for that period.

No evidence is pitch perfect, including figure 1. The most important caveat is that the data in figure 1 are based on publicly traded firms only. While publicly traded firms account for nearly 40 percent of GDP, they are a very selective sample of firms (most notably because of their size) that may not be representative of the entire economy. We will not know until we have an analysis for the universe of firms in Europe whether this result will hold ground. But we know at least that the pattern for the publicly traded firms is similar to that of the universe of firms in manufacturing in the United States (see De Loecker, Eeckhout, and Unger 2020, section



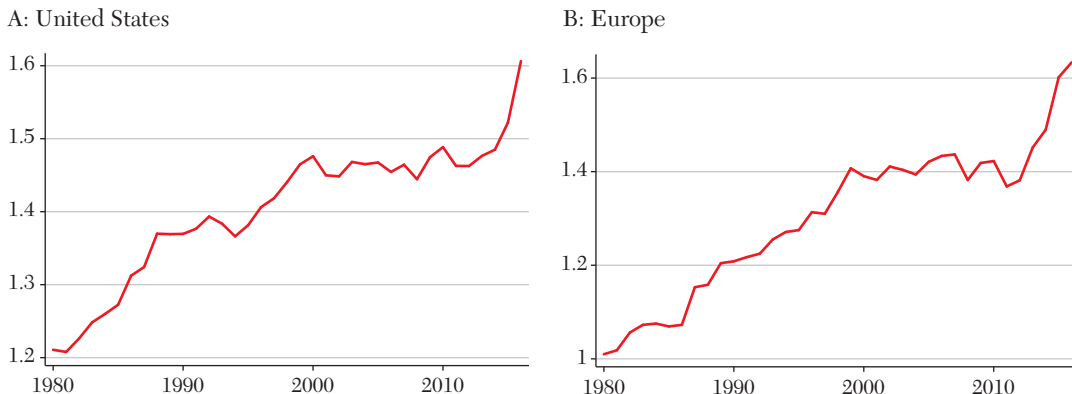


Figure 1. Average Markups in the United States and Europe

Sources: De Loecker, Eeckhout, and Unger 2020 for the United States and De Loecker and Eeckhout 2018 for Europe.

3.4, for markups in the manufacturing sector using the Census of Manufacturers). Most importantly, this evidence does not let us conclude that there are significant differences in the pattern of market power in Europe and the United States.

In addition to the dates, the specific measures of aggregate markups used matter. I have discussed above the other evidence that the book brings forward in chapter 7 on the evolution of the price level, and which is also used to elucidate the supposed Europe–US dichotomy. Those aggregate price levels do not really measure markups. Using inflation without marginal costs does not measure markups. In addition, looking at aggregate outcomes obliterates all evidence within industry, which is where all the action on the rise of market power lies. The evidence shows that one or a few firms within an industry exert a remarkable dominance and generate high markups, whereas most other firms experience low markups. Due to Jensen’s inequality, using industry or economy-wide averages, those within-industry differences do not aggregate.

In a recent academic paper, Cette, Koehl, and Philippon (2019) argue that due to mismeasurement, there is no decline of the labor share in Europe (and in the United States). Using aggregate data, they draw the attention to three sources of measurement that may give rise to biases in the labor share: the exact window over which the labor share is analyzed; the role of self-employment; and the role of residential real estate income. The labor share is tightly linked to measures of market power (see also below), so a supposed stable labor share (properly measured) in Europe is indirect evidence of there being no rise of market power. But this measurement concern of course also applies to the United States. Related work by Koh, Santaeuàlia-Llopis, and Zheng (2020) argues that the rise of intangibles that accrue to labor income leads to mismeasurement of the labor share. This remains an open academic debate, and it will certainly illuminate our understanding of market power in Europe and the United States. Using the Worldscope data of publicly traded firms, De Loecker and Eeckhout (2018) find not only

increasing markups for Europe (figure 1 panel B above), but also declining labor shares and rising profit rates. There is no doubt that more work is needed to come to a firm conclusion on whether there is a dichotomy between the United States and Europe.

*Nonrepresentative Examples.*—I love the example of the mobile phone contract cost in the United States versus Europe, with which the book leads the opening. In fact, as a prime example, I have been using the mobile contract cost to illustrate the rise of market power (together with airline ticket prices). My US AT&T contract costs roughly double what my Spanish Movistar contract costs. The problem with those examples is that we have similar examples that prove the opposite. ABInBev is the dominant global beer brewer, with a world market share of around one-third and, in some countries, ninety percent. While with those global companies, the location of headquarters is not necessarily indicative of economic activity, ABInBev is a European company, headquartered in Belgium. Likewise for Inditex, the parent of apparel companies such as Zara. Its retail activity is predominantly in Europe, and it has become a dominant firm in the textile industry with high markups and high profit rates.

That does not mean there are no differences between the United States and Europe. Even though we do not see a different pattern in the aggregate, economy-wide markup, underlying there is a difference in the determinants of that pattern. In De Loecker and Eeckhout (2018) we find that the reallocation of market share from low-markup to high-markup firms (see also below) and the superstar firm phenomenon is much more pronounced in the United States than in Europe. As we can see in figure 2, aggregate markups in Europe rise mainly because the unweighted markup distribution becomes more skewed with a fatter

tail, whereas in the United States aggregate markups rise because the high-markup firms become substantially bigger, even if the markups themselves do not change much. This provides an interesting lead to look for differences in the mechanism behind the rise of market power in Europe versus the United States.

*Why Is the Europe–US Comparison So Important?* Beyond these illustrative examples, the Europe–US comparison confirms or shakes up the preconceived ideas of the audience. The problem is that these purported regional divergent experiences are used to infer differences regarding the causes of the rise of market power.

The argument goes that if we see different patterns across countries, it must be due to the fact that institutions and anti-trust enforcement is different. The book states: “If globalization or technology were responsible for declining enforcement in the US, we should observe similar trends on both sides of the Atlantic” (p. 147). This conclusion is precipitous, precisely because we have not seen the facts that convince us that Europe is so different from the United States. While I believe that declining enforcement is a driver in the United States, it is not the only driver of the rise of market power. Technological change is another important contributor.<sup>4</sup> And if the evolution of market power in Europe is similar to that in the United States, both enforcement and technology are serious contenders to explain the European experience. In other words:

<sup>4</sup>The regional comparison highlights the role of technological innovation and the ambiguous effect from market power. On page 102 the book argues that market power does not affect innovation because technology flows without investment. That is why we don't see the effect of market power on growth. At the same time, the thesis of chapter 4 is that the decline in investment as a result of the rise of market power leads to a slowdown in innovation, thus contradicting page 102.

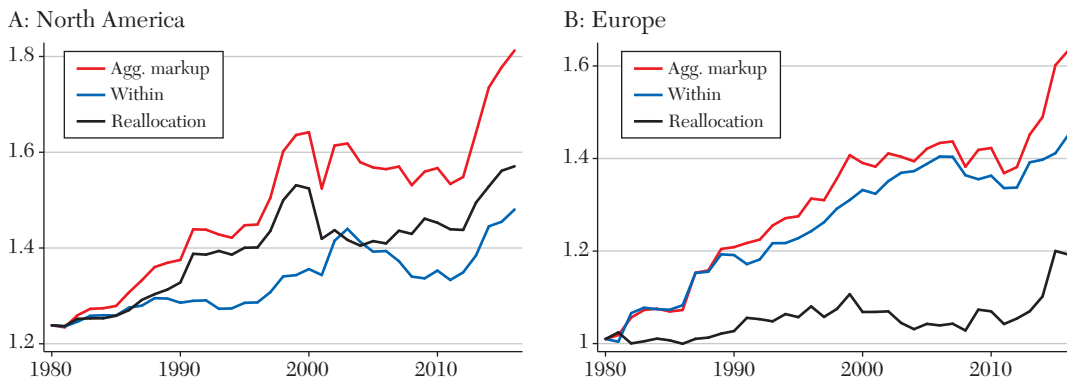


Figure 2. Decomposition of Markups and Reallocation: Europe versus North America

Source: De Loecker and Eeckhout (2018).

declining enforcement in the United States and tough enforcement in Europe is too simplistic an explanation. Reality is a lot more nuanced.

The fact that plenty of companies also in Europe experience a rise of market power not only indicates that Europe is not so different from the United States, but that the different individual experiences are evidence of the role of both lax antitrust enforcement and technological change. With the risk of oversimplifying cherry-picked examples on my end now, let me put ABInBev in the bin of Facebook. Like Facebook's merger with Instagram and WhatsApp, InBev's merger with Anheuser Busch and Miller should have been blocked by the antitrust authorities. Research shows that there is no evidence of so-called synergies from the ABInBev merger (Alvarez, Head, and Mayer 2021) while prices have increased. That confirms that antitrust enforcement has been weak and this merger should have been blocked. At the same time, also in Europe firms have created a dominant position through technological change. Like Amazon, Inditex has created

dominance through investment and organic growth, rather than a series of mergers and acquisitions.

The very different reasons why firms have become dominant shows that the Europe and the United States are not that different. It also highlights that the story behind the underlying causes for the rise of market power go beyond antitrust only. This brings me to the the discussion of the causes of the rise of market power.

#### 4. Causes: The Role of Technology

The book is right to stress throughout that policy choices and the role of merger review in antitrust enforcement, in particular, are important causes of the rise of market power. Many economists will agree that Facebook should never have been allowed to buy Instagram and WhatsApp, and that the beer giants Anheuser Busch, InBev, and Miller should never have been allowed to merge to become the dominant firm in the market. But not all firms have become dominant through a waver of mergers and acquisitions.

*Alternative Hypotheses.* The hypothesis that the book sustains is that the rise of market power is due to decreasing domestic competition. Granted, the book does spell out five alternative hypotheses that could have caused the rise of market power: (i) there is nothing going on; (ii) it is due to the rise of superstar firms; (iii) lower search costs are causing it; (iv) it is brought about by globalization; or (v) intangible assets cause the rise of market power. Apart from the first alternative hypothesis, all of these have something to do with changing technologies.

But the amount of airtime (three pages) that the book dedicates to technological change as a driver of the rise of market power compared the role of merger review, for example, does not add much credence to technological change as a dominant force. Recent research suggests otherwise.

Technological change as a driver of market power has welfare implications that are radically different from lax antitrust enforcement. In particular, market power that derives from scale economies (possibly stemming from network externalities) lead to enormous efficiency gains. Those efficiency gains are a boon for welfare and eventually the customer. The problem is that technological change that leads to lopsided efficiencies of firms allows those low-cost firms to exert market power. In other words, there is incomplete pass-through of efficiency gains by those technology giants to the customer. Recent work (Edmond, Midrigan, and Xu 2018; De Loecker, Eeckhout, and Mongey 2021) shows that higher fixed and sunk costs are an important driver across the entire economy. This is the hypothesis that John Sutton has put forward forcefully in the early nineties (Sutton 1991, 1998) and is consistent with the rise of intangible capital and the importance of network effects.

*Superstar Firms.* Equally important, the book does not pay attention to the

reallocation of economic activity from low- to high-markup firms, which gives rise to superstar firms (Autor et al. 2017). This reallocation accounts for two-thirds of the rise of average market power (De Loecker, Eeckhout, and Unger 2020), and has important welfare implications because of the efficiency gains even if the superstars do not pass on all those gains to the customer.

In part four, the book extensively discusses big tech to argue that today's superstars do not have all that much star power, from a historical perspective: "Facebook, Apple, Google, and Microsoft are smaller than the star companies of previous decades" (p. 258). That is a too-quick conclusion, however, because it is based on incomplete information. Table 13.2 is misleading because it suffers from the same ailments as concentration ratios and HHI. When we look at the top firms only and conclude that they are small in the 2010s compared to the 1950s—a market value share of 9.11 percent versus 27.95 percent—it looks like a dramatic decrease. But there are two important caveats.

First, it is not only the sales of the top five firms that are changing. Also, the denominator (the total sales of publicly traded firms) changes. In particular, the number and sales of firms in the economy as a whole has changed dramatically, and more importantly, the number and sales of publicly traded firms has changed. The number of publicly traded firms rose sharply until the late 1990s, so to have a large share in the 1950s is easy; the number of public firms fell again in the last two decades. The question is, how should we interpret these increases in the numerator when the denominator is changing too? Again, market power is all about the distribution of all firms (their market share, their markups,...), and that is poorly reflected by the share of five firms.

Second, if market power goes up everywhere, then the market value of the entire stock market is higher (market value reflects

the discounted stream of future profits). Again, the denominator is inflated. In periods of high market power, therefore, we may see a lower share of the top firms depending on how the distribution of market values has changed among all firms with market power.

Third, even if the effect of the denominator was controlled for, it is misleading to look at five firms when there are thousands of sectors. We find that market power goes up in all those sectors, yet we are focusing here on only five firms in the whole economy. As the author points out on page 251, “the GAFAMs [Google, Apple, Facebook, Amazon, Microsoft] are not large enough to change the average [of the profit margins of the top 20 largest firms] much.”

What the discussion of the big tech and large firms does bring out very clearly is that those firms heavily reduce the manpower they hire. Those firms hire fewer people in order to generate the same output. That is a sign of market power, which follows from the optimization decision (first order condition) at the firm level: the higher the markup, the lower the choice of inputs, most notably labor. And if enough firms in the economy manage to exert market power, we see that transpire in the aggregate, with a decline in the economy-wide labor share.

Technological change is not absent from the book. The ideas related to technological change are all mentioned somewhere, as I noted above. In that sense, the book is an encyclopedic piece that is exhaustive and complete. For example, important developments such as network effects and scale economies all appear, or the crucial importance of interoperability as a regulation response is mentioned somewhere. But they are not given much importance and are only summarily mentioned.

Consider, for example, the concept of interoperability. Competition between firms with technologies that exhibit network effects can be greatly enhanced by imposing

regulation that forces firms to admit competitors on the incumbents’ network at a price set by the regulator. Interoperability is the reason why a cell phone plan in Europe costs half of what it costs in the United States. The European incumbent telecom operators are forced to allow competitors to use their cell phone tower network. As a result of this simple regulation, there are around 150 telecom operators in Europe, whereas there are only four (and soon maybe only three) in the United States for similar populations close to 400 million.

*Globalization.* Globalization can be interpreted as a form of technological change. Technological change leads to cheaper and faster transportation of goods and people, and the advent of communication technology that allows for outsourcing of goods and services.

The book analyzes the China shock (the entry of China into the World Trade Organization (WTO) in 2001) and how it affects market power. It remains an open question what the effect is of trade openness on market power. On the one hand, it increases competition from abroad and leads to fewer competitors at home, but on the other hand, inputs become cheaper. Becoming an exporter has an ambiguous effect on market power. Just like the effect technological change has on market power.

In a study of the impact of export competition in India, De Loecker et al. (2016) find that globalization increases efficiency, but it decreases competition too. The net effect is lower prices *and* more market power. Those more efficient firms do not pass on all the gains to the customer.

The book argues that the China shock can explain the increase in concentration measures. This is a plausible explanation. Chinese imports have decimated numerous firms in textiles, garments, and furniture, for example. Only the most productive and niche

firms survive. The outcome is an increase in concentration by the mere fact that there are fewer domestic firms competing. But this rise in concentration is due to more competition (in particular from firms abroad), not less. It is only that there are fewer domestic competitors. Therefore, with only the more competitive firms surviving, productive efficiency increases, and the effect on market power remains ambiguous.

A rise in concentration and HHI measures do not necessarily capture this increase in efficiency due to the selection of surviving firms. To evaluate the full impact of the China shock, we need to look at direct, firm-level measures such as markups. And there, as we can see from figure 1, panel A, the China shock coincides with a period of stagnant markups, while we have seen a sharp increase in the period before (1980–2000) and after (2010 to date).

In fact, using firm-level markups grouped at the four-digit Standard Industry Classification (SIC) level, in De Loecker and Eeckhout (2018) we find that higher import penetration as measured by Autor, Dorn, and Hanson (2013) leads to *lower* markups and hence lower market power. Those industry averages mask differences in the distribution—the decline in markups comes from those industries that experienced the largest import competition—but the aggregate effect of the China shock seems to be a *decline* in market power, not an increase.

*Lobbying and Money in Politics.* The book highlights the importance that lobbying plays in fomenting market power. There is a wealth of discussion and analysis on lobbying and money in politics. Unfortunately, facts are scarcer, simply because they do not exist. This makes the narrative a bit lengthy and off topic. Often there is too much detail without a clear focus. For example, flow chart 10.3 (p. 183) or figure 10.2 are way

too detailed and provide limited or no general insight.

Two observations on the topic: First, the book is silent on one crucially important aspect of the interplay between lobbying and market power, namely, the amplification mechanism that exists between the two. Firms that exert market power accumulate profits and ample funds to wage lobbying campaigns. This in turn lets them lobby for regulation that generates even more market power, which in turn generates profits and frees up more funds for lobbying. This vicious circle, I believe, is an important determinant of the firms that achieve market power via lobbying. A similar mechanism is at work when large firms file for merger review to become even larger, and they can outnumber, by multiple times, the DOJ in front of the judge. It is unfortunate that the book does not pick up this arguably most important aspect of lobbying and market power.

Second, the book states that “lobbying is a zero sum game” (p. 156). That may be true in some cases, but mostly, the large firms, such as Google, Facebook, Apple, and Uber, gang up together against the customer, not against each other. And in doing so, they cement the market power in their differentiated markets. The effect of that market power is efficiency loss: deadweight loss in the output market as well as the general equilibrium impact of market power on the labor market. These effects imply that lobbying for market power is a negative-sum game, not zero-sum.

I now turn to the consequences of the rise of market power.

## 5. Consequences

What has attracted most of the interest of the research community regarding the new evidence on the rise of market power is the macroeconomic implications. Because market power is on the rise economy-wide across

all sectors and industries, this has helped explain a number of secular trends since the 1980s that economists have observed and that they have had a hard time explaining. The book focuses mainly on the effect of the decline in investment and the effect on productivity and growth.

*The Decline in Investment and Productivity.* The author (see, e.g., Gutiérrez and Philippon 2017), together with Barkai (2020) and Hartman-Glaser, Lustig, and Xiaolan (2019), has made the decline in investment his signature contribution to the academic literature. This is a really big issue for two reasons. First, it informs us directly of the mechanism of market power. As firms are able to raise prices, they reduce the quantity of production and hence the value of their inputs, most notably capital and labor. Chapter 4 does a wonderful job describing the decline in capital investment. In particular, the discussion of the financial aspect of the firm and how it affects profitability is elucidating, especially the role of share buybacks, and the importance of Tobin's  $Q$ . It displays Philippon's expertise in finance.

Figure 4.3 shows the widening gap between the investment rate and Tobin's  $Q$ , the ratio of a firm's market value over the book value. In a competitive economy they should evolve simultaneously without an increasing gap. Net investment is lagging, leading to an increasing gap between investment and Tobin's  $Q$ . The book does not mention that the gap increases also for another reason: the rise in profitability. Because the market valuation is the discounted sum of future profits, it also reflects market power. It is instructive to separate the role of the decline in investment—the denominator of  $Q$ —from the impact of the rise in market valuation—the numerator.

The book also argues that market power leads to a decline in productivity growth. If investment declines, the argument goes,

there is less innovation and therefore less productivity growth. I find this a plausible hypothesis, but to date there is limited evidence for this mechanism. There is ample evidence for the decline in productivity growth, and the book echoes the forceful argument for the decline in productivity growth by Gordon (2016). Yet, there are still a number of open questions. The most important one is the correct measurement of productivity growth. Much of the measurement of productivity growth traditionally relies on the Solow residual in a competitive market setting with representative firms. With the rise of market power *and* the increased dispersion of markups and firm productivities, these traditional methods may lead to biased productivity measures (see amongst others Baqaee and Farhi 2017).

*Other Macroeconomic Implications.* The book focuses on the decline in investment and acknowledges the effect of market power on the labor share, but otherwise only mentions in passing a number of other macroeconomic implications that can be linked directly to the rise of market power (see De Loecker, Eeckhout, and Unger 2020 and De Loecker, Eeckhout, and Mongey 2021). The reader would have liked to understand the mechanism by which market power generates these macroeconomic outcomes.

First, the economy-wide rise of market power has a general equilibrium effect on wages. This general equilibrium effect is absent in the discussion. In part, this general equilibrium effect explains the fall in the labor share—the remainder being due to the decline in labor force participation—and is an important determinant of the secular trend of wage stagnation. Despite the rise of GDP, real wages have remained constant. Second, the rise of market power leads to a decline in labor turnover. The literature, most notably Decker et al. (2014), has documented that the labor reallocation rate has declined

by about 50 percent even though there has been no decline in the volatility of firm-level shocks. De Loecker, Eeckhout, and Mongey (2021) shows that the mechanism from market power to labor turnover is through incomplete pass-through. Firms with high markups face a steeper residual demand curve and as a result, any shock leads to smaller change in prices and a smaller adjustment of inputs, including labor. Third, the decline in labor turnover automatically leads to a decline in intercity and interstate migration rates (see Kaplan and Schulhofer-Wohl 2012) because a fraction of migration decisions are motivated by job changes. Fourth, incomplete pass-through also drives the decline in the start-up rate (see Karahan, Pugsley, and Sahin 2019 for the facts for example).

Finally, the book does not heed the established fact that there is large reallocation of economic activity from low-markup to high-markup firms (De Loecker, Eeckhout, and Unger 2020 and Autor et al. 2017) and seems to suggest the opposite, arguing that there is no superstar firm phenomenon. For example, the book states: “The decline in investment is inconsistent with the hypothesis of rising superstar firms.” As I have argued above, that evidence is based on measures of concentration, on ratios where the set of firms change, and on regressions that obviate within sector differences.

The reallocation results is an important determinant of the mechanism that helps us understand the rise of market power due to technological change. Firms that are more productive capture more market share, which enhances efficiency. At the same time, those firms sell at too high prices, which allows them to extract rents from the customer.

## 6. *Case Studies*

The fourth and last part of the book zooms in on a number of case studies. This permits a detailed view on how market

power is at work. Those examples are interesting, especially when Philippon displays his profound knowledge of the financial sector. He is a giant in the field of researchers and knows the ins and outs of the institutions, the economic mechanisms, and regulation. Finance is a highly regulated industry because it naturally gives rise to market power. He provides a nice overview of his and others' work on the cost of financial intermediation and the role of the rise of compensation in finance.

The book also discusses some of the ailments in the health-care sector, which is not only large, it is one of the fastest-growing sectors. And market power is a real issue, in particular the high cost of health care in the United States and the low efficiency and quality of the services provided. The book convincingly argues that the apparent efficiency and performance of the health-care sector in the United States is mainly driven by selection, because a large fraction of unhealthy individuals still do not have access health care, even after the Affordable Care Act. And the US medical insurance institutions that are intimately tied to employment make the insurance market more incomplete than it needs be. The most vulnerable, health-wise, either have no employment or are linked to employment pools with high health risks and therefore high premiums. It has been known for a long time (most notably Rothschild and Stiglitz 1976) that those separating equilibria are not efficient.

The narrative is most appealing when comparing health care to the finance sector. An interesting insight in that respect is that the health-care sector (hospitals, insurance, and pharma) aspires to be like the financial sector, which has allowed big banks to exert market power. Health-care companies want to be too big to fail, they want to hide commissions, and they want to write contracts that allow them to build and maintain market power.



Another striking observation in the book related to the finance industry is that the US government—the land of the free without regulation—is highly inefficiently intervening in mortgage markets through Fannie Mae and Freddie Mac. Nearly everywhere else in the world, the mortgage market functions fairly competitively, barring some interventions for distributional issues and to correct for some minor distortions. Yet, the United States refuses to even talk about government intervention and regulation in the health-care market where nearly everywhere else in the world governments have successfully shown that regulatory intervention is the best way to deal with externalities, adverse selection, and market failures. These inefficiencies are rife in health care provision, insurance, and the pricing of pharmaceuticals, yet there is a gut reaction against any government intervention.

*Regulation.* This last part of the book also includes a brief discussion of regulation. With the brevity and the particular focus, the book misses an opportunity to offer the reader and practitioners a set of recommendations on how to combat the rise of market power. The focus is again on lobbying and not on which regulation in general, or even which proposals, spell out how to stop the lobbying influence.

In this short discussion on regulation, the book does briefly touch on the role of technology (network externalities, intangibles, and big data). It leads into some suggestions how to deal with the big tech firms and how to affect merger review, but it is limited in scope and only discussed in passing. For example, there is only a brief mention of interoperability, the regulation that ensures that network industries are forced to have competition in the network, not competition for the network. That is precisely the success of the regulation

and resulting low telecom prices in Europe.

### 7. *The Big Picture*

In the conclusion of the book, I particularly appreciated the description of humility that we as academic economists must hold recognizing the lag in discovering the major developments in market power. The book compares it to what happened in free trade models: “There is a lesson of humility here. It is not only because of misguided populism that economists have lost the trust of the public. It’s also because we have often failed to challenge the consensus and to provide timely advice.”

I agree that there is a lesson of humility here. The economics profession has taken three and a half decades to pick up that there has been a rise of market power and that this has had profound macroeconomic implications. There are some attenuating circumstances. First, researchers in the late 1980s (Hall 1988; Basu and Fernald 1997) have analyzed markups, market power, and returns to scale. Using data from the seventies and the early eighties, the increase was still too early to notice. Moreover, in the absence of firm-level data, those researchers used aggregate data and we know now that those markups do not capture the within-firm heterogeneity that is driving most of the rise in markups (see De Loecker, Eeckhout, and Unger 2020, figure 5).

In the absence of any evidence of high and rising markups, the focus of research on market power in the 1990s shifted toward the micro level studies using the demand approach, championed by Berry, Levinsohn, and Pakes (1995). This research started to take the structure of the economy (preferences, market conduct and competition, entry, et cetera) as well as firm and consumer level data seriously. This program

has induced a discrete jump in the research frontier of IO, with a much more scientific and data-driven understanding of the subtle issues that drive market power. This demand approach has been necessary to shed our often erroneous conclusions based on concentration measures and HHI.

In the meantime, new theoretical developments with models like those of Atkeson and Burstein (2008), and the availability of firm-level data for the entire economy, not just a narrowly defined market, have allowed researchers to study market power in the macroeconomy. These discoveries could have happened earlier, but research typically moves forward with sudden changes and bursts, rather than with smooth adjustments. The good news is that in the last three years, there has been an overwhelming interest in the topic, and brain power and resources have moved into understanding the rise of market power and how it affects the macroeconomy, the labor market, and inequality.

*Welfare* How bad is market power for welfare? To put this question in context, consider the comparison with inflation. We all know that inflation is bad, but welfare calculations typically show rather minor effects in magnitude (around 1 percent of GDP). Is this true also for the welfare effect of market power? Toward the end, the book offers a “back-of-the-envelope” calculation of the welfare cost of market power. While this is a question of first-order importance, that calculation should be used with utter caution. First, it assumes a representative firm, and the main insight that we have gained in the last few years is that the rise of market power is really the rise in the upper tail of the market power distribution. A few firms experience a massive increase in mark-ups and profits, while a most firms see no increase at all. Using a representative firm framework generates outcomes and conclusions that are at odds with the facts (see

Hall 2018 and De Loecker, Eeckhout, and Unger 2020). Second, in order to be able to evaluate the welfare implications, we need to understand the sources of market power. The book strongly argues that it is all about antitrust policy and leaves virtually no role for technological change as a driver of the rise of market power. The evidence is much more mixed. Technological change seems to play an important role (see for example De Loecker, Eeckhout, and Mongey 2021 and Edmond, Midrigan, and Xu 2018) in the rise of market power, with ambiguous effects on welfare: positive effects from efficiency gains and negative effects from deadweight loss. Any conclusion based only on the role of antitrust is therefore partial.

The book ends with a very quick three-page prescription for the future, economic principles for the twenty-first century. Those prescriptions are somewhat tautological (sure, we need free entry to obtain competition) and far from exhaustive: what about patent legislation, technological change, inducing competition when there are network externalities, and so on? I would like to have read the author's views on what a modern, pro-competitive regulatory authority should look like. How should we reform antitrust enforcement? What position do we take on mergers and acquisitions? The book talks about a lot of diseases and symptoms, but little about the viruses and bacteria that cause them, and even less about the medicine that leads to a cure.

The book argues that “[c]onservatives are right that the US needs fewer regulations. I would simply qualify this idea as ‘regulations that hinder the entry or growth of small firms.’” This type of deregulation is certainly desirable, for example, to combat market power due to licensing or due to patent legislation that allows firms to build a patent thicket that creates barriers to entry. However, at the same time, a lot more pro-competitive regulation is needed as well.

Regulation is the first requirement for the well functioning of the capitalist system. Without the rule of law and the protection of property rights, there is no trade, let alone free trade. Regulation is a necessary requirement for the capitalist system to even work. In an economy without property rights there is simply no exchange, just subsistence. The question then is how far do we want the regulation to go. The conservative view is that no regulation and no government intervention combined with strong property rights enforcement (rule of law) is always better. That is true indeed when markets are complete: no incomplete information, no externalities, and no missing markets. The economic reality that has given rise to the current state of the economy tells us that many markets are far from this idealized state of completeness.

We have seen that since the deregulation in many markets (utilities, airlines, et cetera) in the early 1980s, there has been a stark rise of market power. The reason is that firms have been able to build and maintain market power. Technological progress, in particular, has a tendency to favor first-mover advantage that allows firms to consolidate market dominance quickly, killing any threat of entry. We have seen this technological change with IT revolutionizing all sectors in the economy in the last decades, very much in the same way we saw the consolidation of dominance around 1900 with the technological development of electricity, long distance transportation (railways), and the mass exploitation and use of oil.

Regulation is needed to ensure there is not just competition *for* those markets with a first-mover advantage where the winner takes all, but that there is competition *in* the market. This requires *more* regulation, not less, and the interventions need to be increasingly sophisticated. The view “no regulation and minimal government intervention” is a view that is pro-business. However, it is not

pro-competitive or pro-market because, in the presence of incomplete markets, it creates dominant firms, market power, and excess profits. A pro-market view demands proactive regulation, in an optimal amount: enough to ensure that firms cannot build a dominant position and make excess profits, but not too much where regulation creates inefficiencies by itself. Patent legislation is a good example. Some regulation is needed, but only the right amount will lead to efficient outcomes, and the patent legislation requirements are different for pharmaceuticals than for mobile technology. There, I agree with the prescription of the book that governments have to be allowed to make mistakes and experiment: *ex ante* we may not know exactly what the right amount is, and only by trial and error can we find out. One thing is for certain: zero regulation is too little.

## 8. Conclusion

Let me conclude by reiterating that the praise I have for the book by far dominates any of my critiques. My job as a reviewer is to be critical, but I cannot stress enough that the book’s achievement is to draw attention to a first-order issue in economics, policy, and the broad social debate. The book is a careful academic treatise on the role of market power by one of the leading scholars in the field. We should all read it and tell our graduate students to take careful notes on a wide variety of issues where more research is needed.

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