ARE PUBLICLY TRADED CORPORATIONS DISAPPEARING?

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Corporate law scholars and economists have expressed concern recently about the fact that the number of publicly traded corporations in the United States has declined significantly since a peak in the late 1990s. In this Essay, in honor of the late Professor Lynn Stout, who devoted much of her career to the study of large publicly traded corporations, I show that despite a decline in the number of such corporations in the last two decades, they collectively account for about the same share of total economic activity as they have for the last six decades. While there has been turnover in the ranks of the largest corporations in recent decades, there is no reason to believe that these entities are disappearing or becoming less important.

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INTRODUCTION

A substantial part of Professor Lynn Stout's scholarly work during the last decade or two of her life was devoted to the study of corporations and corporate law. Though much of what she wrote applied to closely held corporations as well as publicly traded corporations, she most frequently aimed her sharp quill at the boards, managers, and shareholders of large pub-

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licly traded corporations. In the last couple of years, however, a number of scholars have argued that publicly traded corporations are dying. "Is the U.S. Public Corporation in Trouble?,"[1] asked one of the earliest of a recent spate of articles raising this concern. Others reference *The Vanishing American Corporation*, "The Disappearing Corporation in the New Economy," "The Rise and Fall (?) of the Berle-Means Corporation," and the "Decline of the Public Company."[2] These articles all point to a decline in the number of corporations that are tapping into the public equity markets to go public through initial public offerings (IPOs), and an accompanying decline, at least from levels of the late 1990s, in the number of United States-based publicly traded corporations.

A few scholars have rebutted these concerns.[3] As Brian Cheffins puts it, "Rumours of the Death of the American Public Company are Greatly Exaggerated."[4] While simple counts of the number of publicly traded corporations listed on stock exchanges in the United States suggest that some kind of transformation in the corporate sector may be happening, it would be misleading to conclude that publicly traded corporations are becoming less important in the overall economy. In this Arti-

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1 Kathleen Kahle & René M. Stulz, *Is the U.S. Public Corporation in Trouble?*, 31 J. ECON. PERSP. 67, 67, 88 (2017). A 2016 working paper version of this article was titled *Is the American Public Corporation in Trouble?* (Nat'l Bureau of Econ. Res., Working Paper No. 22857, 2016).

2 GERALD F. DAVIS, THE VANISHING AMERICAN CORPORATION: NAVIGATING THE HAZARDS OF A NEW ECONOMY (2016); Elisabeth de Fontenay, *The Deregulation of Private Capital and the Decline of the Public Company*, 68 HASTINGS L.J. 445 (2017); Gerald Davis, *Post-Corporate: The Disappearing Corporation in the New Economy*, THIRD WAY (Feb. 1, 2017), https://www.thirdway.org/report/post-corporate-the-disappearing-corporation-in-the-new-economy [https://perma.cc/QL5C-HWGH]; Brian Cheffins, *The Rise and Fall (?) of the Berle-Means Corporation* (Univ. of Cambridge Legal Studies Research Paper Series, Paper No. 50/2018, 2018); *see also* Craig Doidge, G. Andrew Karolyi, & René M. Stulz, *The U.S. Listing Gap*, 123 J. FIN. ECON. 464, 464 (2017) ("Relative to other countries, the United States now has abnormally few listed firms."); Craig Doidge, Kathleen M. Kahle, G. Andrew Karolyi & René M. Stulz, *Eclipse of the Public Corporation or Eclipse of the Public Markets* (ECGI Finance, Working Paper No. 547/2018, 2018) ("Since . . . 1997, the number of listed firms . . . has fallen in every year but one.").

3 *See, e.g.*, Scott D. Anthony et al., *2018 Corporate Longevity Forecast: Creative Destruction is Accelerating*, INNOSIGHT (Feb. 2018), https://www.innosight.com/wp-content/uploads/2017/11/Innosight-Corporate-Longevity-2018.pdf [https://perma.cc/YGN9-JCY3] (arguing that "tracking all the additions and deletions from the S&P 500 over the past half century . . . shows that lifespans of companies tend to fluctuate in cycles that often mirror the state of the economy," but that new companies have replaced exiting companies "by creating new products, business models, and serving new customers").

4 Brian R. Cheffins, *Rumours of the Death of the American Public Company are Greatly Exaggerated* (Eur. Corp. Governance Inst., Working Paper No. 444/2019, 2019).

cle, I briefly trace the share of total economic activity in the United States accounted for by the largest publicly traded corporations over the last six decades, and compare this to the findings of several studies purporting to measure such activity going back to the early 1900s. What I show is that, since early in the twentieth century, the largest corporations, which have nearly always been publicly traded, have accounted for one-third to one-half of aggregate economic activity (depending on how that is measured), and that, generally, the share of economic activity accounted for by the largest corporations appears to be remarkably stable over time. Data from some studies done in the 1930s and 1940s suggest that large publicly traded corporations may have represented a somewhat larger proportion of economic activity in the United States in the first half of the twentieth century than they have in the last six decades. But there is no strong downward trend since the 1960s. Indeed, the market capitalization of publicly traded corporations has risen significantly relative to GDP and relative to all nonfinancial corporate assets.

In Part I below, I briefly review the history of the large publicly traded corporation in the United States in the first half of the twentieth century. In Part II, I review data on the evolution of the role of large corporations in the U.S. economy since about 1960. The data I present confirm what other scholars have observed, which is a recent decline in the number of corporations traded in the public markets, and in the number of firms going public via an IPO. But that decline in the number of corporations and in the number of IPOs does not correspond to a decline in economic significance of the publicly traded corporate sector. In fact, if anything, the publicly traded corporate sector has grown relative to various measures of economic activity.

In Part III, I discuss some of the reasons why the simple counts of publicly traded corporations have gone down. One important reason is the emergence of institutions that help to funnel capital to small and mid-sized corporations, so that going to public markets for capital is not as urgent as it may have been in the past. A second reason may be that corporations have lately been merging and consolidating to create huge firms that are ever more dominant in their industries. I argue that these reasons do not suggest that publicly traded corporations are less important in the economy. In fact, large publicly traded corporations are as important to the overall economy as they ever were, and may be exercising more market power.

Finally, I show that, while publicly traded corporations are as large and important to the economy as they ever have been, the nature of the assets they control is changing in ways that may dramatically affect how corporations behave, and the role that they play, as employers and as social institutions.

I
EMERGENCE OF THE LARGE PUBLICLY TRADED CORPORATION, 1900–1960

A merger wave that swept through the corporate sector in the decade from 1895 to 1905 transformed the structure and functioning of the entire U.S. economy. By 1905, at least 1,800 business firms had disappeared into "consolidations," as the giant, newly merged corporations were called.[5] The turn-of-the-century consolidations occurred mainly in industries where technological developments in the late nineteenth century had made mass production feasible, and entrepreneurs had added capacity so quickly that, collectively, they overbuilt their markets.[6] As supply began to exceed demand in many industries, firm owners first formed "pools" or "trusts" to try to keep prices from falling.[7] Within a few years, to avoid running afoul of the Sherman Antitrust Act of 1890,[8] corporations merged rather than just collaborating with each other.

Lamoreaux documented ninety-three consolidations, and found that, by 1904, seventy-two corporations controlled at least 40% of their industries nationwide, and of these, forty-two controlled at least 70% of their industries.[9] These consolidations followed the pattern that had been set by the railroads during the late nineteenth century, when hundreds of small, short-line railroads were connected and merged into systems that eventually stretched across the entire country.[10]

At its inception, thus, the twentieth century saw a sharp reduction in the number of corporations in existence, but a

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5 NAOMI R. LAMOREAUX, THE GREAT MERGER MOVEMENT IN AMERICAN BUSINESS, 1895–1904, at 1–2 (1985).

6 *Id.* at 45. Lamoreaux's analysis in Chapter 3, *id.* at 46–86, makes this point.

7 *Id.* at 45 ("Normal collusive arrangements proved utterly incapable of stemming this virulent competition. So, as we shall see, did the increasingly sophisticated and formal pools that the manufacturers devised. By the end of the decade, only consolidation seemed to offer a chance for relief.").

8 15 U.S.C. §§ 1–7 (2012).

9 LAMOREAUX, *supra* note 5, at 1–2.

10 *See* Alfred D. Chandler, Jr., *The Railroad: Pioneers in Modern Corporate Management*, 39 BUS. HIST. REV. 16, 16 (1965) (arguing that administrative solutions to railroad consolidation paved the way for modern corporate structures).

new presence in the economy of giant corporations that controlled large shares of market in many industries.[11] The public was generally fearful about the implications of this, and scholars, activists, and federal enforcement authorities fretted about what to do. From 1897–1900, according to a survey of the literature by economist Charles Bullock in 1901, at least thirty-four books, reports, and pamphlets, and more than 100 periodical articles appeared addressing the problem of monopoly.[12] Between 1900 and 1914, the Roosevelt Administration and the Taft Administration filed more than 130 lawsuits against corporations under the Sherman Antitrust Act.[13] Two prominent cases, one against Standard Oil,[14] and the other against American Tobacco,[15] both ended in 1911 with the breakup of the targeted combinations into multiple smaller companies, although a number of other consolidations, such as U.S. Steel, survived antitrust challenges.[16] In 1914, Congress passed both the Clayton Antitrust Act[17] and the Federal Trade Commission Act,[18] strengthening the ability of the federal government to restrain the activities of the largest corporations. This period was, as one scholar put it, "the golden age of antitrust."[19]

How big were these huge new corporations, relative to their industries and to the economy as a whole? Despite intense public concern about giant corporations and Congressional inquiries into industrial consolidations, there was no systematic attempt at the federal level to collect data on the corporate sector at the turn of the century.[20] In 1900, however, John Moody published the first of many "Moody's Manuals," which

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11 *See* LAMOREAUX, *supra* note 5, at 5.

12 Charles J. Bullock, *Trust Literature: A Survey and a Criticism*, 15 Q.J. ECON. 167, 167–68 (1901).

13 Morton Keller, *Public Policy and Large Enterprise. Comparative Historical Perspectives*, *in* RECHT UND ENTWICKLUNG DER GROSSUNTERNEHMEN IM 19. UND FRÜHEN 20. JAHRHUNDERT [LAW AND THE FORMATION OF THE BIG ENTERPRISES IN THE 19TH AND EARLY 20TH CENTURIES] 515, 527 (Norbert Horn & Jürgen Kocka eds., 1979).

14 Standard Oil Co. of New Jersey v. United States, 221 U.S. 1 (1911).

15 United States v. Am. Tobacco Co., 221 U.S. 106 (1911).

16 United States v. U.S. Steel Corp., 251 U.S. 417 (1920).

17 Clayton Antitrust Act, 15 U.S.C. §§ 12–27 (2012).

18 Federal Trade Commission Act, 15 U.S.C. §§ 41–58 (2012).

19 Keller, *supra* note 13, at 527.

20 The federal government began collecting census data on manufacturing establishments as early as 1810. *See History, Economic Census*, U.S. CENSUS BUREAU, https://www.census.gov/history/www/programs/economic/economic_censushtml [https://perma.cc/9KCV-V358] (last visited Jan. 16, 2020). These data were not aggregated to produce firm-level data until after 1900. *See* Anthony Patrick O'Brien, *Factory Size, Economies of Scale, and the Great Merger Wave of 1898–1902*, 48 J. ECON. HIST. 639, 639–49 (1988).

listed securities that traded on exchanges in New York, Boston, Philadelphia, Chicago, and several smaller cities.[21] That manual reported that there were nearly 1,800 corporations with publicly traded securities in existence in that year, many of which had been formed through consolidations that had taken place in the previous three years. These corporations had total capitalization of $9.325 billion.[22] To put this in perspective, this represented almost 45% of the $20.766 billion estimated GDP of the entire country in 1900.[23]

Studies of the degree to which individual corporations dominated certain industries after the turn of the century indicate that, while concentration had increased significantly by 1905 in some sectors, such as oil (dominated by Standard Oil), steel (dominated by U.S. Steel), and telecommunications (dominated by American Telephone and Telegraph), some of the consolidations were subsequently broken up by court action (e.g., Standard Oil), and, in a number of industries, the consolidations failed on their own.[24] The Distilling and Cattle Feeding Company (later renamed American Spirits Manufacturing), for example, bought up many of its competitors in 1890, giving it a large share of market and a position on the original list of corporations in the Dow Jones Industrial index for a while.[25] But new competitors entered almost as soon as it was consolidated, challenging its dominance in the industry, according to Lamoreaux.[26] U.S. Rubber had a similar experience. Lamo-

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21 MOODY'S MANUAL OF INDUSTRIAL AND MISCELLANEOUS SECURITIES 47 (John Moody ed., 1900).

22 Dollar values are unadjusted for inflation unless otherwise stated.

23 *See* Louis Johnston & Samuel H. Williamson, *What Was the U.S. GDP Then?*, MEASURINGWORTH, https://www.measuringworth.com/datasets/usgdp/ [https://perma.cc/BL5B-SP5W] (last visited Jan. 16, 2020). When considering how big corporations are, we need to consider how size should be measured, and "relative to what?" My purpose in this Article is to paint a broad picture of how large the largest corporations were in the past, and are today, relative to various measures of aggregate economic activity. I have tried to use measures for which data are available over time, and reasonably reliable. So, while it is not ideal to compare the capitalization of corporations that were tracked by "Moody's Manual" to GDP (since the former is a stock and the latter a flow), there are no comparable data readily available for something like the value of all industrial assets for 1900.

24 *See* LAMOREAUX, *supra* note 5, at 2–5, 180–81.

25 *See id.* at 181. Charles Dow first calculated what became the Dow Jones Industrial Average in 1896. *See Dow Jones Industrial Average*, WIKIPEDIA, https://en.wikipedia.org/wiki/Dow_Jones_Industrial_Average [https://perma.cc/BD9M-ML6E] (last visited Jan. 16, 2020).

26 LAMOREAUX, *supra* note 5, at 181–82. American Spirit Manufacturing did not die, however, and continued to control more than seventy distilleries by 1920 at the beginning of the Prohibition Era. After the repeal of Prohibition in 1934, American Spirit Manufacturing again became part of the Dow index for a while. *See* Alex Planes, *What Happened to the First 12 Stocks on the Dow?*, MOTLEY FOOL

reaux argues that those firms that were able to maintain their dominance did so either by being more efficient than competitors, or by getting control of upstream sources of scarce inputs.[27] Thus, after the wave of consolidations ended, some scholars have argued that the overall concentration of productive capacity and activity declined somewhat during the period from 1905 to 1920.[28] Concentration may have continued to increase in some industries, however.[29] Perhaps more importantly, the position of the leading corporation in any given industry was not necessarily a stable one, with the turnover rate relatively high among the largest firms, according to economist Richard Edwards.[30]

More concerning, perhaps, than the apparent concentration of economic power in certain large corporations, was the fact that many of the important turn-of-the-century consolidations had been facilitated by a very small group of investment banks, the most important of which was J.P. Morgan & Co. Investment bankers from these firms had assumed positions on the boards of directors of the largest and most important corporations in the country. The Banking and Currency Committee of the House of Representatives (Pujo Committee) report, published in 1913, found that a mere 180 individuals held 341 directorships in 112 major corporations in the manufacturing, transportation, mining, telecommunications, and financial industries, and that these individuals were nearly all linked to each other through their ties to investment bankers J.P. Morgan, George F. Baker, and James Stillman, as well as to the banks and trust companies with which they were affiliated.[31]

(Apr. 9, 2013, 11:33 AM), https://www.fool.com/investing/general/2013/04/09/what-happened-to-the-first-12-stocks-on-the-dow.aspx [https://perma.cc/AK92-EVZ3].

27 LAMOREAUX, *supra* note 5, at 189.

28 *See* Richard C. Edwards, *Stages in Corporate Stability and the Risks of Corporate Failure*, 35 J. ECON. HIST. 428, 438–39 (1975).

29 A number of scholars examined the increases in the concentration of economic activity in specific industries that resulted from the turn-of-century merger waves. *See, e.g.*, WILLIAM Z. RIPLEY, TRUSTS, POOLS AND CORPORATIONS (1905) (examining the formation of trusts, pools, and corporations in American industry).

30 Edwards, *supra* note 28, at 435 tbl.1. The list of the largest hundred companies continued to evolve over the century, but, from 1919 to 1969, this list was more stable than it had been in the first two decades of the century. Edwards notes that during this period, corporations dropped out of the hundred largest list at an average rate of only one per year. *Id.*

31 ARSENE PUJO, REPORT OF THE COMMITTEE APPOINTED PURSUANT TO HOUSE RESOLUTIONS 429 AND 504 TO INVESTIGATE THE CONCENTRATION OF CONTROL OF MONEY AND CREDIT, H.R. REP. NO. 1593, at 89 (1913). The Pujo Committee Report is the

In the 1920s, economist Gardiner Means began assembling data to help him measure the changing concentration of economic power in the largest corporations.[32] He found that, as of 1909, gross assets of the 200 largest nonfinancial corporations constituted 42% of the estimated gross assets of all nonfinancial corporations.[33] By 1927, he estimated, the 200 largest nonfinancial corporations controlled about 57% of the gross assets of all nonfinancial corporations.[34] Merger activity picked up again in the 1920s, and the share of gross assets held by the 200 largest corporations continued to grow, reaching almost 62% by 1929, according to Means.[35] Large corporations were also growing faster, by an average of 5.4% per year from 1909 to 1928, compared with an average of 3.6% per year growth of all nonfinancial corporations.[36]

Despite these indications of the concentration of wealth and power of large corporations, public concern about powerful corporations abated in the 1920s.[37] This may have been because consumers were enjoying the benefits of new technology and new ways of organizing production in the form of cars, electric power, radios, refrigeration, and a growing variety of packaged foods and other consumer goods at affordable prices. Large corporations were also turning out to be relatively stable employers, who provided some welfare benefits for their workers.[38] And financial markets famously boomed in this decade, so investors, too, were relatively sanguine about the dominance of large corporations.[39]

Richard C. Edwards has argued that, by the early 1920s, large firms had assumed dominant roles in "industries processing or manufacturing food, tobacco, lumber and paper

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earliest known attempt to assemble data to document the role played by boards of directors in major sectors of the economy.

32 *See* Gardiner C. Means, *The Growth in the Relative Importance of the Large Corporation in American Economic Life*, 21 AM. ECON. REV. 10, 21–23 (1931).

33 Although Means first generated estimates of the share of nonfinancial corporate assets accounted for by the largest 200 corporations in Means, *supra* note 32, his results were refined and reported again in ADOLF A. BERLE, JR. & GARDINER C. MEANS, THE MODERN CORPORATION AND PRIVATE PROPERTY bk. I, 36 tbl. III (1932). Percentages represent author's calculations from Table III.

34 BERLE & MEANS, *supra* note 33.

35 *Id.*

36 *Id.*

37 *See* LOUIS GALAMBOS, THE PUBLIC IMAGE OF BIG BUSINESS IN AMERICA, 1880–1940: A QUANTITATIVE STUDY IN SOCIAL CHANGE 195 Fig. 7-2 (1975).

38 *See* SANFORD M. JACOBY, MODERN MANORS: WELFARE CAPITALISM SINCE THE NEW DEAL 20–26 (1997).

39 *See generally* GALAMBOS, *supra* note 37, at 191–222 (discussing the growing acceptance of the role of large corporations in the 1920s).

products, chemicals, petroleum, rubber, metals of all sorts, farm and construction machinery, electrical machinery, communications equipment, motor vehicles, and photographic equipment," and that the overall industrial structure, as defined by the largest corporations in the early 1920s, remained in place into the 1970s.[40] Gardiner Means shows that, by 1933, the value of nonfinancial corporation assets in the economy had fallen to $142 billion (from $177 billion in 1929), but assets controlled by the 200 largest corporations grew to around 55% of the assets of all nonfinancial corporations.[41] These 200 firms, Edwards shows, were for the most part, the largest firms in their sectors and largely survived to be dominant firms in 1969.[42] Beyond manufacturing, large firms had also emerged by the early 1920s to dominate the transportation, utilities, insurance, and banking sectors, and to a lesser extent merchandising.[43]

In 1936, Franklin Roosevelt cited the findings of Berle and Means's famous 1932 book[44] to make a very different point. He focused on data showing the degree of concentration in the corporate sector, and denounced monopoly in his 1936 presidential campaign.[45] In his acceptance speech at the Democratic National Convention that year, Roosevelt railed that "[h]alf of the industrial corporate wealth of the country had come under the control of less than two hundred huge corporations," that "[t]hese huge corporations in some cases did not even try to compete with each other," and that they were governed by "interlocking directors, interlocking bankers, interlocking lawyers," so that "independent business was allowed to exist only by sufferance."[46] In 1938, Roosevelt sent a proposal to Congress to undertake a "thorough study of the concentration of economic power in American industry and the effect of

40 Edwards, *supra* note 28, at 441.

41 GARDINER C. MEANS, THE STRUCTURE OF THE AMERICAN ECONOMY: A REPORT BY THE INDUSTRIAL SECTION, NATIONAL RESOURCES COMMITTEE 290 app. 11, tbl. IV (1939). Means's estimates of corporate assets in 1929 were adjusted again in his 1939 report, so the numbers here do not agree precisely with those published in BERLE & MEANS, *supra* note 33.

42 Edwards, *supra* note 28, at 446 app. tbl. III.

43 *Id.* at 441.

44 BERLE & MEANS, *supra* note 33.

45 Franklin D. Roosevelt, *Campaign Address: October 14, 1936*, TEACHING AM. HISTORY, https://teachingamericanhistory.org/library/document/campaign-address/ [https://perma.cc/K8XH-TG68] (last visited Jan. 16, 2020).

46 *Id.*; *see also* Joseph L. Weiner, *The New Deal and the Corporation*, 19 U. CHI. L. REV. 724, 729 n.21 (1952).

that concentration upon the decline of competition."[47] Congress created a Commission to undertake such a study, but, within a few months after the report was delivered in 1941, the United States was drawn into World War II by the bombing of Pearl Harbor, and the federal government rapidly took effective control of a large part of corporate productive capacity.[48] The Commission's report observed that major corporations had become national, not local, institutions and should therefore be chartered at the national level, a view that has been called the "basic doctrine of the New Deal."[49]

The fact that United States industrial capacity was fairly highly concentrated turned out to be a great advantage to the war effort. Within a month after Pearl Harbor, in early 1942, President Roosevelt told Congress that "We have the ability and capacity to produce arms not only for our own forces but also for the armies, navies, and air forces fighting on our side. . . . [M]odern methods of warfare make it a task not only of shooting and fighting, but an even more urgent one of working and producing," and our superiority "in munitions and ships must be overwhelming."[50] Thus he laid out his ambitions for what the corporate sector must do: 60,000 aircraft in 1942, and 125,000 more in 1943; 120,000 tanks, and 55,000 antiaircraft guns in the same period. "Without the cooperation of industry, massive production would never get off the ground," historian Doris Goodwin has observed.[51]

To pursue these goals, Roosevelt created the War Production Board in 1942, and the Office of War Mobilization in 1943, and by the end of the War, industrial productivity had increased by 96%, and corporate profits had doubled. The war effort provided the demand that finally pulled the U.S. economy out of the depressed state it had been in during the 1930s, and the federal government, through the Reconstruction Finance Corp., provided the financing. This productive power was

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47 TEMP. NAT'L ECON. COMM., INVESTIGATION OF CONCENTRATION OF ECONOMIC POWER, S. DOC. NO. 77-35, at 11, 16 (1st Sess. 1941).

48 Weiner, *supra* note 46, at 731; *see also* Doris Goodwin, *The Way We Won: America's Economic Breakthrough During World War II*, AM. PROSPECT (Dec. 19, 2001), https://prospect.org/article/way-we-won-americas-economic-breakthrough-during-world-war-ii [https://perma.cc/A44N-TMRK].

49 Weiner, *supra* note 46, at 734.

50 President Franklin D. Roosevelt, State of the Union Address (Jan. 6, 1942), https://web.viu.ca/davies/H324War/FDR.message.Congress.Jan6.1942.htm [https://perma.cc/Z6UD-RYEH].

51 Goodwin, *supra* note 48.

highly concentrated in the largest corporations, however.[52] Moreover, scientific and technical developments associated with the war effort were also highly concentrated in the largest corporations. After the war, this technology was almost immediately put to work by the private sector.

Economists and policymakers thus continued to be interested in the role of big business, the concentration of economic power and the "monopoly problem."[53] In 1949, the Federal Trade Commission published a report that found that, as of 1947, 113 manufacturing corporations held assets of over $100 million each, and that these corporations together accounted for 46% of the total assets held by manufacturing firms.[54] Responding to this study, and to earlier work (cited above) by Gardiner Means, economist M.A. Adelman undertook a careful analysis of various measures of the concentration of industrial activity.[55] Adelman measured concentration using three measures: the share of nonfinancial corporate assets held by the largest 200 corporations, the share of total employment in firms that are large employers, and the share of value added by the largest manufacturing corporations compared with value added by all manufacturing corporations. Adelman also made a number of assumptions and calculations to try to estimate the share of assets held by the largest 200 corporations, in order to produce a number comparable to the estimates produced by Means in the 1930s, and concluded that the largest 200, as of 1947, held somewhere between 40.3% and 43.3% of total nonfinancial corporate assets.[56]

Thus we have estimates of the ratio of the total assets of the 200 largest corporations to the assets of all nonfinancial corporations ranging from 42% in 1909, to 62% in 1929 (although this measure appears to be an outlier), and back down to 40% in 1947.[57] It is difficult to know whether assets of the largest corporations relative to aggregate assets of the corporate sector actually changed that much, or whether the differences are the result of different sources of data and different simplifying assumptions made by the economists who estimated them.

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52 EDWARD S. MASON, ECONOMIC CONCENTRATION AND THE MONOPOLY PROBLEM 19, 24–25 (1957).

53 *Id.*

54 FED. TRADE COMM'N, REPORT ON THE CONCENTRATION OF PRODUCTIVE FACILITIES 16 (1947).

55 *See* M.A. Adelman, *The Measurement of Industrial Concentration*, 33 REV. ECON. & STAT. 269, 269 (1951).

56 *Id.* at 276.

57 *Id.*; BERLE & MEANS, *supra* note 33, at bk. I, 36 tbl. III.

Whether or not the degree of concentration was excessive in some sense, the economy dominated by large publicly traded corporations performed quite well during the War, and continued to perform well after the War in converting to production for consumers. The standard of living of most Americans rose during this period, and admiration for business corporations was so widespread in the 1950s that even Adolf Berle dropped his prior concern about excessive concentration.[58] He cited the studies by Adelman and others, which showed that the largest 200 corporations represented roughly 45% of all nonfinancial corporate assets, a level of concentration that had seemed troublesome in the 1930s. By the late 1950s, the level of concentration had not increased significantly, and Berle no longer seemed to think it was a problem.[59] In fact, he came to regard it as beneficent. "It has probably enhanced the rate of industrial progress, and has stimulated pioneering and fundamental research which such corporations alone can do," John Lintner said, describing Berle's changed attitude.[60] Berle was also encouraged that the leaders of large corporations had become "statesmen" who exercised their power "in conformity with the evolving social conscience of the people."[61]

In 1955, Fortune magazine began compiling and reporting its annual list of the Fortune 500 corporations, and the Federal Trade Commission began tracking and collecting data on mergers and acquisitions.[62] Congress also held hearings into questions about corporate mergers and the resulting growth and market power of large corporations. In 1958, the Subcommittee on Antitrust and Monopoly of the Judiciary Committee of the U.S. Senate produced a report on concentration in industries, utilizing plant-level data collected in the Census of Manufactures for 1947 and 1954.[63] These data showed that as of 1947, the 200 largest manufacturing corporations in the United States accounted for 30% of value added in manufacturing, while by 1954, the comparable number had risen to 37%.

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58 *See* ADOLF A. BERLE, JR., THE 20TH CENTURY CAPITALIST REVOLUTION 42 (1954).

59 *See* John Lintner, *The Financing of Corporations*, *in* THE CORPORATION IN MODERN SOCIETY 166–201 (Edward S. Mason ed., 1959).

60 *Id.* at 170.

61 *Id.*

62 *A Database of 50 Years of Fortune's List of America's Largest Corporations*, CNN MONEY, https://money.cnn.com/magazines/fortune/fortune500_archive/full/1955/index.html [https://perma.cc/349H-52RP] (last visited Jan. 16, 2020).

63 CONCENTRATION IN AMERICAN INDUSTRY, S. REP. NO. 85-128, at 11 tbl.1 (1st Sess. 1957).

In 1962, the Subcommittee updated its figures based on 1958 Census of Manufactures numbers and in a follow-up report, found that the 200 largest manufacturing corporations were responsible for 38% of value added.[64] In another report by this same subcommittee in 1964, one expert testified that, by 1962, the 200 largest manufacturing corporations accounted for 56.8% of all manufacturing assets, and for 67.5% of all profits after taxes earned by all manufacturing firms.[65] In 1965 other scholars produced estimates for the Antitrust Committee of the share of manufacturing assets held by the 200 largest manufacturing corporations in 1962, with Mueller finding 54.6% this time,[66] and Everette MacIntyre finding 57.2% as of 1966.[67]

II
NEW CHALLENGES FOR LARGE CORPORATIONS, 1965–PRESENT

By the end of the 1950s and early 1960s, mergers and acquisitions had become a regular part of the way that corporations and corporate economic activity evolved over time.[68] In the 1960s, conglomerate mergers represented a growing share of this activity.[69] Not surprisingly, Congressional interest in conglomerates was piqued, and leading economists from government and academia were brought in to testify at hearings of the Subcommittee on Antitrust and Monopoly in 1965.[70] These economists produced a variety of studies in an attempt to quantify what was happening. Gardiner Means testified that manufacturing concentration had increased substantially over

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64 *Id.*

65 *Economic Concentration: Hearing Before the Subcomm. on Antitrust & Monopoly of the Comm. on the Judiciary*, 88th Cong. 115 tbl.2 (2d Sess. 1964) (statement of Willard F. Mueller, Director, Bureau of Econ., FTC).

66 *Economic Concentration*: *Hearing Before the Subcomm. on Antitrust & Monopoly of the Comm. on the Judiciary*, 89th Cong. 519 (1st Sess. 1965) (statement of Willard F. Mueller, Director, Bureau of Econ., FTC).

67 *Economic Concentration: Hearings Before the Subcomm on Antitrust and Monopoly of the Comm on the Judiciary, Part 8: The Congolomerate Merger Problem*, 91st Cong. 5187 (2nd Sess. 1970).

68 *See Economic Concentration*, *supra* note 65, at 124 tbl.7. Mueller suggests that over one-third of the disappearing companies between 1950 and 1963 were acquired by the 200 largest corporations in 1950, and that the assets of the firms acquired by these 200 corporations represented about 66% of the total assets of all acquisitions involving the 1,000 largest corporations of 1950. He also stated that between 1951 and 1963, the 200 largest manufacturing corporations made at least 1,956 acquisitions. *See id.*

69 MARGARET M. BLAIR & GIRISH UPPAL, THE DEAL DECADE HANDBOOK 62 (1993).

70 *Economic Concentration*, *supra* note 65.

the previous three decades.[71] This was a problem, he argued, because in a growing share of industries, prices in the economy were "administered" or dictated by large organizations, rather than determined in competitive markets, a fact that directly contradicted key assumptions behind the view that a "capitalist" or free market economy would produce and deliver goods in the most efficient way. In many parts of the economy, he argued, there were no free and competitive markets, so markets could not be relied upon as the mechanism in the economy for maintaining full employment and avoiding inflation. Means' conclusion from these observations was that big business must be balanced by government regulation in markets to address these issues.

Other expert witnesses fretted that "large conglomerate enterprise[s] may have significant power."[72] That power made it possible for corporations to use profits made in one business to cross subsidize activities in another business, and thereby unfairly compete away market share. "A big firm has advantages over a smaller rival just because it is big," economist Corwin Edwards testified.[73] Others presented data showing that as concentration goes up, turnover among the top corporations declines so that leaders in specific industries become less subject to challenge by competitors.[74]

Notably almost no one in this period expressed concern that the problem with big corporations was that corporate managers were unaccountable to shareholders as a result of the separation of ownership from control. "With the exception of a highly polemical study by another Marxist economist, Victor Perlo, there were virtually no published critiques of managerialism between 1932 and 1970," according to sociologist Mark Mizruchi.[75]

In an effort to assess whether competition was being harmed by mergers in general, and conglomerate mergers in particular, the Federal Trade Commission (FTC) began tracking data on mergers and acquisitions from about 1955, and continued to collect these data through 1979. By the 1980s, private

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71 *Id.* at 17 (statement of Gardiner C. Means, economist) ("These estimates, though less reliable than those for 1929, suggest that there has been a very considerable increase in concentration in manufacturing as a whole in the last 33 years.").

72 *Id.* at 42 (statement of Corwin D. Edwards).

73 *Id.*

74 *Id.* at 64 (statement of Lee E. Preston).

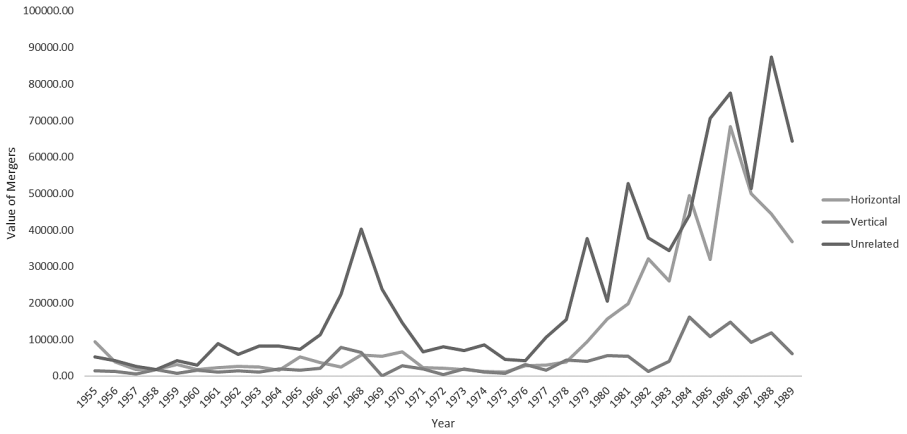
75 *See* Mark S. Mizruchi, *Berle and Means Revisited: The Governance and Power of Large U.S. Corporations*, 33 THEORY & SOC'Y 579, 587 (2004).

sector organizations were collecting merger data, and the FTC quit collecting such data.[76] Figures 1-A and 1-B report the number of mergers and acquisitions and the dollar value of corporate acquisitions over the period from 1955 through 1989 (in 1987 dollars), broken out by whether the mergers were "horizontal" in nature (between two firms in the same line of business), "vertical" (between two firms, one of which is a supplier to the other), or "unrelated," indicating a conglomerate merger. These data show clearly how conglomerate mergers dominated activity in the 1960s, whereas in the 1980s, horizontal mergers and conglomerate mergers were both common.

FIG. 1-A
NUMBER OF HORIZONTAL, VERTICAL, AND UNRELATED MERGERS, 1965–1989[77]

76 BLAIR & UPPAL, *supra* note 69, at 63 tbl. 4-10.
77 *Id.*

FIG. 1-B
VALUE OF HORIZONTAL, VERTICAL, AND UNRELATED MERGERS, 1965–1989[78]



The reaction of corporate investors to the conglomerate merger wave of the 1960s seemed to be quite positive at the time. As merger activity climbed and peaked in 1968, the S&P 500 financial index also climbed and peaked in 1968.[79] Despite concerns about large corporations having too much market power, conglomerate mergers were never convincingly shown to exercise monopoly power in ways that harmed consumers, and Congress did not take any actions to limit them.[80]

By the 1960s, private sector organizations were beginning to compile and publish data on publicly traded corporations captured from the filings those corporations are required to make with the Securities and Exchange Commission. Some of these data, going back to as early as 1955 for some companies, are now available through commercial databases such as Compustat and CRSP.[81] These data now provide relatively easy

78 *Id.*

79 *S&P Historical Prices by Month*, MULTPL, https://www.multpl.com/s-p-500-historical-prices/table/by-month [https://perma.cc/BJ2Q-68Y2] (last visited Jan. 17, 2020).

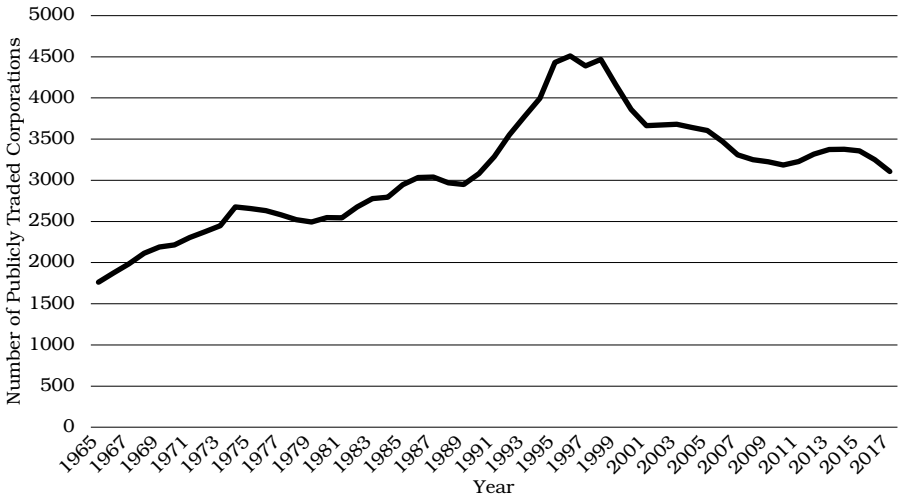
80 *See* Mizruchi, *supra* note 75, at 583. With hindsight, conglomerate mergers came to be seen in the 1980s as part of a larger problem of poor corporate management and governance. But antitrust enforcement tools available in the 1960s were not designed to deal with this problem.

81 Compustat is the best single source for quarterly and annual, firm-level accounting and financial data compiled from SEC filings by corporations, although it does not include information about trading prices or volumes for the securities of the companies that it follows. For daily price and trading volume, the best single source is CRSP (Center for Research in Securities Prices). Compustat data go back to 1955, whereas CRSP data go back to 1975. Both sources attempt to track all publicly traded U.S. corporations. Both data sets are available

ways to track the share of economic activity accounted for by large corporations.

Figure 2 reports a simple count of the number of publicly traded nonfinancial corporations chartered in the United States and trading on U.S. stock exchanges, as tracked by Compustat since 1960.

FIG. 2
NUMBER OF PUBLICLY TRADED U.S. NONFINANCIAL CORPORATIONS, 1960–2017[82]

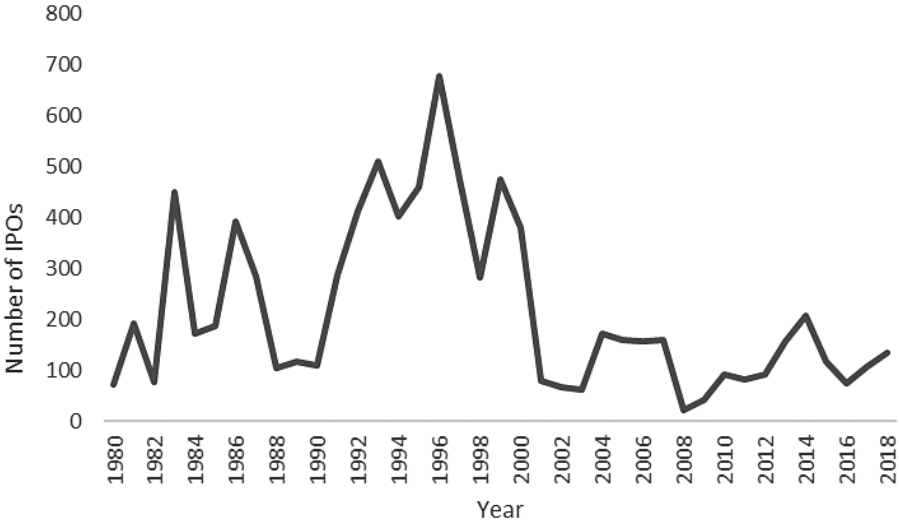


This figure dramatically illustrates the basic facts that have motivated some scholars to be concerned about the "decline" of publicly traded corporations in the last few years. There has been an undeniable decline in the number of U.S. nonfinancial corporations listed and traded in U.S. stock markets from the peak during the dot-com boom in the late 1990s. Moreover, there has also been a decline in the number of corporations "going public" through initial public offerings, as illustrated in Figure 3.

through WHARTON RES. DATA SERVS. (WRDS), wrds.wharton.upenn.edu [https://perma.cc/N9BJ-SS23] (last visited Sept. 24, 2019).

82 Author's calculations based on Wharton Research Data Services. "Compustat Annual Updates", *id.*

FIG. 3
NUMBER OF IPOS IN U.S. FINANCIAL MARKETS, 1980–2018[83]



But what should we make of this decline? Are publicly traded corporations indeed becoming less important to economic activity in the United States? I believe the answer to this is no. As the discussion below shows, large publicly traded corporations have continued to account for about the same share of economic activity, as measured in a variety of ways, as they have since the 1960s.

To address this question, I extracted annual data on total assets, total revenues, total employment, and total market capitalization for publicly traded nonfinancial corporations tracked by Compustat, for every year since 1960, and identified the 200 largest nonfinancial corporations by each of these measures for each year.[84] I then aggregated the data for each year, and compared the top 200 firm totals to economy-wide data from the Federal Reserve Board, the Bureau of Economic Analysis, and other official sources.

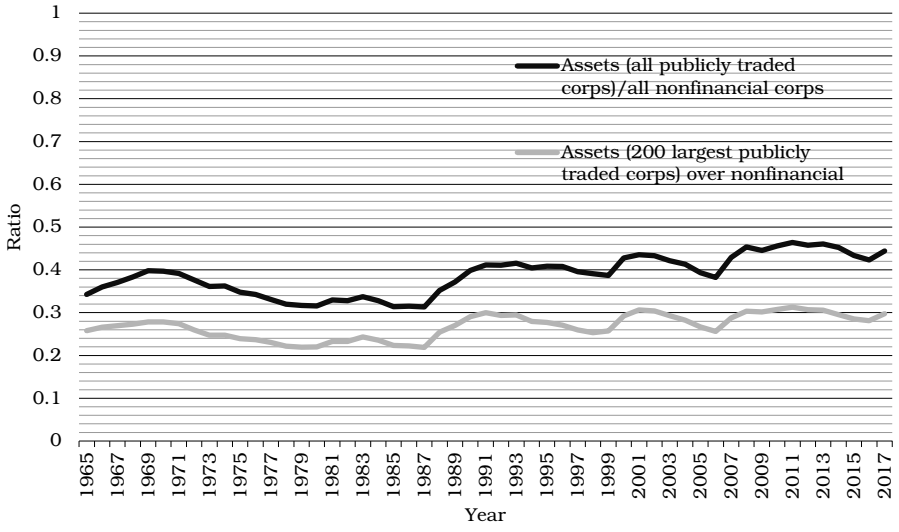
In Figure 4, for example, we see that the total assets of the 200 largest nonfinancial corporations tracked by Compustat represented 26% of total nonfinancial corporate business as-

83 Jay R. Ritter, *Initial Public Offerings: Updated Statistics* (Dec. 31, 2018), https://site.warrington.ufl.edu/ritter/files/2019/01/IPOs2018Statistics_Dec.pdf [https://perma.cc/8YJE-Q7WZ].

84 I looked at the top 200 to correspond with estimates by prior scholars of the share of economic activity that flowed through the largest corporations. Although Compustat data go back to 1955 for many corporations, there were many missing values in the data prior to about 1960.

sets as of 1965.[85] In the years since, this measure of the relative size of the largest 200 corporations wandered in the range between 21% and 31%. Although there is no strong trend, assets of the largest corporations have grown modestly relative to the assets of all nonfinancial corporations since about 1987. There is certainly no indication here that the publicly traded corporate sector is collapsing or disappearing. Figure 4 also plots total assets of all publicly traded corporations (as tracked by Compustat) as a share of all corporate nonfinancial private fixed assets. The paths traced by these two measures suggests two things: that the top 200 corporations capture a large share of the total assets of all publicly traded corporations, and that changes in the share of all publicly traded corporations is strongly driven by changes in the top 200. This suggests that focusing on the top 200 may provide a reasonable proxy for the publicly traded corporate sector as a whole.

FIG. 4
ASSETS OF 200 LARGEST, AND ALL PUBLICLY TRADED CORPORATIONS RELATIVE TO ALL NONFINANCIAL CORPORATE ASSETS, 1965–2017[86]

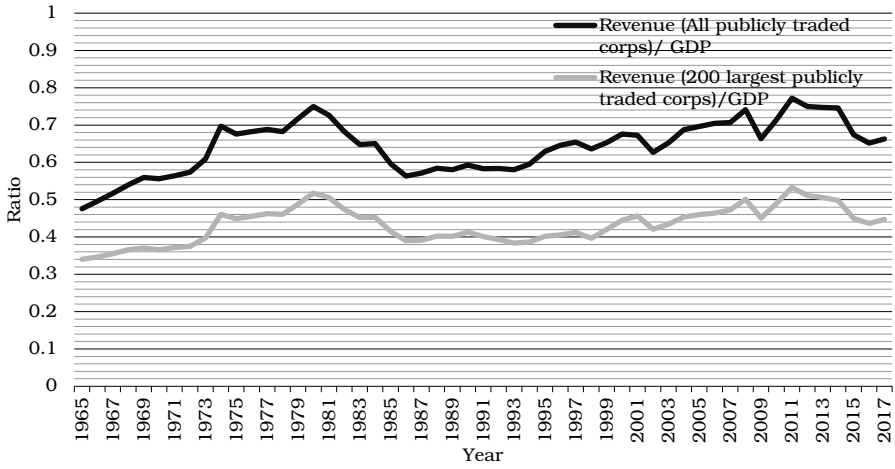


85 Author's calculations are from *Compustat Annual Updates*, WHARTON RES. DATA SERVS., wrds.wharton.upenn.edu [https://perma.cc/N9BJ-SS23] (last visited Sept. 24, 2019); and *Nonfinancial Corporate Business, Total Assets*, FED. RES. BANK ST. LOUIS, https://fred.stlouisfed.org/series/NCBTSTA027N [https://perma.cc/52X5-N4L5] (last updated June 6, 2019).

86 *Id.*

Other measures of the share of economic activity accounted for by the 200 largest corporations in the last sixty years tell a similar story. In Figure 5, I report the aggregate revenue of the 200 largest publicly traded corporations as a share of GDP. We see the share rising from about 34% in 1965 to 52% in 1980, then falling back to 39% in 1986. The decline in the share of GDP accounted for by large corporation revenues may have occurred because numerous publicly traded corporations and subsidiaries of publicly traded corporations were taken private in leveraged buyouts during the 1980s. Since then, this share has gone up and down some but seems to have followed a slow upward trend peaking at 53% in 2011, and then falling back to 46% in 2017.

FIG. 5
REVENUE OF LARGE PUBLICLY TRADED CORPORATIONS RELATIVE TO GDP, 1965–2017[87]

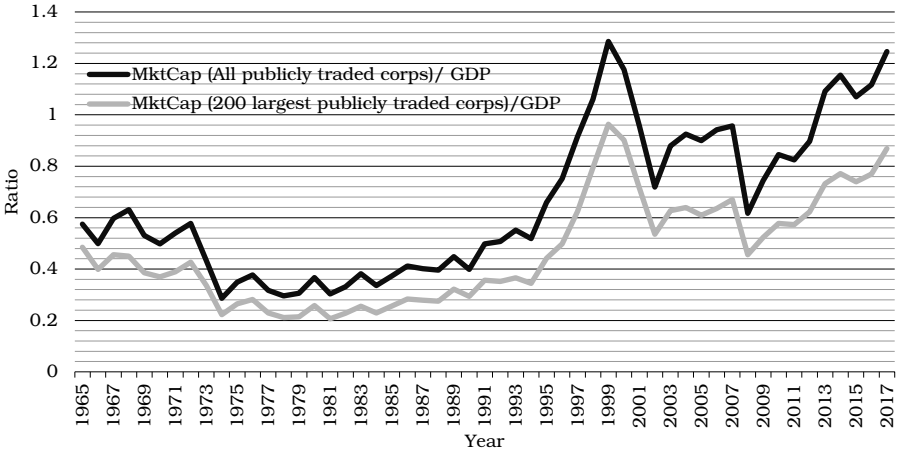


In Figure 6, I measure the share of economic activity of the largest 200 firms by comparing the market capitalization (debt plus equity) of these firms to GDP. For this measure, the swings from one period to another are much larger, with a long trough in the 1970s and 1980s, then a huge peak during the dot-com boom of the 1990s. Except for the dot-com boom and bust, the long term trend seems to be upward since 1980, but

87 Author's calculations from Wharton Research Data Services, *Compustat Annual Updates*, wrds.wharton.upenn.edu [https://perma.cc/N9BJ-SS23] (accessed Sept. 2019); GDP data from BUREAU OF ECONOMIC ANALYSIS, *National Income and Product Accounts, Table 1.1.5 Gross Domestic Product*, https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2 [https://perma.cc/5J23-L3MV] (accessed May 2019).

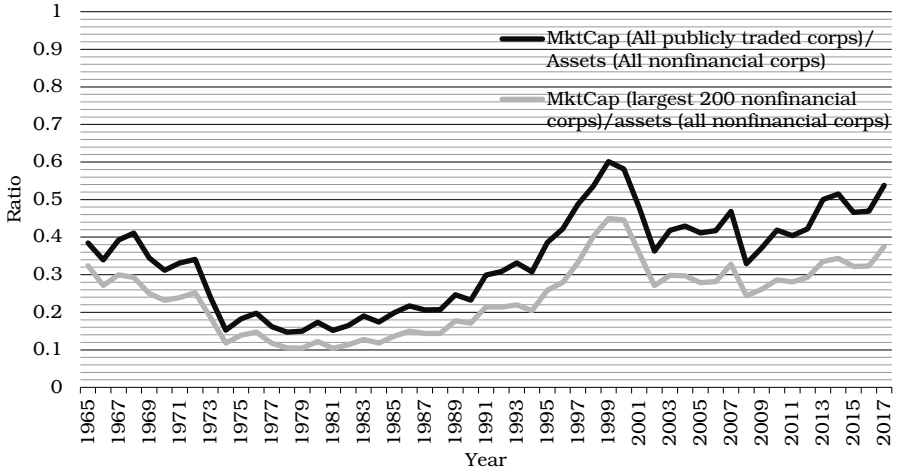
with substantial variation from year to year. In Figure 7, I report the market value of debt plus equity in the largest 200 corporations relative to all nonfinancial corporate assets. The upper line in each of these figures is the share accounted for by the entire publicly traded nonfinancial corporate sector, as tracked by Compustat.

FIG. 6:
MARKET VALUE OF EQUITY PLUS DEBT OF LARGEST CORPORATIONS RELATIVE TO GDP, 1965–2017[88]



88 Author's calculations from Wharton Research Data Services, *Compustat Annual Updates*, wrds.wharton.upenn.edu [https://perma.cc/N9BJ-SS23] (accessed Sept. 2019); GDP data from Bureau of Economic Analysis, *National Income and Product Accounts, Table 1.1.5 Gross Domestic Product*, https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2 [https://perma.cc/5J23-L3MV] (accessed May 2019).

FIG. 7:
MARKET VALUE OF EQUITY PLUS DEBT OF LARGEST CORPORATIONS RELATIVE TO VALUE OF ALL NONFINANCIAL CORPORATE ASSETS, 1965–2017[89]



These broad indicators of the relationship between the largest corporations and the overall economy, however, do not reveal some important and fundamental changes that were taking place over the last half century. The story of these changes can be summarized by decades.

In the 1970s, the U.S. economy performed poorly. Throughout the decade, economic growth was slow, unemployment was edging up, and inflation grew. Some of the factors that drove this were macroeconomic factors: government budget deficits were run to help finance the Vietnam War, the Organization of Petroleum Exporting Companies (OPEC) staged an oil embargo in 1973 that caused oil shortages and huge price hikes, and OPEC production limits triggered another oil crisis in 1979.[90] Unemployment reached 8.2% in 1975, then edged back down to 6% by 1979; the inflation rate hit 9% in 1978, 13.3% in 1979, and 11.8% in 1980, setting the stage for

89 Equity values are author's calculations based on Wharton Research Data Services, *Compustat Annual Updates*, wrds.wharton.upenn.edu [https://perma.cc/N9BJ-SS23] (accessed in Sept. 2019); *Nonfinancial Corporate Business, Total Assets* (Federal Reserve Bank of St. Louis), https://fred.stlouisfed.org/series/NCBTSTA027N [https://perma.cc/52X5-N4L5].

90 *See Oil Embargo, 1973–1974*, OFF. HISTORIAN, U.S. DEP'T. ST., https://history.state.gov/milestones/1969-1976/oil-embargo [https://perma.cc/46FR-45LJ] (last visited Sept. 30, 2019); Laurel Graefe, *Oil Shock of 1978–79*, FED. RES. HIST., https://www.federalreservehistory.org/essays/oil_shock_of_1978_79 [https://perma.cc/8FPT-R7UN] (last visited Sept. 30, 2019).

a crushing effort by the Federal Reserve to break inflation in the 1980s.[91]

U.S. corporations also began to face serious competition from corporations in Europe and Japan in the 1970s. Not surprisingly, the effect of these problems was reflected in a sorry performance of corporations in financial markets. An investment of $1,000 in the S&P 500 on January 1, 1969, would only have been worth $1,109 by January 1, 1980, a growth in value of only 0.84% per year, in nominal terms, for the whole decade.[92] With inflation taken into account, this represented a loss of more than 50% in purchasing power terms. Low and negative corporate profits were reflected in the decline in the value of debt plus equity of the 200 largest corporations (Figures 6 and 7), which reached $545.93 billion in nominal terms in 1972, then declined to as low as $344.38 billion in 1974, and did not recover, even in nominal terms, until 1979, when the equity value of the 200 largest corporations reached $563.63 billion. As a share of all nonfinancial corporate assets, the value of debt plus equity of these corporations fell from 25% in 1972 to 10.5% in 1979, then recovered very slowly, not getting above 25% again until 1995, as shown in Figure 7. Merger activity also slowed from the 1960s, and remained low throughout the 1970s, as seen in Figures 1-A and 1-B above. The overall poor performance of the corporate sector during this decade laid the groundwork for dramatic changes to come in the next decade.

The 1980s began with an economic crisis. Inflation reached the highest levels of the post WWII period, 12.5% in 1980, and nearly 9% in 1981.[93] Facing growing popular fear of uncontrollable inflation, the Federal Reserve Board increased interest rates in late 1978, pushing the Federal Funds Rate (the rate that is directly controlled by the Fed, and that forms the

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91 *Labor Force Statistics from the Current Population* Survey, BUREAU LAB. STAT. (Sept. 14, 2019), https://data.bls.gov/timeseries/LNS14000000 [https://perma.cc/F4J5-YQUV]; Michael Bryan, *The Great Inflation*, FED. RES. HIST. (Nov. 22, 2013), https://www.federalreservehistory.org/essays/great_inflation [https://perma.cc/9H67-2SS5]; *see also* Tim McMahon, *Historical Inflation Rate*, INFLATIONDATA, https://inflationdata.com/Inflation/Inflation_Rate/HistoricalInflation.aspx [https://perma.cc/J7SN-ZFX3] (last visited Sept. 30, 2019).

92 Author's calculation is from data on historical prices of S&P 500 index. *See S&P 500 Historical Prices by Year*, *supra* note 79. The calculated growth in nominal value does not include dividends, which would have added another 2.5% per year, on average, to the nominal return on investment, still a startlingly low rate of return in real terms, given the high rate of inflation in this decade.

93 McMahon, *supra* note 91.

baseline for other rates) to 10%.[94] Inflation continued, unabated. In 1979, President Jimmy Carter appointed Paul Volcker to be chairman of the Federal Reserve. Volcker decided to do whatever it took to bring down inflation. Under his leadership, the Fed raised the Federal Funds Rate to 15% in October of 1979, then to 20% in March of 1980, precipitating a mild recession in the first half of 1980.[95] But inflation stayed high. The Fed allowed the Federal Funds Rate to decline for a while in 1980, but raised it again to 20% in December of 1980. The economy sank back into recession in 1981; this time, unemployment shot up to nearly 11% by 1982. The Fed kept the Federal Funds Rate between 15% and 20% until April of 1982. The result was the worst recession since the Great Depression, officially dated from July 1981 to November 1982.[96] Unemployment stayed high for a number of years, but the Fed kept nominal interest rates high even as inflation finally slowed down.[97]

"Manufacturing states were battered by the downturn," the *Economist* has said of this period.[98] The unemployment rate in Michigan, for example, reached almost 17%. "Mortgage lenders were devastated by high interest rates. The banking system was pushed to the point of insolvency. Things were quite bad," the *Economist* added.[99]

Extraordinarily high interest rates of the first half of the 1980s, coming immediately on the heels of a long decade of low returns for investors in publicly traded corporations, created a highly problematic situation for investors. The cost of capital for new investment, which is driven by interest rates, was so high for most of the 1980s that it exceeded the rate of return investors were receiving on existing investments in many in-

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94 Kimberly Amadeo, *Fed Funds Rate History with Its Highs, Lows, and Charts*, BALANCE (Aug. 15, 2019), https://www.thebalance.com/fed-funds-rate-history-highs-lows-3306135 [https://perma.cc/63Y9-LF2G].

95 *Id.*

96 *See U.S. Business Cycle Expansions and Contractions*, NAT'L BUREAU ECON. RES., https://www.nber.org/cycles.html [https://perma.cc/F4G9-68H6] (last visited Jan. 17, 2020).

97 *See Labor Force Statistics*, *supra* note 91; *Labor Force, Employment and Unemployment, 1929-1939: Estimating Methods*; U.S. BUREAU ECON. ANALYSIS, Tbls. 1.1.1, 1.1.5 (Aug. 29, 2019), https://apps.bea.gov/national/pdf/SNTables.pdf [https://perma.cc/5J23-L3MV]; *Effective Federal Funds Rate*, FED. RES. BANK ST. LOUIS (Sept. 3, 2019), https://fred.stlouisfed.org/series/FEDFUNDS [https://perma.cc/Z7C4-MU9G]; *see also* Amadeo, *supra* note 94.

98 Ryan Avent, *The Volcker Recession: Who Beat Inflation?*, ECONOMIST (Mar. 31, 2010), https://www.economist.com/free-exchange/2010/03/31/who-beat-inflation [https://perma.cc/5XLE-6HD3].

99 *Id.*

dustries.[100] The result was that, for corporations in many industries, cash flow being generated by corporations could not be profitably reinvested in the same businesses. Investors could earn more by investing in "risk-free" U.S. Treasury securities. On the basis of estimates I made in the 1990s, this situation prevailed for most of the 1980s, with economic fundamentals signaling to investors that they should disinvest from corporations and move their funds to Treasury securities or other low-risk investments. Not surprisingly, this led to dramatic changes in the 1980s in the structure and governance of corporations, which I have explored in other work.[101]

This turmoil in the corporate sector in the 1980s is not obviously reflected in the share of aggregate economic activity reported in Figures 4–7 above. But it was reflected in a new phenomenon: hostile takeovers and leveraged buyouts.

We can see from Figures 1-A and 1-B that merger activity took off in the 1980s. Activity was high for both horizontal mergers and unrelated mergers. Behind the aggregate merger data was a rapid increase in indebtedness of the corporate sector as it financed acquisitions with debt, especially with high-risk bonds called "junk bonds." Aggressive takeover tactics, in which would-be acquiring corporations made "tender offers" directly to investors to try to acquire a controlling position in the target corporation without the support of target firm management (these transactions were often called "hostile takeovers") became common. Corporate managers responded by deploying takeover defenses if they feared they might become targets of hostile offers. And existing managers of corporations undertook debt-financed transactions in which publicly traded corporations repurchased shares in self-tender offers.[102] From 1980 through 1989, 478 publicly traded corporations, with a total value of $170 billion (1987 dollars), were taken private via such private buyouts, and an additional 559 subsidiaries or units of publicly traded corporations, with a total value of over $80 billion (1987 dollars), were spun off from

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100 *See* Margaret M. Blair & Robert E. Litan, *Corporate Leverage and Leveraged Buyouts in the Eighties*, *in* DEBT, TAXES, AND CORPORATE RESTRUCTURING 58 (John B. Shoven & Joel Waldfogel eds., 1990). The cost of capital for a corporation is generally thought to be equal to the "risk-free" rate of interest (such as the Federal Funds Rate), adjusted upwards to account for risk.

101 *See id.*; *see also* Margaret M. Blair, *Financial Restructuring and the Debate about Corporate Governance*, *in* THE DEAL DECADE: WHAT TAKEOVERS AND LEVERAGED BUYOUTS MEAN FOR CORPORATE GOVERNANCE 1–18 (Margaret M. Blair ed., 1993).

102 *See generally* BLAIR & UPPAL, *supra* note 69 (providing extensive data documenting these trends during the "deal decade" of the 1980s).

parent corporations and taken private.[103] Corporations that went private via these "leveraged buyouts" nearly always sold off substantial assets after the buyout in order to pay down the debt. Many of these transactions had the effect of undoing conglomerate mergers that had taken place in the 1960s and 1970s.[104] This breaking up of some of the largest conglomerates contributed to an increase in the total number of publicly traded corporations, from about 2,600 in 1980 to about 3,400 in 1990 (See Figure 2).

Reeling from the waves of restructuring in the 1980s, corporate executives and policy makers began fretting about whether U.S. corporations could still be "competitive" in international markets.[105] Executives and directors of many long-dominant corporations complained that they could not compete with corporations in other countries where labor costs were lower. Labor leaders and politicians complained that U.S. corporations were failing to invest and innovate to stay competitive. Commissions and advisory councils were formed to study

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103 *Id.*

104 Sanjai Bhagat, Andrei Shleifer & Robert W. Vishny, *Hostile Takeovers in the 1980s: The Return to Corporate Specialization*, *in* 1990 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS 1, 2 (1990) ("By and large, hostile takeovers represent the deconglomeration of American business and a return to corporate specialization."); *see also* Gerald F. Davis, Kristina Diekmann & Catherine Tinsley, *The Decline and Fall of the Conglomerate Firm in the 1980s: The Deinstitutionalization of an Organizational Form*, 59 AM. SOC. REV. 547, 547 (1994).

105 Many factors have been cited as possible causes of competitiveness problems, but it is widely agreed that the problems have their origins in changes that occurred in the 1980s. *See, e.g.*, MICHAEL E. PORTER, JAN W. RIVKIN & ROSABETH MOSS KANTER, COMPETITIVENESS AT A CROSSROADS: FINDINGS OF HARVARD BUSINESS SCHOOL'S 2012 SURVEY ON U.S. COMPETITIVENESS 3 (2013), https://www.hbs.edu/competitiveness/Documents/competitiveness-at-a-crossroads.pdf [https://perma.cc/CZ2G-7XNW] (noting that "the roots of America's competitiveness challenge . . . [began] in the late 1970s and the 1980s, when changes in geopolitics and technology dramatically broadened the geographic scope of competition"). For an argument that the high cost of capital during that era was a competitiveness problem, see G.N. HATSOPOULOS, *Technology and the Cost of Equity Capital*, *in* TECHNOLOGY AND ECONOMICS (1991). For an analysis of the effect of corporate takeovers, see Alfred D. Chandler, *Competitiveness and Capital Investment: The Restructuring of U.S. Industry, 1960–1990*, 68 BUS. HIST. REV. ix (1994); Bronwyn H. Hall, *Corporate Restructuring and Investment Horizons in the United States, 1976–1987*, 68 BUS. HIST. REV. 110 (1994). *See generally* Michael E. Porter, *Capital Choices: Changing the Way America Invests in Industry*, 5 J. APPLIED CORP. FIN. 4 (1992) (examining how private capital is allocated in the United States, Japan, and Germany, and the relative effectiveness of corporate governance practices in the United States); Gary P. Pisano & Willy C. Shih, *Restoring American Competitiveness*, HARV. BUS. REV. (July–Aug. 2009), https://hbr.org/2009/07/restoring-american-competitiveness [https://perma.cc/8SU6-F6AP] (arguing that collective R&D, engineering, and manufacturing capabilities of U.S. corporations must be rebuilt).

the "competitiveness problem."[106] Few of these studies pointed to excessively high interest rates as an important factor driving the restructuring. As corporations cut back and restructured, however, working people across the country, by the hundreds of thousands, were laid off from jobs that had provided good pay and benefits, and were forced to try to find new work in an economy that was undergoing a transition that even the experts did not fully understand.

What corporate employees and managers saw as turmoil and disruption in the 1980s was good news to the financial investors who were funding these restructurings. The S&P 500 Index rose by threefold from 107.94 at the end of 1979 to 353.40 on December 31, 1989.[107] Much of this new value was apparently coming from smaller and medium-sized corporations, however, because the value of debt plus equity of the 200 largest corporations grew only modestly relative to GDP in the 1980s, and did not even recover the highs set in the 1960s. (See Figure 6).

Two other changes were underway in the corporate sector in the 1980s. The "separation of ownership and control" that had been highlighted by Berle and Means early in the century[108] was undergoing a long slow reversal, as financial institutions such as retirement plans, mutual funds, insurance companies, and trusts and endowments came to own larger and larger shares of the typical corporation. As shareholdings became more concentrated, shareholders began to seek and gain more power in corporate governance.[109] Financial interests, in the form of takeover investors (pejoratively called "raiders"), found new ways in the 1980s to finance efforts to acquire control of target corporations. Managements and boards of target corporations found new ways to resist those efforts. Target company managers and boards argued that they needed to protect corporate enterprises from the "raiders," who, it was asserted, just wanted to strip assets out of the corporations for

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106 The Council on Competitiveness, a nonpartisan organization of business, labor, academic, and government leaders, for example, was formed in 1986. The Competitiveness Policy Council was an independent federal advisory council, formed under the authority of the Competitiveness Policy Council Act, 15 U.S.C. § 4801, passed in 1988. Both organizations produced a number of reports in the late 1980s and 1990s.

107 *See, e.g.*, *Macrotrends S&P 500 Index—90 Year Historical Chart*, MACROTRENDS, https://www.macrotrends.net/2324/sp-500-historical-chart-data [https://perma.cc/292G-WCRW] (last visited Jan. 17, 2020).

108 BERLE & MEANS, *supra* note 33, at bk. 1, 5.

109 Mark J. Roe, *Takeover Politics*, *in* THE DEAL DECADE, *supra* note 101, at 321, 322.

quick profits.[110] Takeover investors argued that it was the duty of managers and boards to "maximize share value" for the corporation's shareholders, and that this required that shareholders be able to sell their shares to the takeover investors, who were willing to pay higher prices.[111]

Thus the legal question at issue involved who should decide whether a takeover offer should be accepted? More broadly, who should have control over corporations, and in what situations? And what are controllers required to do? Target company managers won some rounds, and were permitted by courts to take some protective actions. But courts articulated circumstances in which managers could no longer resist a takeover offer, but must negotiate to get the highest price they could for shareholders in a sale of control of the corporation.[112] Over the course of the decade, managers and boards of nearly every publicly traded corporation came to understand that if they did not ensure shareholders a high enough return, outside investors now had the tools to get control and to squeeze out higher returns for themselves.

The effect of this battle over hostile takeovers was a dramatic change in the culture inside corporations to emphasize returns to shareholders over all other corporate goals. Compensation packages of senior managers were restructured to give them powerful incentives to try to increase the prices at which the company's shares were trading, and notions that corporations had obligations to their employees, or to the communities where they operated, or to any other social goals, were largely abandoned.[113] The prices that corporate shares traded for in financial markets were deemed to be the only valid measure of whether corporate managers and directors were doing a good job. And as the corporate sector adjusted to these new rules of the game, the value of corporate securities on the stock markets rose substantially, providing strong returns for shareholders and affirmation for those who argued in support of "shareholder primacy."

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110 Margaret M. Blair & Lynn A. Stout, *Specific Investment: Explaining Anomalies in Corporate Law*, 31 J. CORP. L. 719, 737 (2006).

111 Margaret M. Blair, *What Must Corporate Directors Do? Maximizing Shareholder Value Versus Creating Value Through Team Production*, BROOKINGS 1, 3 (June 15, 2015), https://www.brookings.edu/research/what-must-corporate-directors-do-maximizing-shareholder-value-versus-creating-value-through-team-production/ [https://perma.cc/5YRV-TDGQ].

112 *See, e.g.*, Revlon, Inc., v. MacAndrews & Forbes Holdings Inc., 506 A.2d 173, 182 (Del. 1986).

113 Blair, *supra* note 111, at 4.

Going into the 1990s, the debates about corporate governance and takeovers continued, but the corporate restructuring underway in the 1980s and early 1990s produced a new wave of changes. As takeover investors bought control and took existing older companies private, huge amounts of cash were being paid out to the shareholders who were being bought out. From the end of 1983 through the end of 1990, publicly traded corporations bought back $632 billion more of their equity than they issued—a withdrawal of capital from the publicly traded corporate sector that was unprecedented.[114] This flood of money flowing out of the publicly traded corporate sector was thereby freed up to be used to finance a rapidly emerging venture capital sector of tech start-ups and dot-com companies. These companies, in turn, began to tap into the financial markets by going public through "initial public offerings" (IPOs). Over the course of the 1990s, the number of IPOs, and the dollar value of funds raised through IPOs, increased nearly every year. (See Figure 3). The value of many newly listed dot-com companies soared, as investors got excited about the business possibilities opened up by the internet.[115] This, in turn, encouraged more tech companies, and more investors to do even more IPOs. From 1990 through 1994, 1,720 corporations went public, raising aggregate proceeds of $90.91 billion, more than had ever been raised via IPOs in any prior five-year period. Then, from 1995 through 1999, another 2,370 corporations went public, raising an aggregate of $200.36 billion. The NASDAQ index, which included most of these new publicly traded corporations, went from 415.8 on Jan. 1, 1990, to 3940.35 on Jan. 1, 2000, an increase of more than nine-fold in ten years.[116] To say that the financial markets were giddy over the dot-com IPOs is an understatement. The NASDAQ index

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114 BLAIR & UPPAL, *supra* note 69, at 8. The payout of capital from publicly traded corporations to their shareholders has been substantial in recent years too. *See, e.g.*, William Lazonick, *The New Normal is "Maximizing Shareholder Value": Predatory Value Extraction, Slowing Productivity, and the Vanishinng American Middle Class*, 46 INT'L J. POL. ECON. 217 (2017); Mark DeCambre, *Stock Buybacks Among S&P 500 Companies Mark a Record Streak*, MARKETWATCH (Mar. 25, 2019), https://www.marketwatch.com/story/stock-buybacks-among-sp-500-companies-mark-a-record-streak-2019-03-25 [https://perma.cc/PSX2-GKDU].

115 Jay R. Ritter, *Initial Public Offerings: Updated Statistics*, UNIV. FLA. 1, 3 (Mar. 8, 2016), https://site.warrington.ufl.edu/ritter/files/2016/03/Initial-Public-Offerings-Updated-Statistics-2016-03-08.pdf [https://perma.cc/5QM2-7C5Q].

116 *NASDAQ Composite Index*, FED. RES. BANK ST. LOUIS, https://fred.stlouisfed.org/series/NASDAQCOM [https://perma.cc/KG5L-QGUL] (last visited Aug. 19, 2019).

peaked the next month, in February of 2000, at 4696.69. Then the air started to come out. It became clear that many of the newly public companies would not meet their lofty revenue projections, much less their earnings projections, and the bubble collapsed.

The "dot-com bubble" and bust is easily seen Figure 2 above, which shows the number of publicly traded nonfinancial corporations tracked by Compustat in each year from 1965 through 2017. This number rose rapidly from 1990 to 1996, peaking at about 4,600. The number has declined since then, and was at 3,106 in 2017.[117] Other scholars have written about this decline, raising questions about whether the publicly traded corporation is becoming obsolete, or disappearing, or at least is no longer an attractive vehicle for organizing economic activity.[118] But, one way to understand these data is to view the dot-com bubble of the late 1990s and early 2000s, and the financial crisis of 2008–2009, as the aberrations (or, perhaps, spasms of an economy in transition). The number of publicly traded corporations is about the same now as it was in 1985, but the largest corporations continue to account for about the same share of economic activity as they have for most of the last six decades.

Data reported in the figures above provide some measures of what happened to the top 200 corporations relative to the economy as a whole in the 1990s. We see that, in the 1990s, the ratio of value of debt plus equity of the top 200 corporations to GDP (Figure 6) rose from 28% to over 90% by 1999. For all nonfinancial publicly traded corporations, which would include many of the newly-listed dot-com companies, the value of debt plus equity relative to GDP rose from 39% in 1990 to 122% in 1999. In other words, by the end of the 1990s, the financial markets assigned significantly more value to the securities issued by publicly traded corporations than the estimated value of all the goods and services produced in the economy as a whole for that year. Part of this value, as it became clear during the market bust in 2000–2002, was a bubble. But some part of that new value was, and still is, real.

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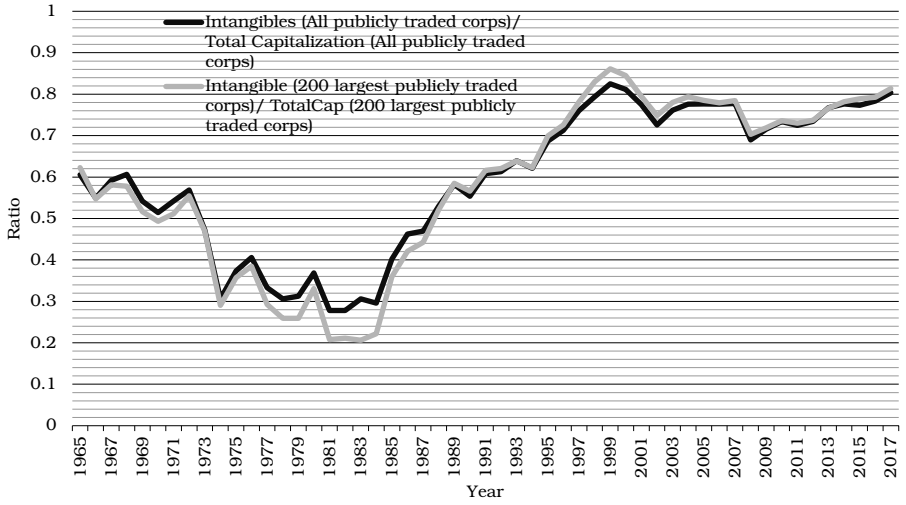
117 Author's calculations are based on *Compustat Annual Updates*, WHARTON RES. DATA SERVS., wrds.wharton.upenn.edu [https://perma.cc/P8HG-EBRY] (last visited Aug. 19, 2019).

118 *See* sources cited *supra* notes 2 and 3; *see also* Isabelle Martinez & Stéphanie Serve, *Reasons for Delisting and Consequences: A Literature Review and Research Agenda*, 31 J. ECON. SURVS. 733 (2017).

The assets behind all that value, however, have undergone a massive transformation. As documented in Figure 8, a growing share of the total value of corporations in the last few decades is tied to assets such as patents, copyrights, brands, customer lists, and huge and growing banks of data on the behavior and preferences of hundreds of millions of customers and potential customers. These "intangible" assets now account for much of the value of corporate equities. The full implications of this transition are not yet fully understood.

FIG. 8
INTANGIBLE AND FINANCIAL ASSETS RELATIVE TO TOTAL MARKET CAPITALIZATION[119]



III
WHY HAVE THE NUMBER OF PUBLICLY TRADED CORPORATIONS DECLINED?

So if large publicly traded corporations are not becoming less important in the aggregate economy, why has the total number of such companies declined so much since the late 1990s? There are likely many reasons, some of which have been explored by other scholars,[120] but this broad review of the economic and political forces that have swept through the cor-

119 Author's calculations based on Wharton Research Data Services, *Compustat Annual Updates*, wrds.wharton.upenn.edu [https://perma.cc/P8HG-EBRY] (accessed in May 2019). The value of all intangibles (including financial assets) was estimated by computing the total market value of equity plus debt of the corporation and subtracting the value of that corporation's property, plant, and equipment.

120 *See* articles cited *supra* notes 1–4.

porate sector in the last half century suggests at least two reasons. The first is that the 1980s marked the beginning of a movement by the publicly traded sector away from investing in hard assets, such as factories, toward investing in intangible assets such as patents and software. The 1990s saw a gold rush in technology investments. Financial markets had extracted a huge amount of money from the publicly traded sector in the 1980s, and they were looking for attractive places to put that money to work. The changes being wrought by the internet revolution were just beginning to be appreciated in the 1990s, and this new, exciting field attracted a substantial amount of this money. Some of the new ideas were funded by the public market through IPOs—the number of IPOs peaked in 1996 at 677. This helped drive up the total number of corporations listed in Compustat, which rose by 47% from 1987 to the peak of 4,509 nonfinancial corporations in 1996. At the same time, many other new ideas were being funded privately through venture capital funds.

The collapse in stock market values after 1999 followed the pattern of numerous past financial bubbles. Valuations of "dot-com" companies reached absurd heights in the late 1990s, but eventually, reality began to set in, and as Professor Lynn Stout has taught us in much of her work on speculative markets, financial markets often overreact on the upside, and then also overreact on the downside.[121] The S&P 500 index fell from a peak of 1,525 in August of 2000 to a low of 788.9 in March of 2003. The effect was to wipe out much of the supposed new value. IPO activity collapsed to only sixty-three in 2003, and the number of publicly traded corporations tracked by Compustat fell 18% by 2002, to 3,686, and has continued to decline since then, as seen in Figure 2.

In other words, the decline in the number of IPOs and in the number of publicly traded corporations since 2000 can be seen as a correction after a period of excess exuberance in the market. Since 2000, the new corporations that truly had viable business models (such as Facebook, Google, Amazon) have grown enormously, while other innovative corporations were either swallowed up by the successful corporations, or turned out not to have a viable business model. Nothing in this process suggests that the corporate sector is disappearing or even in decline. As we have seen above, the corporations that re-

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121 *See, e.g.*, Lynn A. Stout, *Are Stock Markets Costly Casinos? Disagreement, Market Failure, and Securities Regulation*, 81 VA. L. REV. 611, 649 (1995).

main publicly traded continue to account for at least as much economic activity as they have since the 1960s.

The second potential cause of the sweeping changes discussed above is that the financial markets have become extraordinarily good at pulling assets out of disfavored corporations and industries and redeploying the assets into new corporations that seem to be more promising. Since 2002, the corporate sector has been going through a long period of sorting out which ideas and business models in the new economy are viable, and truly bring new value to the economy, and which parts need to be discarded. At the same time, the best business models are being consolidated under the control of fewer corporations.

Remarkably, throughout this process, the largest corporations, while undergoing substantial restructuring and turnover, continue to account for a significant share of total economic activity, whether that is measured by the value of their assets, or their revenues relative to GDP, or the market value of their equity and debt. I see no indication that large publicly traded corporations are relinquishing this role.

CONCLUSION

Large corporations, especially publicly traded corporations, are as important to the overall economy in the United States as they have been since the merger movement at the end of the nineteenth century. The details of which corporations and which technologies account for the most economic activity have changed over time. In the last four decades, it is possible that the turnover rate in the corporate sector may have increased, at least from what it was from the mid-1930s into the 1970s. It is not clear yet whether the new giant corporations in the internet, communications, and computer technology industries that have elbowed older industrial corporations out as the leading employers, repositories of wealth, and contributors to GDP will continue to dominate the economy, or whether they will also be pushed out in due time by the gales of technological change. But what does seem clear to me is that this remarkable institution that Lynn Stout devoted much of her career to studying and critiquing will continue to be an important object of study for many years to come.